



SUPPLEMENTAL PLAQUE EXAMPLES

ROUTE NAMES

PACIFIC COAST

GRAND LOOP

JURISDICTION NAMES / LOGOS

OXNARD

THOUSAND OAKS 



VENTURA COUNTY REGIONAL BIKEWAY WAYFINDING PLAN

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EXECUTIVE SUMMARY

OVERVIEW

The Ventura County Transportation Commission (VCTC) developed this Bicycle Wayfinding Plan to help improve the convenience and safety of people traveling by bike in Ventura County. Prepared collaboratively with county and municipal agencies, stakeholder groups and the general public, this Plan serves as a toolkit for the development of a regional wayfinding network.

Purpose

The purpose of the project is to identify regional bicycle routes, inform prioritization of locations for bike infrastructure improvements, and develop a consistent bicycle wayfinding sign design for regional bike routes throughout Ventura County. Regional routes prioritize connections between communities. This Plan is intended to be an overlay to local bikeway networks, which provide connections to local destinations, such as schools.

Vision

Through clear and consistent messaging and placement, the Ventura County regional wayfinding network will provide seamless navigation along on- and off-street regional bikeways and to regional destinations.

COLLABORATIVE PROCESS

A collaborative process was key to the development of this plan. The VCTC Board designated the VCTC Transportation Technical Advisory Committee (TTAC) as the oversight committee. The TTAC then assigned specific staff to a TTAC Wayfinding Subcommittee. The TTAC, TTAC Wayfinding Subcommittee and VCTC staff oversaw and guided each phase of the process. Local biking groups, and the public provided on-the-ground experience and input of regional bikeways. Public input and guidance was solicited through an online mapping tool, online surveys, group bike rides and two pop-up wayfinding events.

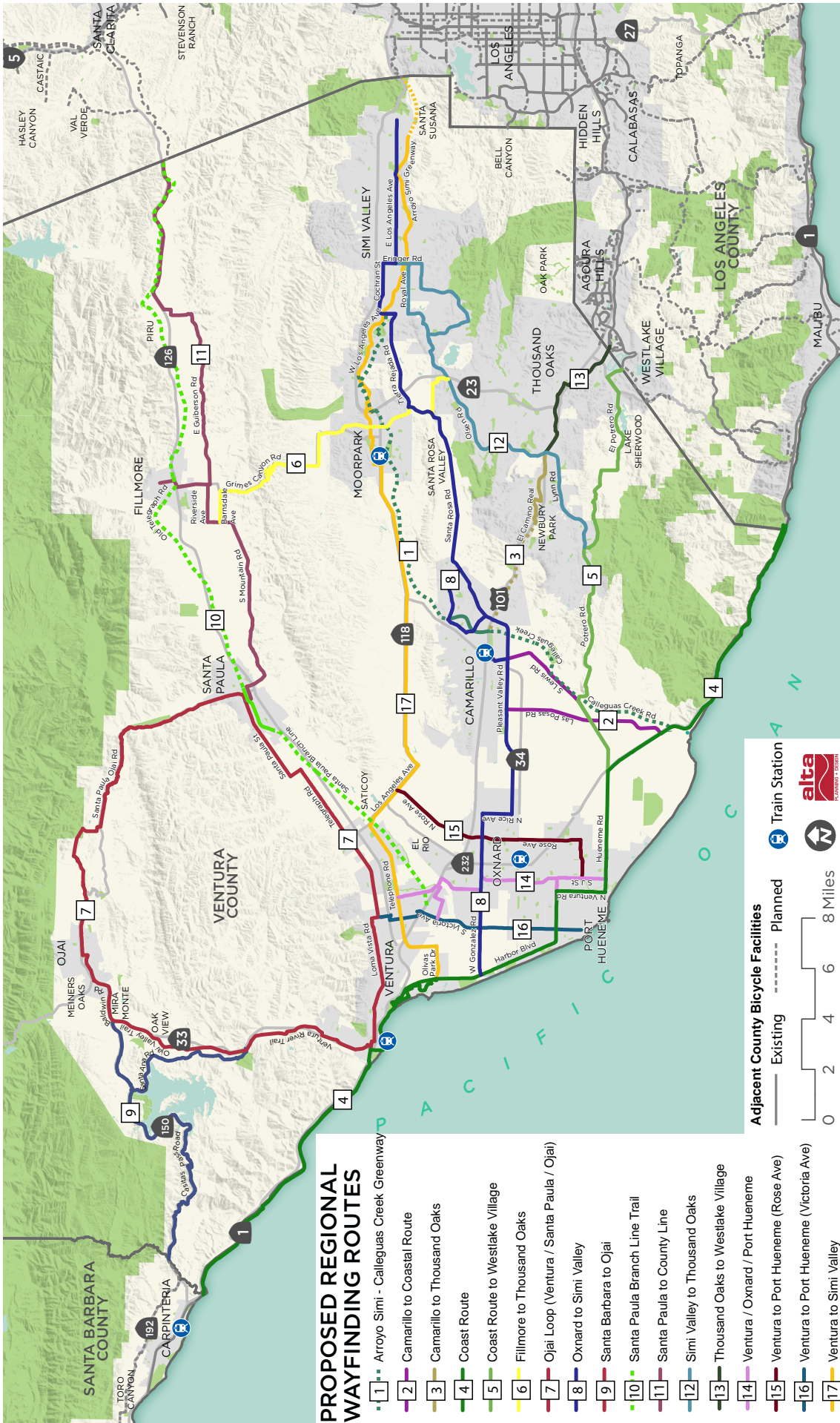
KEY RECOMMENDATIONS

Recommendations included in this Plan document the outcome of the planning process and serve as a guide for future programming and implementation of Ventura County Regional Bicycle Wayfinding. Key recommendations include:

- 17 routes that provide for regional connectivity and are reflective of where people are currently riding and where they want to ride in the future
 >> See Section 2: Route Identification + Prioritization to learn how routes were selected
- A family of bicycle wayfinding signs and placement plans to facilitate a consistent wayfinding experience for people riding bikes across Ventura County
- Sign placement plans for Phase I implementation by local jurisdictions
 >> See Section 3: Wayfinding Toolkit for details on the Regional Bikeways Wayfinding signs



Figure 1: Ventura County Regional Bicycle Wayfinding Family of Signs



KEY STATS:

17
REGIONAL
ROUTES

413
MILES OF
BIKEWAYS

386
ONLINE SURVEY
RESPONSES

148
SIGNS FOR
PHASE 1
IMPLEMENTATION

HOW TO USE THE WAYFINDING PLAN

The Plan has been divided into three sections, each describing a particular aspect of the wayfinding network. The three sections are described below:

1

Section 1: Foundations for Ventura County Bicycle Wayfinding

Establishes a basis for this initiative and the components of the regional wayfinding system by providing an overview of the project, planning process, existing conditions, wayfinding principles, sign standards, and case studies.

2

Section 2: Route Identification + Prioritization

Outlines the process of the wayfinding network route selection including the public engagement process and provides detailed documentation on how routes were analyzed for prioritization.

3

Section 3: Wayfinding Toolkit

Defines each component of the bicycle wayfinding sign family, provides guidelines for sign placement, and technical guidance for implementation. This section was developed so that it can be used as a stand-alone reference as the county and municipalities move forward with programming and implementation.



SECTION 1:

WAYFINDING FOUNDATIONS



1.1 INTRODUCTION

PROJECT OVERVIEW

The Ventura County Transportation Commission (VCTC) developed this Bicycle Wayfinding Plan to help improve the convenience and safety of people traveling by bike in Ventura County.

Riding a bike as a means of transportation has been growing in popularity throughout the United States, as well as Southern California. Bikes offer low-cost mobility to those who may not have access to a vehicle or choose not to drive for a trip and offer a source of exercise for many recreational trips.

Ventura County is also an extremely popular area for recreational and sport cycling, thanks to scenic routes along the coast, topography for challenging riding both on and off-road, and leisurely bike paths such as the Ojai Valley Trail. Biking popularity has grown to the extent that it is being recognized as an economic generator. In fact, two bike tourism groups - Cycle California Coast and the East Ventura County Bicycle Tourism Group - have organized to facilitate Ventura County becoming a destination for bike tourism.

The county appeals to a wide variety of bike riders and types of bike trips. This Plan is for everyone: commuters and recreational and sport s, experienced and new riders, young and old. This Plan helps set the stage for identifying and improving regional routes for Ventura County residents and visitors alike.

The project team consists of VCTC staff, the Wayfinding Subcommittee of the VCTC Transportation Technical Advisory Committee (TTAC), and consultants Alta Planning + Design. The project team began the planning process by gathering data and hosting an interactive online map where the public could provide feedback on local biking conditions. The project team utilized these findings to develop regional bicycle routes, and to develop designs for signage to guide a coordinated approach to bicycle

Figure 1-1: [Opposite Page] This Wayfinding Plan is for a Variety of People Who Ride Bikes

wayfinding across Ventura County. **This document summarizes the planning process and findings from this effort, and provides tools for VCTC and local jurisdictions to inform improvements to regional bicycling routes.**

PURPOSE & BENEFITS

A countywide wayfinding plan is a cost-effective treatment to improve the biking experience in Ventura County and facilitate more regional trips by bike. Bicycle wayfinding signage provides information on direction and distance to key regional destinations and other routes. This countywide project provides guidelines for regional route designation, wayfinding sign design and placement, and identifies key gaps in the regional bikeway network.

A coordinated, well-designed signage system improves the coherency of a bikeway network. It also provides a greater sense of security and comfort for users by confirming that riders are on the correct route and are aware of how far they will have to travel to reach their destination. On-street bicycle wayfinding signs also provide visual cues to motorists that people on bikes may be present and should drive with caution.

The proposed wayfinding system will benefit Ventura County residents and visitors by:

- Providing user information about destinations, direction, and distance
- Enhancing users' ability to navigate the county's bikeway network and find key attractions
- Reinforcing the visual identity of Ventura County
- Promoting community awareness of trails and the bikeway network



Visibility of access point to the Coast Route could be improved.

REGIONAL WAYFINDING GOALS

The TTAC Wayfinding Subcommittee, which is comprised of representatives from the county's local jurisdictions, established 10 goals to guide the development of the Ventura County Wayfinding Master Plan. Six goals focus on route planning and four goals focus on wayfinding sign design.

ROUTE PLANNING

GOAL 1

Identify & Prioritize. Identify and prioritize regional bicycle routes.

GOAL 2

Connectivity. Promote connectivity between Ventura County communities as well as Santa Barbara and Los Angeles Counties.

GOAL 3

Destinations. Encourage connectivity to regional destinations such as parks, trails, educational institutions, employment centers, transit, park and ride lots, and tourist destinations.

GOAL 4

Inclusive Bikeways. Identify wayfinding routes distributed for all user types across the county.

GOAL 5

Comfort. Assess the difficulty of county-identified bicycle routes to enable people to gauge comfort level along the routes based on skill or experience.

GOAL 6

Community Engagement. Maintain community engagement throughout the planning process.

SIGN DESIGN

GOAL 7

Sign Design Guidelines. Create uniform wayfinding sign design guidelines.

GOAL 8

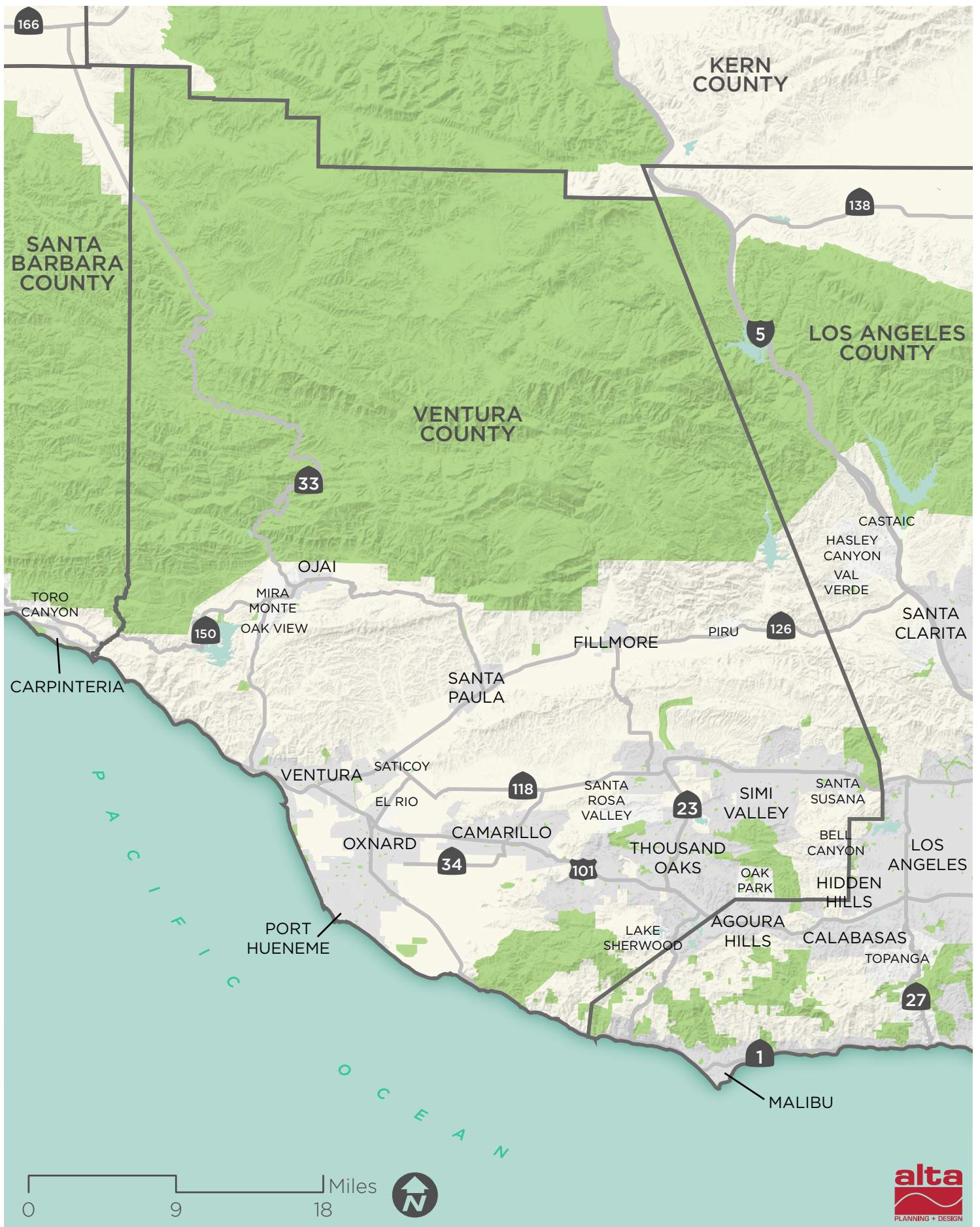
Route Visibility. Use wayfinding signage to make bicycle routes more visible.

GOAL 9

Local Economy. Support the local economy by providing Ventura County residents and tourists with directional and distance information.

GOAL 10

Technology. Incorporate technology, and be accessible via GPS and online map tools.



1.1 EXISTING CONDITIONS



People riding bikes on Ventura Road in Oxnard.

SETTING

Ventura County is situated along the California coast between Santa Barbara County (to the west) and Los Angeles County (to the east). Ventura County is comprised mostly of unincorporated areas, with 10 incorporated cities (Figure 1-2). A majority of the County's 840,000 residents live in the incorporated cities which are concentrated in the southern portion of the county, while the northern portion is largely mountainous and undeveloped. Although the county is, by definition, urbanized, it has a long-standing agricultural heritage from which it derives its character.

The county's moderate climate, scenic ocean and mountain vistas, and ample recreational amenities make it a great location for recreational and sport cycling. The relative proximity of much of the county's population and employment centers also make commuting by bike an attractive option.

City boundaries are not contiguous in the county. Regional corridors must connect through county unincorporated areas and on high-speed State highways or rural roads shared with agricultural vehicles. In addition, geographically, the county can be divided into five areas: the Simi Valley, the Conejo Valley, the Oxnard Plain, the Santa Clara River Valley, and the Ojai Valley. Each of these areas is separated by rugged terrain, which limits the number of connecting roadways and focuses travel for all modes along a few key corridors which fall within the unincorporated county.

Figure 1-2: [Opposite Page]
Vicinity Map

VENTURA COUNTY'S ACTIVE TRANSPORTATION NETWORK



Ventura County has approximately 463 miles of designated bikeways consisting of paved shared-use paths, on-street bike lanes, and bike routes. Table 1-1 provides a summary of the existing facility types, shown on Figure 1-3.

Seven of the 10 incorporated cities have bicycle master plans (BMPs) which guide future planning for bike infrastructure and programmatic improvements. In 2007, VCTC developed a Ventura Countywide Bicycle Master Plan that compiled existing bike plans from each jurisdiction at that time. A table with a summary of each plans' goals can be found in Appendix A.

EXISTING SIGN ASSESSMENT

An audit of existing wayfinding facilities was conducted by both driving and bicycling along Ventura County's network of on- and off-street bike facilities to document existing wayfinding infrastructure and identify opportunities.

Table 1-1: Existing Off-Street Trails

Active Transportation Facility	Miles	Examples
OFF-STREET		
Class I Shared-use Path: Paved shared-use path separated from a roadway.	72	 <p>Santa Paula Branch Line Trail in the City of Santa Paula.</p>  <p>Coast Route just outside of the City of Ventura.</p>

EXISTING BIKE PLANS IN VENTURA COUNTY

City of Ventura Bicycle Master Plan, May 2011

City of Oxnard Bicycle & Pedestrian Facilities Master Plan, February 2011

City of Thousand Oaks Bicycle Facilities Master Plan, November 2010

Simi Valley Bicycle Master Plan, December 2008

VCTC's Ventura Countywide Bicycle Master Plan, October 2007*

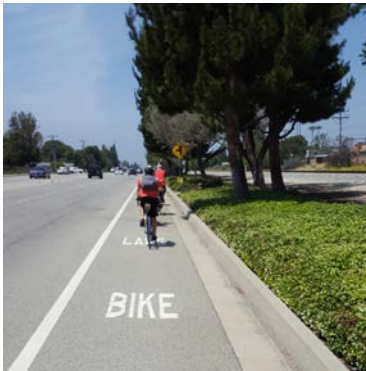






**not a County-adopted plan*

City of Fillmore Bicycle Transportation Plan, February 2005

City of Camarillo Bikeway Master Plan, November 2003

City of Ojai Bicycle Master Plan, February 1999

Table 1-2: Existing On-Street Bikeways

Active Transportation Facility	Miles	Examples	
ON-STREET			
Class II Bike Lanes: A striped and stenciled lane for one-way travel on streets or highways.	322	 <p>Class II Bike lane in Simi Valley.</p>	 <p>Class II Bike lane in the City of Ventura.</p>
Class III Bike Routes: Provides for shared use with motor vehicle traffic and is identified only by signing (and potentially shared lane marking pavement stencils).	69	 <p>Class III Bike Route on San Nicholas Street.</p>	 <p>Class III Bike Route Sign in Simi Valley.</p>
Class IV Cycle Tracks: A separated bike facility for one or two-way travel on streets or highways.	0	 <p>Class IV Cycle Track in Downtown Los Angeles.</p>	
Paved Shoulder : Wide paved shoulder used as a de facto bike route but is not designated as an bicycle facility.		 <p>Paved Shoulder on Telegraph Road.</p>	 <p>Paved Shoulder on Victoria Avenue.</p>

ON-STREET SIGNS

The majority of bicycle guide signs throughout Ventura County are standard 'Bike Route' signs as found in the California Manual on Uniform Traffic Control Devices (CA MUTCD). These signs do not inform the rider of his/her geographic location and are often inconsistently placed along routes. Bike route signs are not used comprehensively throughout the countywide bikeway network and do not provide directional guidance.

The California Department of Transportation (CalTrans) has marked the Pacific Coast Bike Route with a Bike Route sign (D11-1) and route name plaque (see image to the right), but no other on-street bike routes in Ventura County are identified by name on existing signage.



Regulatory bike route sign.

CLASS I TRAILHEAD SIGNS

There is no uniformity in existing signage at trailheads - existing signage and trail maps take a variety of forms. For example, the Ojai Valley Trail provides a map of nearby parks, and some roads, but does not include other nearby bikeways. The Branch Line Trail in Santa Paula has a map indicating many local destinations and a detailed road map with bikeways.



Coast Route bicycle guide sign through Ventura County.

CROSS-COUNTY SIGNAGE

Neighboring Los Angeles County has limited bicycle wayfinding signage. Rather than a county-wide system, LA County's wayfinding signs are primarily put in place by local jurisdictions, and are mostly standard CA MUTCD signs. Santa Barbara County has a bicycle wayfinding system based on named routes. The custom signs do not entirely follow CA MUTCD requirements. See page 27 for a case study review of South Santa Barbara County bicycle wayfinding signs.



Ojai Valley Trail Map.

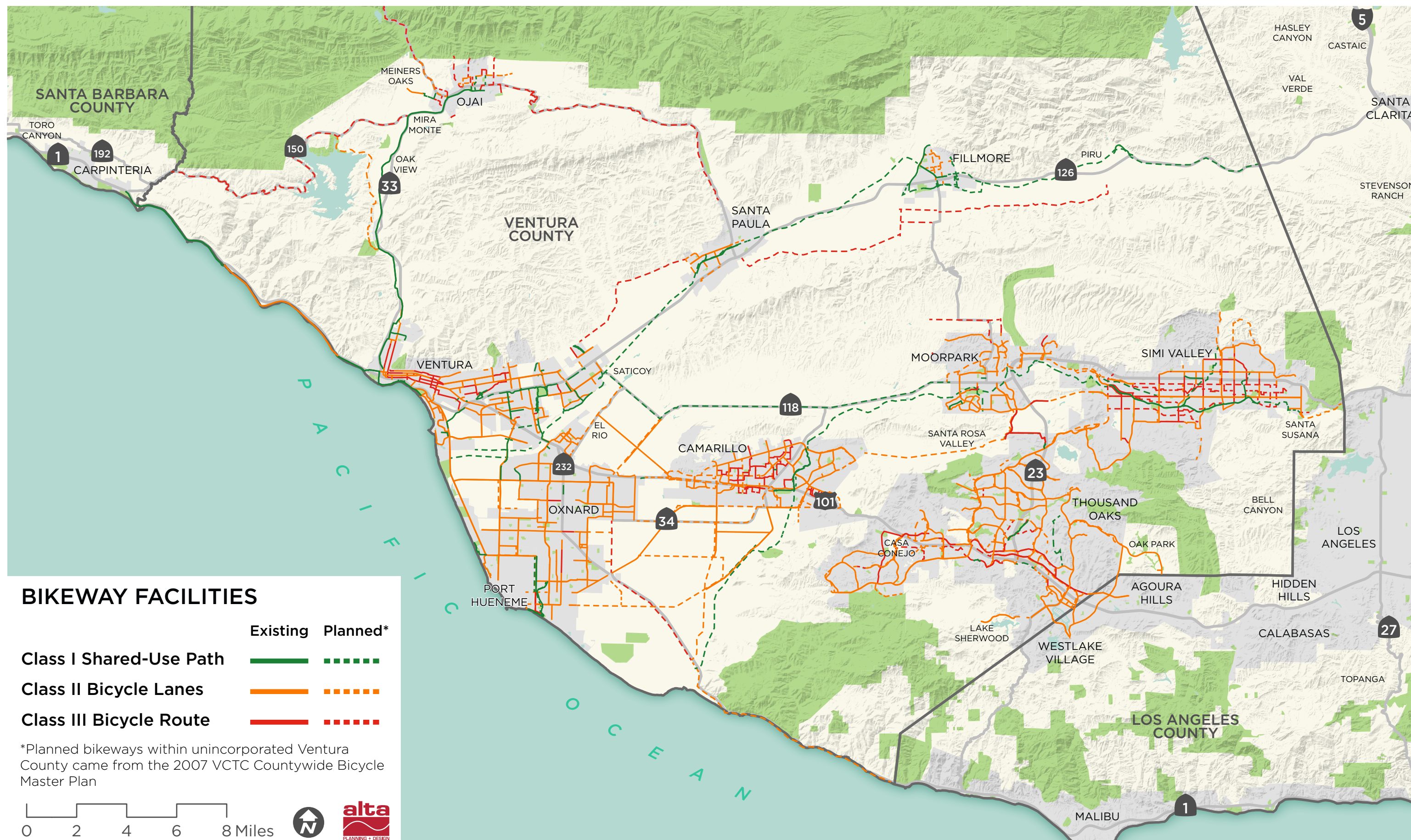


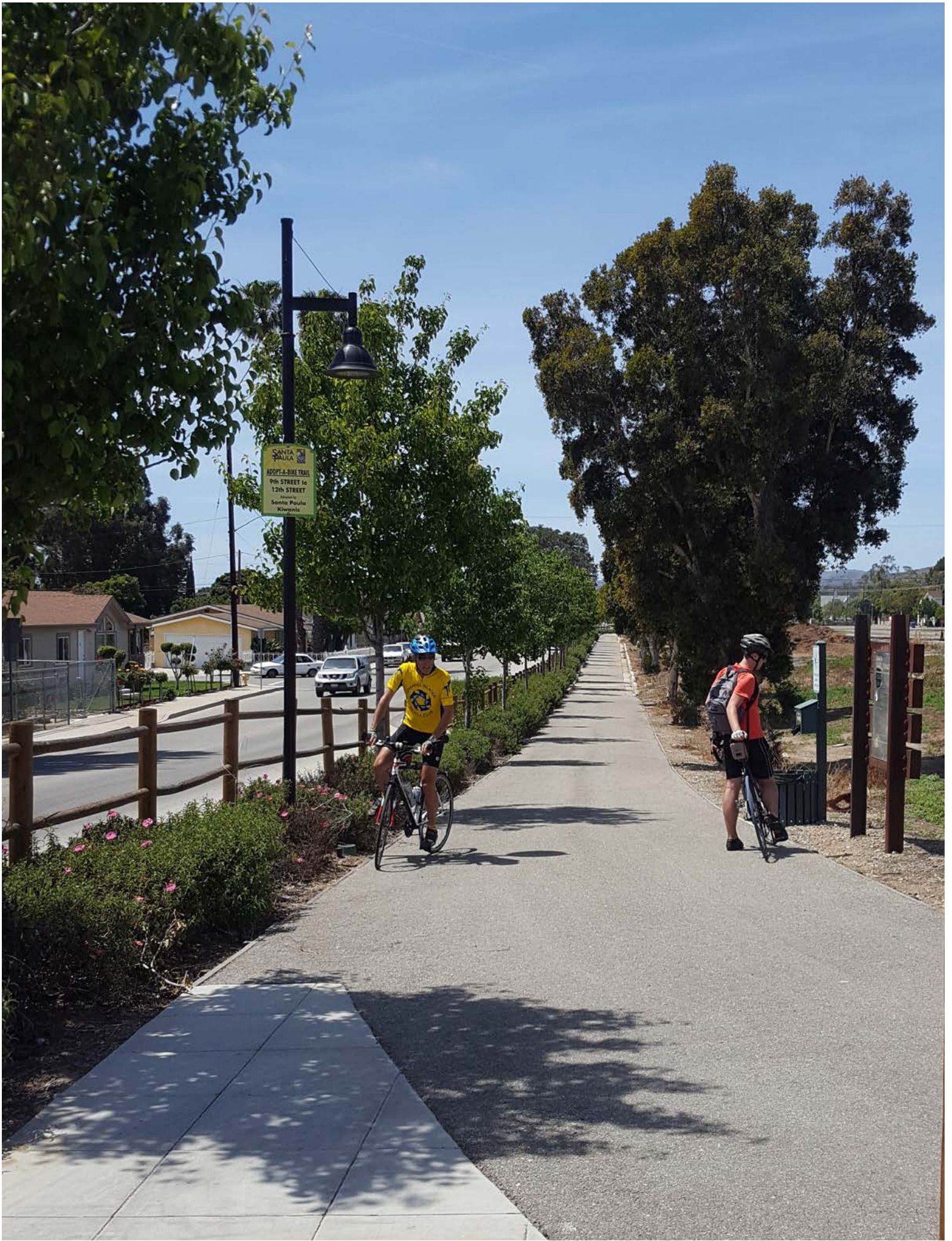
Figure 1-3: Existing and Proposed Bicycle Facilities

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OPPORTUNITIES

There are numerous opportunities throughout Ventura County to improve bicycle wayfinding signage for both recreation, sport, and commuting trips. The following list highlights key observations and opportunities to implement a more comprehensive countywide wayfinding plan.

LACK OF WAYFINDING	OPPORTUNITY
<p>Existing bikeways do not allow a user to easily orient themselves or allow navigation through the County.</p>	<ul style="list-style-type: none"> • Provide signage that directs people riding bikes to regional destinations to enhance navigation to enable residents and visitors to discover new destinations. • Establish guidelines for consistent placement and a unified sign design to effectively guide people on bike along routes and inform them of nearby connections to other routes.
BARRIERS AND GAPS	OPPORTUNITY
<p>Physical barriers (e.g. highways, topography) and gaps in the bikeway network presents challenges to navigation, especially for people riding bikes.</p>	<ul style="list-style-type: none"> • Establish clear, consistent wayfinding to allow riders to easily navigate around barriers and gaps in the bikeway network. • Identify key gaps in the bikeway network and improve connectivity.
INTEGRATION	OPPORTUNITY
<p>There is a lack of design consistency in signage across jurisdictional boundaries.</p>	<ul style="list-style-type: none"> • Establish a unified brand to provide a more seamless experience throughout the county. Wayfinding designs can incorporate local branding elements to inform bicyclists of their location within the county. • Develop a local brand identity for Ventura County that represents elements to the Ventura County's unique attributes and improves the user experience of the network.
CLARITY	OPPORTUNITY
<p>Unnecessary and confusing signage can make it difficult to identify and interpret wayfinding signage.</p>	<ul style="list-style-type: none"> • Reduce unnecessary and confusing signage to enable people riding bikes to easily identify and interpret wayfinding signs and make decisions while in motion.



1.3 WAYFINDING PRINCIPLES

KEY PRINCIPLES

GOALS MET

- Sign Design
- 7 Sign Design Guidelines
 - 8 Route Visibility
 - 9 Local Economy
 - 10 Technology

The legibility of a place describes how easy it is to understand. Places are more legible when they are arranged so that people can intuitively determine the location of destinations, identify routes, and recognize areas of different character. Wayfinding helps to make places more legible by better enabling individuals to:

- easily and successfully find their way to their destination,
- understand where they are with respect to other key locations,
- orient themselves in an appropriate direction with little misunderstanding or stress, and
- discover new places and services.

In order to help ensure that wayfinding systems are the most effective, the following guiding principles were developed for bicycle wayfinding plans. The principles are based on best practices from around North America.



CONNECT PLACES

Effective wayfinding information should enable both locals and visitors to travel between destinations as well as to discover new destinations and services accessible by bike. Wayfinding should help improve local economic well-being by encouraging locals and visitors to utilize services within Ventura County. Wayfinding should enhance connections within the county and to neighboring communities and expand the bicycle network. Destinations within the county should be identified as well as making connections to priority destinations in adjacent Santa Barbara and Los Angeles Counties. Wayfinding navigation should be seamless on a regional level.



PROMOTE ACTIVE TRAVEL

Wayfinding should encourage increased biking by revealing a clear and attractive system that is easy to understand and navigate. The presence of wayfinding signs should validate bicycling as a transportation option as well as reduce fear amongst those potentially interested in riding a bike. Wayfinding should expand the awareness and use of bike facilities.



MAINTAIN MOTION

Wayfinding information should be presented in a way that is easy to understand. Riding a bike requires physical effort and frequent stopping and starting to check directions may lead to frustration. Wayfinding information that is quickly understood contributes to an enjoyable experience. Consistent, clear, and visible wayfinding elements allow bike riders to navigate while maintaining movement.



BE PREDICTABLE

Wayfinding should be predictable and consistent. When information is predictable, it can be quickly understood and recognized. Predictability should relate to all aspects of wayfinding placement and design (i.e. sign materials, dimensions, colors, forms, and placement). Predictability also means that new situations are quickly understood. Once users trust that they will encounter consistent and predictable information, their level of comfort is raised and new journeys become easier to attempt and complete. Similarly, maps should employ consistent symbology, fonts, colors, and style. The system should work within local, state, and federal guidelines for a variety of reasons - including the ability to be funded through state and federal sources.



KEEP INFORMATION SIMPLE

Information should be presented in as clear and logical form as possible. Wayfinding signage should be both universal and usable for the widest possible demographic and with special consideration for those without high educational attainment, English language proficiency, or spatial reasoning skills. It is important to provide information in manageable amounts. Too much information can be difficult to understand; too little and decision-making becomes difficult. Information should be provided in advance of where major changes in direction are required, repeated as necessary, and confirmed when the maneuver is complete.

These wayfinding principles combine to create a wayfinding system plan that is both legible and easy to navigate. The principles are applied in the Ventura County Wayfinding Master Plan to guide design, placement, and destination logic. By following a clear set of principles, an organized approach to wayfinding design will be achieved.

WAYFINDING NAVIGATIONAL ELEMENTS

The fundamental family of signs which provide bike riders with navigational information consists of decision, confirmation, and turn signs. The function, content, and placement of each are described below.

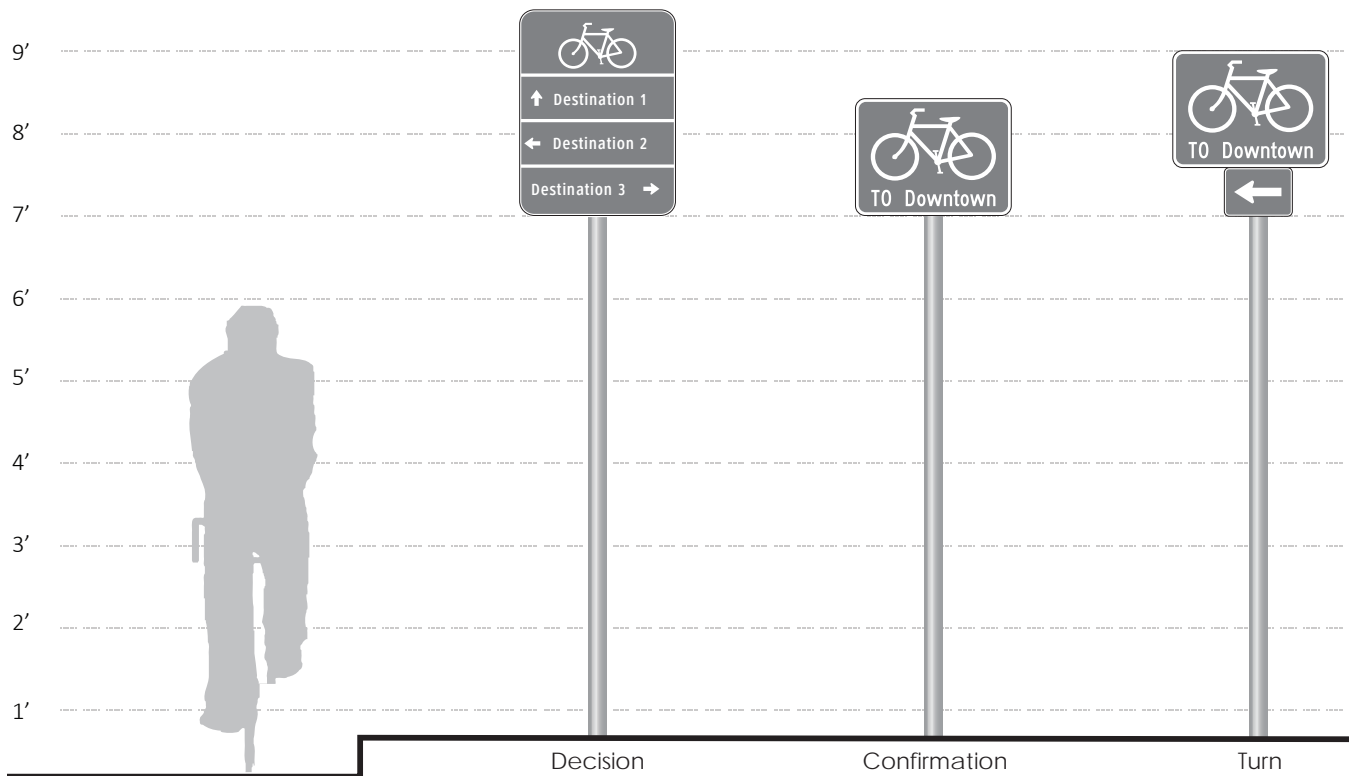


Figure 1-4: Fundamental Family of Navigational Elements

DECISION SIGN

Clarify route options where multiple routes exist. Signs may include a system landmark, route name, up to three destinations, distance in miles and/or time (based on 10 mph or 6 minute per mile average travel speed). In mountainous areas, this signs could indicate grade changes.

CONFIRMATION SIGN

Placed after a turn movement or intersection to reassure bike riders that they are on the correct route. System brand mark and route or pathway name may be included.

TURN SIGN

Used to clarify a change in route direction where only one option exists. Turn signs may include a landmark, route name, and directional arrow. MUTCD sign series D1-1, M5 and M6 may be used.

1.4 WAYFINDING SIGN STANDARDS + CASE STUDIES

GOALS MET

Sign Design

7 Sign Design Guidelines

A variety of standards and guidelines influence both the sign designs and placement of wayfinding elements in Ventura County. This section will address national standards for wayfinding signage.

BICYCLE GUIDE SIGNS

NATIONAL & STATE GUIDANCE

The Manual on Uniform Traffic Control Devices (MUTCD) is a document issued by the Federal Highway Administration of United States Department of Transportation (FHWA). The MUTCD specifies the standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel. The MUTCD was established in order to achieve uniformity and consistency in traffic control devices (wayfinding signage is considered a traffic control device) so that information would be readily recognized and understood by travelers. Both on-street and off-street bicycle facilities are required to follow the standards within the MUTCD. The State of California has adopted specific state standards for all traffic control devices called the CA MUTCD, which includes the FHWA MUTCD standards, but is amended for the state, thus superseding the MUTCD. Table 1-11-5 below shows examples.

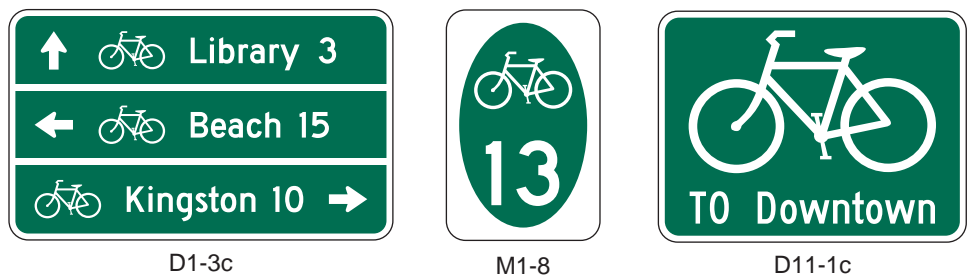


Figure 1-5: Standard CA MUTCD Compliant Destination, Bicycle Route and Confirmation Signage.

Per the CA MUTCD, devices should be designed so that:

- Size, shape, color, composition, lighting or retro-reflection, and contrast are combined to draw attention to the devices; simplicity of message combine to produce a clear meaning.
- Legibility and size combine with placement to permit adequate time for response.
- Uniformity, size, legibility, and reasonableness of the message combine to command respect.

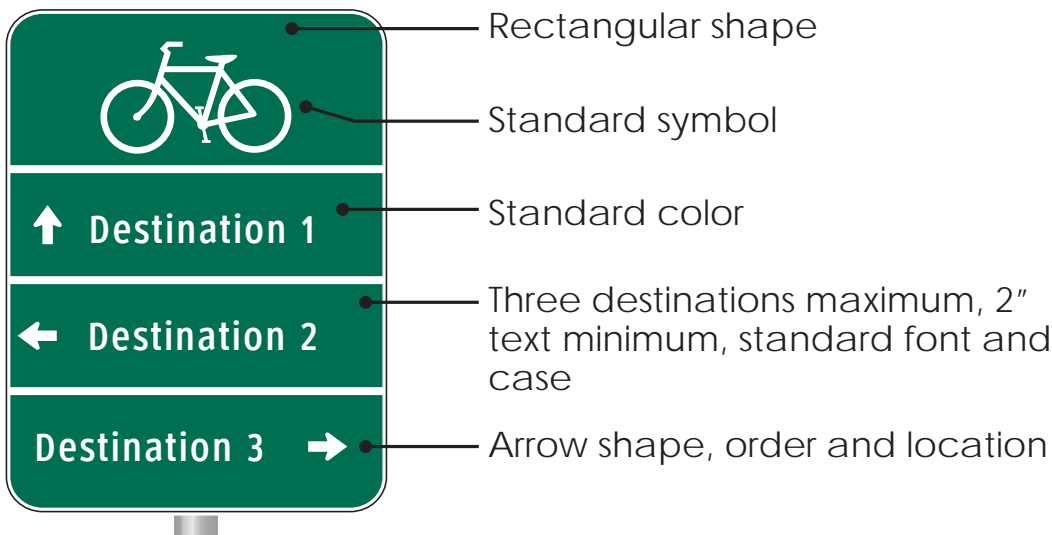


Figure 1-6: Standard CA MUTCD Compliant Directional or Decision Sign

The CA MUTCD also recommends the arrangement and amount of text, or legend, on each section of each sign:

- Guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions.
- A straight ahead location should always be placed in the top slot followed by the destination to the left and then the right. If two destinations occur in the same direction, the closer destination should be listed first, followed by the farther destination.
- Arrows shall be depicted as shown above for glance recognition, meaning straight and left arrows are to be located to the left of the destination name, while an arrow indicating a destination to the right shall be placed to the right of the destination name. The approved arrow style must be used.

- 19 characters (including spaces) in titlecase should be considered a maximum length for a single destination title. 10-14 characters (including spaces) in titlecase should be considered an ideal maximum length for a single destination title.
- In situations where two destinations of equal significance and distance may be properly designated and the two destinations cannot appear on the same sign, the two names may be alternated on successive signs.
- Approved fonts include the Federal Series (series B, C, or D), also known as Highway Gothic. Clearview is also currently approved for use, however the FHWA is considering rescinding the use of Clearview.
- A contrast level of 70% needs to be achieved between foreground (text and graphics) and background.

CASE STUDY:

OAKLAND SIGNAGE SYSTEM

The City of Oakland's approach follows the look of the standard CA MUTCD bike guide signs but includes additional details tailored for bicyclists to provide a more robust wayfinding system including custom logos. This sign system uses three types of signs. Decision signs provide directions to destinations, confirmation signs provide distances to destinations, and turn signs provide direction when a bikeway turns onto another street.

KEY FEATURES OF OAKLAND'S SIGNAGE INCLUDE:

- Based upon CA MUTCD standards with the addition of City Logo
- A hierarchal system with three types of signs, decision, confirmation and turn signs
- Distance information can be included on confirmation signs
- Bottom plates can be replaced and updated separately from the D11-1 b



COMMUNITY WAYFINDING STANDARDS

NATIONAL & STATE GUIDANCE

Wayfinding signs, which allow for an expression of community identity and pride, reflect local values and character, and may provide more information than signs which strictly follow the basic guidance of the MUTCD and CA MUTCD. Section 2D.50 of the MUTCD describes community wayfinding signs as follows:

1. Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other destinations within a city or a local urbanized or downtown area.
2. Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.

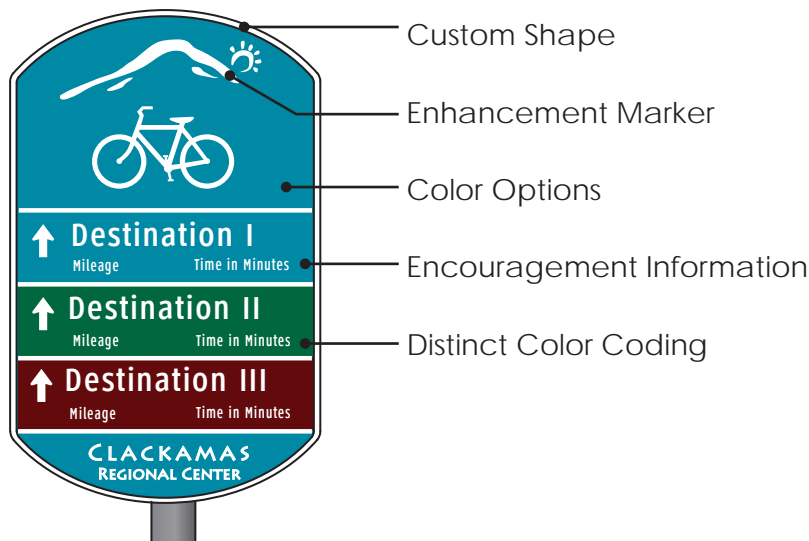


Figure 1-7: Flexible Directional or Decision Sign Incorporating Community Wayfinding Standards

The design of the directional arrows shown in Figure 1-3 above provide clarity and are approved by the FHWA. The standard arrow has been deemed by engineering study to have superior legibility. Enhancement markers may occupy up to 20% of the sign face on the top or side of the sign.

CASE STUDY:

SANTA BARBARA BICYCLE SIGN SYSTEM

In 1996, a Regional Bikeway Signage Program for Southern Santa Barbara County was created. In 1998, 500 bike route signs were installed along the regional South Coast Bikeways. The sign system is based on guiding bike riders along named primary routes and supplemental north/south connectors. A customized sign shape with a simple logo of a bike rider centered in a yellow sun is effective at branding the primary bike routes. Supplemental directional signs provide space directional arrows and mileage to local destinations.

The sign design would be classified in under CA MUTCD Section 2D.50 Community Wayfinding. However guidelines could be improved to meet CA MUTCD standards.

KEY FEATURES OF SANTA BARBARA'S SIGNAGE INCLUDE:

- Focus on route branding and named routes
- Custom shape
- Distance information is included on decision signs



Type 2



Type 3



Type 4



Type 5

COLORS

Per the community wayfinding standards, color coding may be used on wayfinding guide signs to help users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area. Community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system.

The CA MUTCD prohibits the use of some colors for wayfinding signs, these colors are known as “assigned colors.” The “assigned colors” consist of the standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink. They cannot be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

The color wheel diagram below (Figure 1-51-8) depicts colors which are already assigned specific meanings and thus shall not be used on community wayfinding signs. Green is the standard color for guide signs. Blue and brown are also used for traveler information including destination and street name signs. The remaining colors are eligible for use on community wayfinding signs as long as they are sufficiently different from the “assigned colors.”

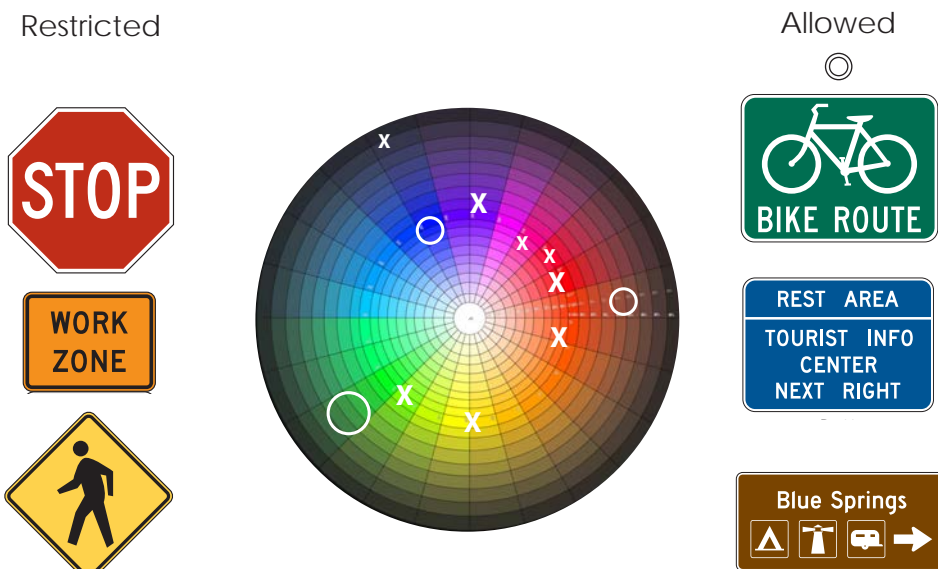


Figure 1-8: Each of the colors depicted with an “x” are not allowed for use on community wayfinding signs. Green, blue and brown are approved for use on traveler information signs and have been accepted by some DOTs for wayfinding signs. The remaining colors not having restricted uses are appropriate for wayfinding signs per the community wayfinding standards.

GOALS MET

Sign Design

- 7 Sign Design Guidelines
- 8 Route Visibility
- 9 Local Economy
- 10 Technology

ENHANCED NAVIGATIONAL ELEMENTS

SUPPLEMENTAL SIGN INFORMATION

Distance and Time

The addition of measuring distance to signs in terms of miles and minutes has been employed by a number of cities in the United States. Adding distance in familiar units has been found to be an effective tool for encouraging biking. To some bike riders, 2 miles may sound daunting while 12 minutes sounds approachable, and, to other bike riders, the same is true vice versa. A pace of 10 miles per hour or 6 minutes per mile is the typical pace used on bicycle wayfinding signs. This is lower than typical bike design speed in order to best reflect and encourage the riding speed of the casual rider.

CASE STUDY:

PORTLAND SIGNAGE SYSTEM

Based upon the Oregon Department of Transportation (ODOT) bike guide sign, this system provides riding time in addition to destination and directional information. Although this is a custom sign design, it uses the standard bicycle symbol, color and width from CA MUTCD D11-1. Each sign holds one to three destinations. If fewer than three destinations are displayed, the additional space may be used to accommodate longer destination names by stacking labels on two lines.

KEY FEATURES OF PORTLAND'S SIGNAGE INCLUDE:

- Provides distance and riding time to destinations - including riding time is a great encouragement tool
- One sign type allows for easy installation



STREET NAME SIGN BLADES AND SIGN TOPPERS

Municipalities across the nation have enhanced street name sign blades to provide additional recognition of bikeways. Enhancements include supplemental signs and sign toppers added to existing CA MUTCD standard street sign blades and graphic embellishments integrated into new street name sign blades.

Good wayfinding practice also includes the use of street name sign blades on off-street pathways in reference to the roadway network. Numerous cities follow the practice of indicating cross streets at bridges, underpasses, and at-grade mid-block roadway crossings to inform pathway users of their location. Green, blue, and brown are all accepted colors for street name sign blades according to the CA MUTCD, as long as colors are used consistently.

Sign toppers are an alternative method of branding a wayfinding system while still maintaining CA MUTCD signage standards for destinations and confirmation signage. This allows for jurisdictional branding or creation of a multi-jurisdictional route identification system.

CASE STUDY:

MONTEREY COUNTY SIGNAGE SYSTEM

The Transit Agency of Monterey County led the planning and design of a countywide bicycle and pedestrian sign program. The final design allows for flexibility for each jurisdiction to choose the sign plaques suitable for their area.

KEY FEATURES OF MONTEREY COUNTY SIGNAGE INCLUDE:

- Flexible, interchangeable sign plaques within a united sign family
- Sign post topper with custom Monterey County Brand Mark
- Distance and time sign plaque
- Local jurisdiction branding option



SUPPLEMENTAL WAYFINDING ELEMENTS

PAVEMENT MARKINGS

Directional pavement markings indicate confirmation of bike rider presence on a designated route and where riders should turn. Especially in urban settings, pavement markings can often be more visible and can help supplement or reinforce signage.

ON-STREET MARKINGS

Figure 1-91-9 below shows different types of pavement markings used for wayfinding purposes. While the shared lane marking is currently the only FHWA approved pavement marking shown, cities have experimented with the other options.



Figure 1-9: Types of Wayfinding Pavement Markings

In Berkeley, CA and Minneapolis, MN, some bike boulevards have large “Bicycle Boulevard” stencils that take up nearly the entire width of one travel lane.

In Lakewood, CO along the West Rail/D-10 route, the chevrons on the top of the CA MUTCD-standard shared lane marking (sharrow) indicate the direction of intended travel (second photo from left in Figure 1-9). Although this practice is not FHWA approved or eligible for federal funding, many local transportation engineers are confident that the benefits of the turned chevrons outweigh the risks. Portland, OR installs standard shared lane markings with federal funds, and then makes modifications later with local funds to add the directional wayfinding component.

MAP KIOSKS

Kiosks with local or regional orientation maps can provide helpful navigational information, especially where bike riders may be stopping long enough to digest more information (e.g. at transit stations or stops, busy intersections, trail heads). The use of icons and high contrasting colors is a good practice which makes maps understandable to a wide audience.

Adding circles that indicate walk and bike times provides encouragement to explore urban areas. Additionally, orienting signs with respect to the audience's view (or, a heads up orientation) is considered by wayfinding practitioners to be more intuitive than maps where north is at the top. High-contrast graphics and the use of color coded areas or districts help make maps comprehensible to a wide audience.

Kiosks with maps are also a useful resource for trail users. Again the use of high contrast, simple graphics and icons enhances legibility for a broad spectrum of users. Kiosks should contain information on trail or path rules and regulations including allowed uses. Emergency contact information is also typically present. Interpretive or educational information may also be integrated. Per the ADA standards, trailhead facilities built with federal funds shall include the following information:

1. length of the trail or trail segment,
2. surface type,
3. typical and minimum tread width,
4. typical and maximum running slope, and
5. typical and maximum cross slope.



Orientation map with color coded districts (top) and map integrated into a covered bicycle parking facility (bottom) in Portland Oregon.



Research Triangle Park, North Carolina off-street marking.

OFF-STREET MARKERS

Off-street shared use path markings can give an identity to the route and include directional and trip information, including distances and/or times. While such markings are not included as traffic control devices within the CA MUTCD, numerous agencies around the nation follow such practices.

Mile markers aid pathway users with measuring distance traveled while providing pathway managers and emergency response personnel points of reference to identify field issues such as maintenance needs or locations of emergency events.

Mile markers should be placed every $\frac{1}{4}$ to $\frac{1}{2}$ mile along a pathway network. Point zero should begin at the southern and westernmost terminus points of a pathway. Mile numbering is often reset at zero as a pathway crosses a jurisdictional boundary. Although it is ideal to place mile markers on the right hand side of the path facing bicycle traffic, they may also be installed on one side of a pathway, on a single post back-to-back.

CASE STUDY:

RAZORBACK GREENWAY SIGNAGE SYSTEM

The Razorback Greenway sign family creates a custom and cohesive identity for a 32-mile system. The colors, fonts, symbology, and design of each sign have been crafted to improve navigation, encourage use, and provide an identity for the trail. Sign types include regulatory information, regional and cultural details, identification markers, walk and bike timing, and geographical references. Each component works together to complete a system of comfortable spaces for multiple types of people who walk and bike.



FLEXIBILITY IN STANDARDS

Both the FHWA and USDOT have made statements in recent years encouraging a flexible approach in support of facilities for biking and walking:

“...DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics...” (USDOT, 2010).

“Federal Highway Administration’s (FHWA) support for taking a flexible approach to bicycle and pedestrian facility design” (FHWA, 2013).

While the CA MUTCD provides standards and guidelines for the design, size, and content of wayfinding signs, many jurisdictions have implemented unique signs to enhance visibility while reinforcing local identity. The CA MUTCD Spectrum (Figure 1-10) on the next page shows a range of wayfinding elements that have been implemented by municipalities around the nation. The range extends from rigid CA MUTCD on the left to the more flexible options on the right. Signs which adhere to the CA MUTCD basic minimum standards are readily understood by a wide audience, economical, and simple to fabricate and maintain. These signs also are clearly eligible to be implemented utilizing federal transportation funding sources. Signs that follow the community wayfinding standards may be more costly to design, fabricate, and maintain, but have the added benefits of reflecting local character and identity.



Figure 1-10: Spectrum of Flexibility in Wayfinding Signage Design

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SECTION 2:

ROUTE IDENTIFICATION + PRIORITIZATION



2.1 REGIONAL ROUTE SELECTION

WHAT ARE REGIONAL BICYCLE WAYFINDING ROUTES?

As part of the Ventura County Bicycle Wayfinding Master Plan, it was important to identify key regional bicycle routes and create a methodology to help local jurisdictions, in partnership with VCTC, prioritize routes on which to concentrate wayfinding efforts. Section 2 of this Plan describes the public outreach and planning efforts, summarizes the methodology of the planning process, and identifies key opportunities and gaps in the network.

The outreach and planning processes identified 17 regional routes throughout Ventura County totaling 413 miles of roadway. These routes, which include segments with gaps in bike infrastructure, were prioritized using a methodology that took numerous factors into account. Figure 2-1 provides an overview of the multi-step process described in this chapter.

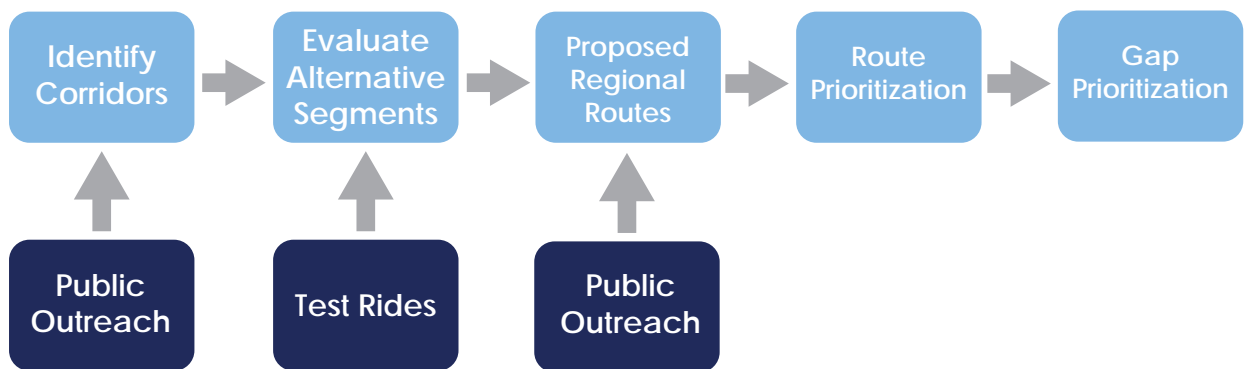


Figure 2-1: Route Identification and Prioritization Process

PUBLIC OUTREACH SUMMARY

The first step in identifying key regional bicycle routes was to engage the Ventura County community through an online interactive WikiMap, an online survey, and community events.

GOALS MET

ROUTE PLANNING

4 Inclusive Bikeways

6 Community Engagement

ONLINE INTERACTIVE WIKIMAP & SURVEY

From December 9, 2015 to January 29, 2016, VCTC hosted an online interactive WikiMap to gather input on countywide wayfinding corridors. Respondents were asked to suggest bike routes (existing or proposed) that span the county, were continuous, could provide a comfortable experience for people riding bikes, and could benefit both commuter and recreational and sport cycling.

278 users participated in this mapping exercise, resulting in 686 comments. Respondents suggested new routes, infrastructure improvements, infrastructure maintenance needs, and recommended destinations. Respondents also identified gaps and barriers to biking throughout the county.

Share your knowledge and preferences for biking in Ventura County. You can interact with the map in a number of ways: **1.)** Draw a new route **2.)** Add destinations you would like to ride to or add comments **3.)** Comment on other routes and destinations that have been added to the map **4.)** Upload GPS data of your recommended bicycling routes.

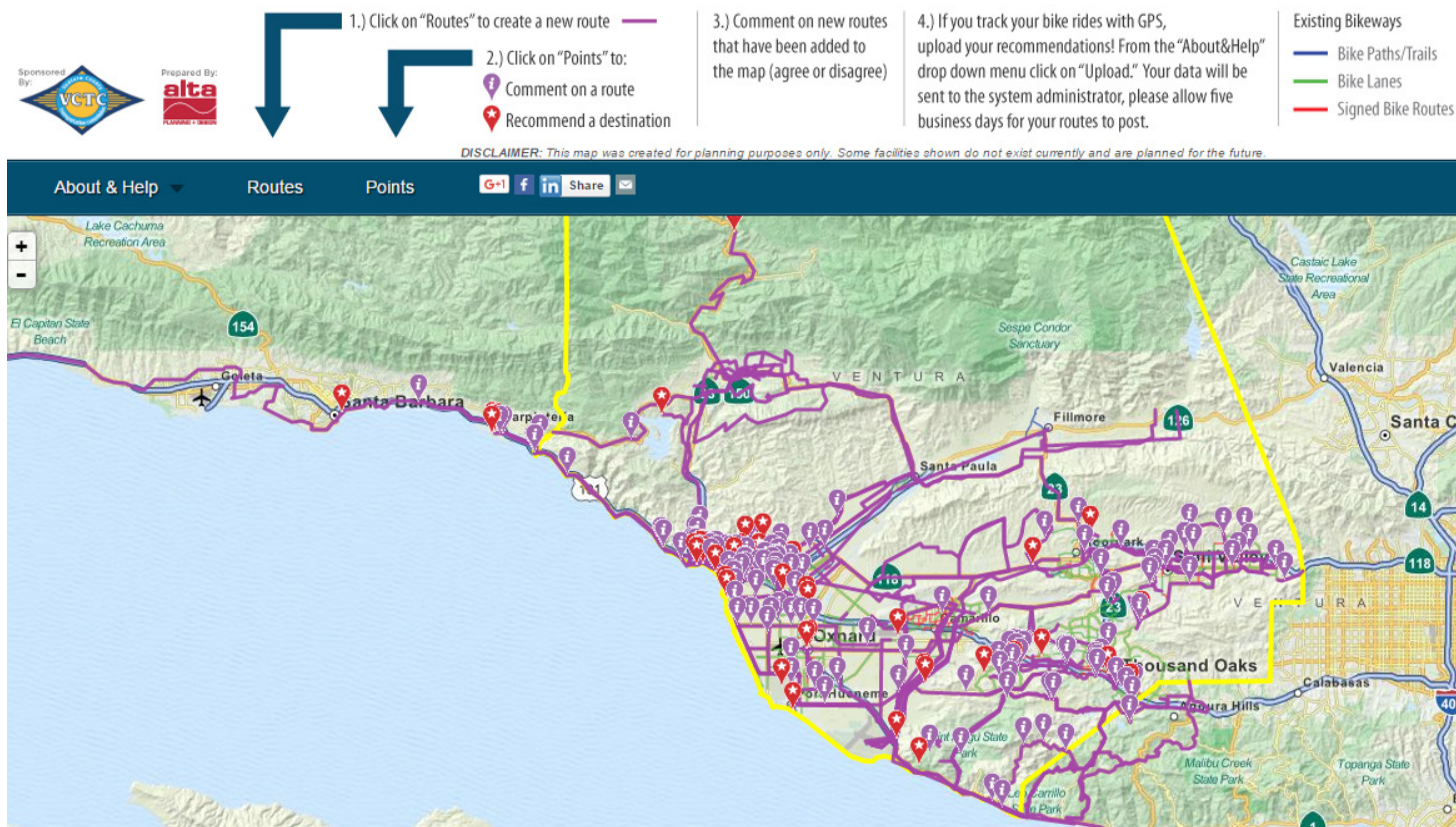


Figure 2-2: WikiMap Responses

In order to participate, respondents were required to answer three questions related to their biking habits to help identify the types of riders who provided input:

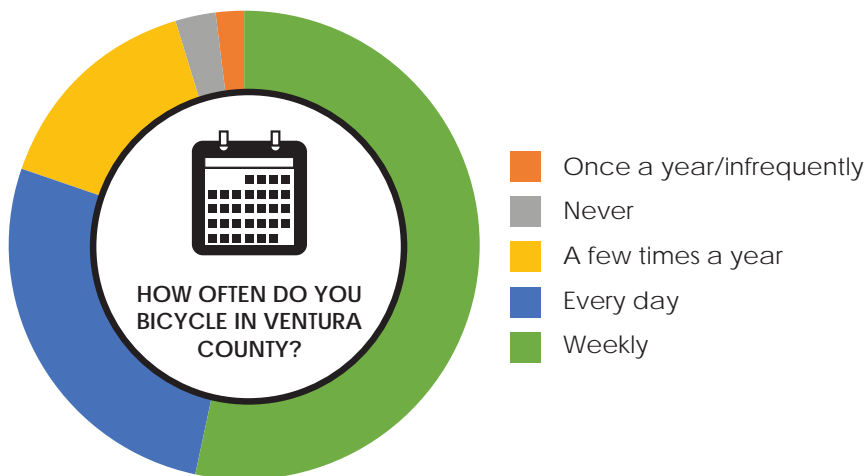
- How often do you ride a bike in Ventura County?
- What are the main reasons you ride a bike?
- How confident of a bike rider are you?

The results of the survey (Figure 2-3) showed:

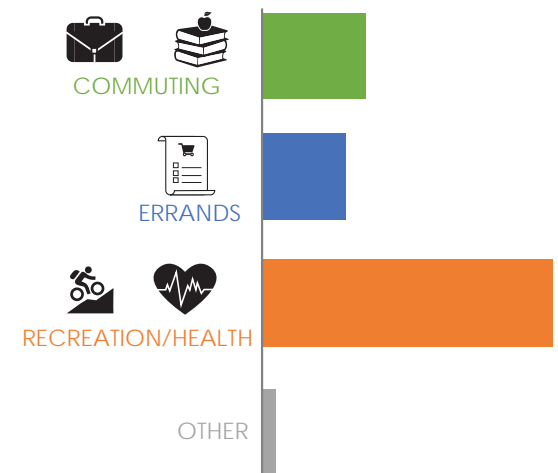
- Most respondents bike at least once a week in Ventura County, and many ride daily
- The vast majority of respondents bike for recreation and health
- Most respondents feel comfortable riding alongside vehicle traffic, but many would prefer to ride in bike lanes or off-street paths

The respondents skewed heavily as experienced recreational and sport riders, so results did not fully capture commuters and family rides. We acknowledged this skew and considered the bias while making decisions.

HOW OFTEN DO YOU BICYCLE?



WHAT IS THE MAIN REASON YOU BICYCLE?



HOW CONFIDENT OF A BICYCLIST ARE YOU?

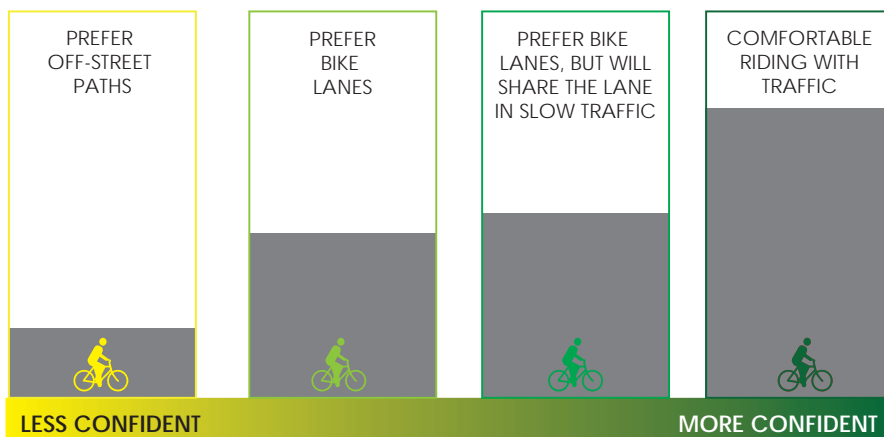


Figure 2-3: Survey Results

After completing the first three questions, users were invited to identify inter-city and cross-county bike routes using an online interactive mapping tool or uploading their previously ridden routes.

Almost half of the participants provided input on priority routes that they would like to see implemented in the county. The most popular new routes according to the users of the Bike WikiMap were the Coast Route, Potero Road to Thousand Oaks, and the Ojai Loop. Other popular routes identified were Santa Paula to the County Line, Ventura to Simi Valley, and Camarillo to Thousand Oaks.

Users could also provide written comments and recommendations. These comments were categorized into six classifications as shown below.

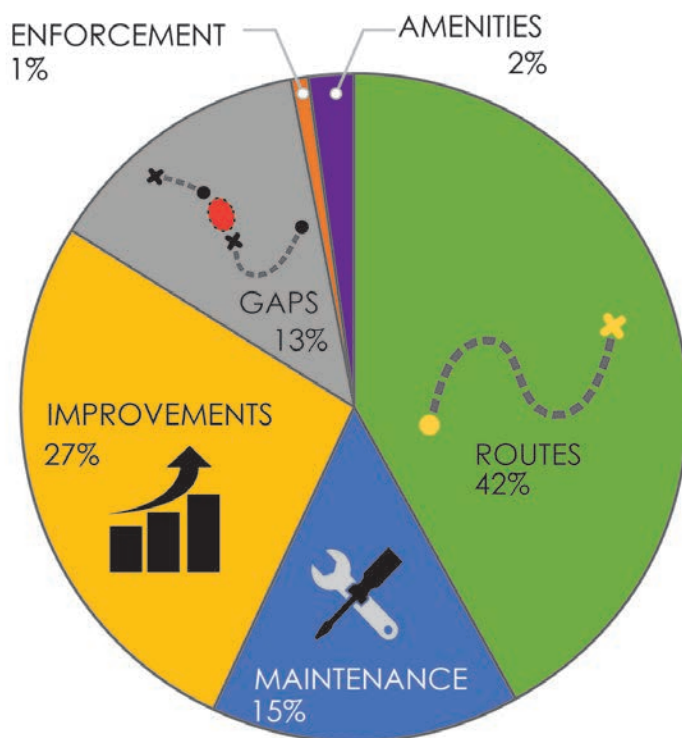


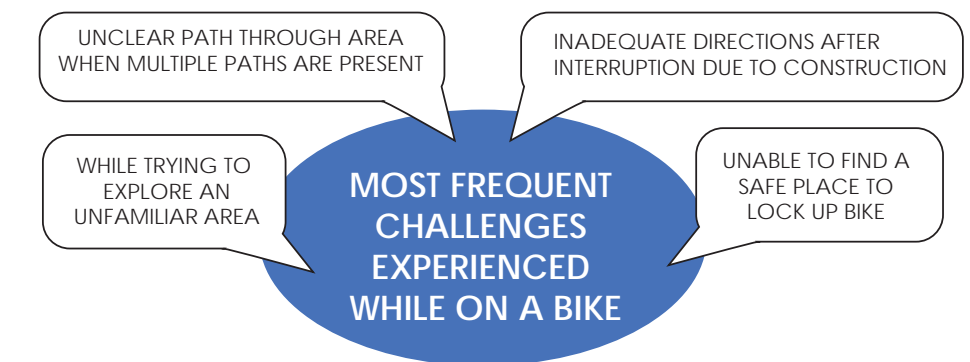
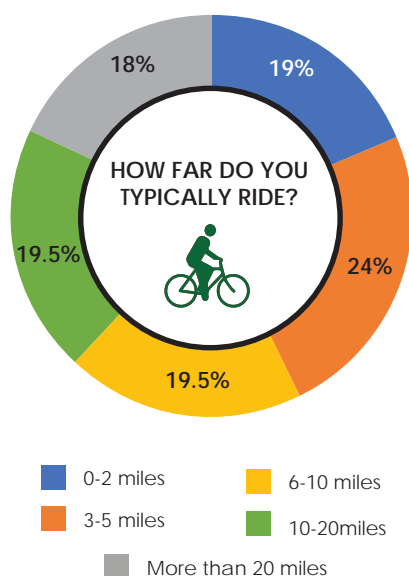
Figure 2-4: Classifications of User Comments

ONLINE SURVEY

In addition to the WikiMap, an online survey (through Survey Monkey) provided an opportunity for community members to provide input about the bikeway network, including specific challenges and opportunities. Of the 386 survey respondents, the majority of the people taking the survey were male (62%) and over the age of 46 (60%). Furthermore, the majority of the people responding take weekly rides for recreation but the second highest response was ride to work (20%). The distance people tend to ride was divided fairly evenly as shown in the infographic on the left.

The survey results showed a clear desire for bicycle wayfinding signage. According to the survey results, 69% of people surveyed responded that a network of wayfinding signs would encourage them to take more biking trips.

Figure 2-5: Sample of Survey Results



62%
of 386 respondents
**TRAVEL BY BIKE
JUST TO GO FOR
A RIDE**



69%
of 386 respondents
**RESPONDED "YES"
TO WHETHER A
NETWORK OF BIKE
WAYFINDING
WOULD ENCOURAGE
YOU TO TAKE MORE
TRIPS BY BIKE**

COMMUNITY EVENTS

The project team also conducted outreach at two community events in fall of 2016; the Thousand Oaks Street Fair and the Channel Islands Farmers' Market. A booth with boards provided information on the project and goals, showcased preliminary routes and sign concepts to gather public input to improve bicycling in Ventura County. Community members were invited to provide input on the preliminary regional wayfinding network and to vote on their favorite bicycle wayfinding sign option. In addition, people commented on popular existing bicycle routes, and provided feedback on their biking experiences and desired improvements to the regional bikeway network.

More information on these events can be found in Appendix B.



Community members providing input at the Thousand Oaks Street Fair.

CORRIDOR EVALUATION + ROUTE SELECTION

The corridors recommended by the public were compiled, analyzed, and surveyed both digitally and through on-site surveys.

REGIONAL ROUTES

Preference was given to regional routes that create connections *between* communities. This Plan is intended to be an overlay to local bikeway networks, which provide connections to local destinations *within* communities, such as schools. Both regional and local networks are important. Jurisdictions can help make connections between local rides and this Plan's regional routes by placing signage along regional routes, directing people on bikes to local bikeways and destinations.

PRELIMINARY CORRIDOR SELECTION

The results from the online community outreach were reviewed and used to form the basis of a preliminary framework of countywide and inter-city wayfinding corridors, as shown in Figure 2-6. The corridors represent the regional desire lines. At this stage of the planning analysis, the corridors were not necessarily assigned to specific roads. For corridors where multiple parallel segments could serve as the regional route, alternatives were identified for evaluation. An overview of the preliminary framework for selecting wayfinding corridors can be found in the callout box to the right.

GIS ANALYSIS

Based on input from the TTAC Wayfinding Subcommittee, the following criteria were used to further refine the corridors into regional routes. Information was spatially analyzed using GIS software to ensure accuracy and a GIS model was developed to calculate the criteria per segment. The criteria used included:

- Route Readiness
 - Route is comprised primarily of existing bike facilities
 - Segments currently lacking bike facilities are identified as planned routes in existing plans



PRELIMINARY WAYFINDING CORRIDOR SELECTION

- Corridor is continuous and makes inter-city and cross-county connections
- Corridor connects to population and employment centers
- Corridor is in close proximity to regional destinations
- Corridor was repeatedly identified through community input
- Corridor has a high amount of existing bicycling activity (per Strava data)
- Corridor is supported by local jurisdictions' existing and planned bike network

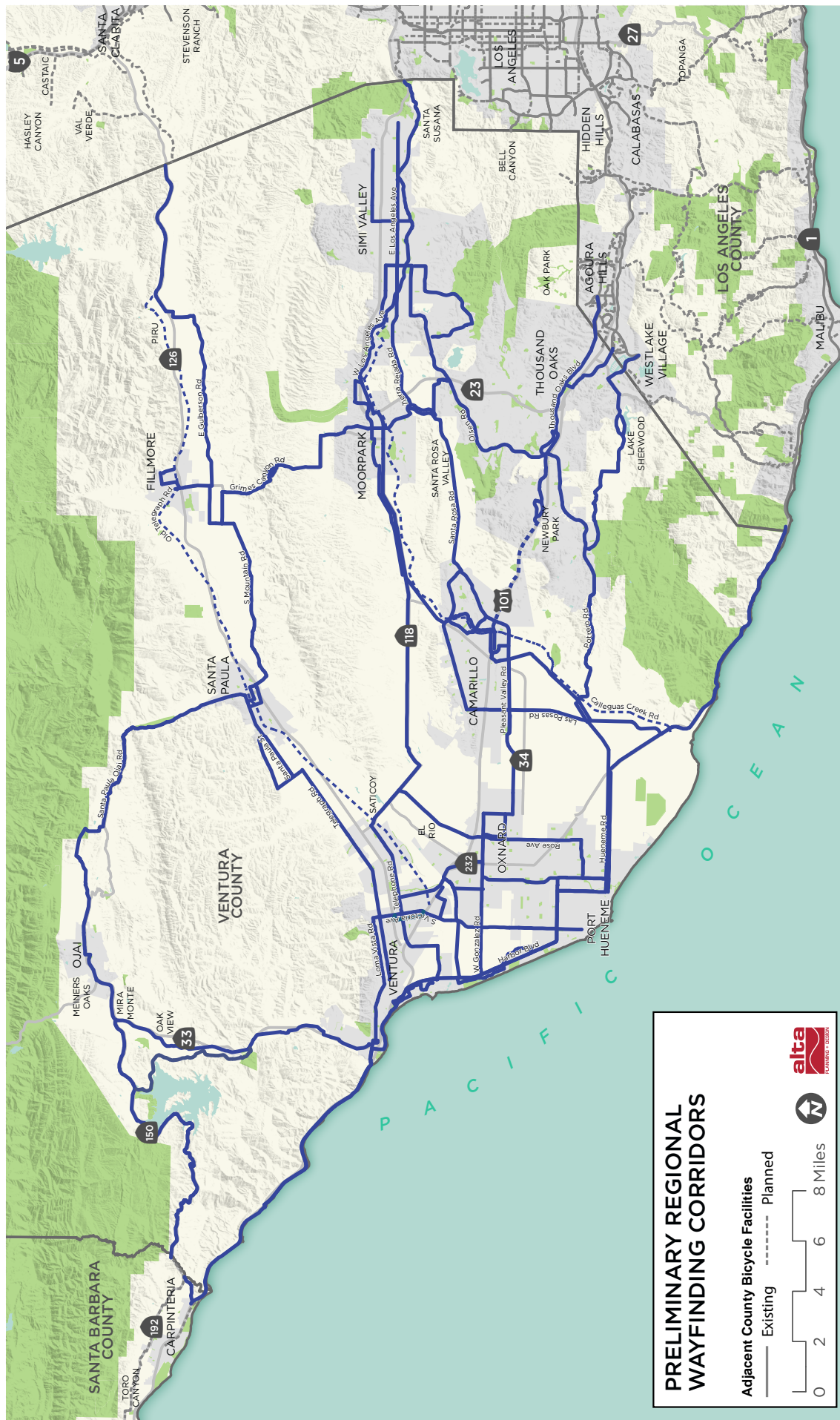


Figure 2-6: Preliminary Regional Wayfinding Corridors

- Demand
 - Route connects to high population areas with a large potential user base
 - Additional wayfinding would be valuable due to route complexity (the number of decision-points, intersections, and alternative options for routes)
 - Route is already a popular route (measure of existing biking activity from Strava Heat Map)
- Safety/Comfort/Skill Level
 - Existing/proposed bike facilities have a higher degree of separation from vehicular traffic (separated vs. shared)
 - Route includes areas with comfortable roadway speeds (less than 35 mph)
 - Route has a history of collisions
- Regional Connections
 - Route connects to existing bike facilities in adjacent counties and/or is adjacent to a high density of regional destinations
 - Public outreach has identified support for route

BIKE RIDES SUMMARY

GOAL 6



Participants ride along Oxnard Boulevard on the Ventura-Oxnard-Port Hueneme ride.

Following the initial selection of routes, which contained multiple alternatives, bike rides were conducted to verify the digital route analysis. In April and May of 2016, 29 people - including VCTC staff, Alta staff, bike tourist groups Canejo Valley Club and Channel Islands Club, and local community members - participated in rides throughout the county:

- Camarillo
- Simi Valley
- Santa Paula
- Ventura County Westside
- Ventura-Oxnard-Port Hueneme

Route maps were created for each ride, sometimes with multiple routes and with key destinations. Participants were encouraged to take notes and share their local knowledge to identify route alternatives, constraints, and potential wayfinding sign locations along the ride routes. Their local knowledge helped the project team identify potential connections between routes, and locations to avoid due to high levels of traffic, poor infrastructure, or personal safety concerns. Appendix B includes additional documentation and specific notes, routes maps, and photos from each bike ride.

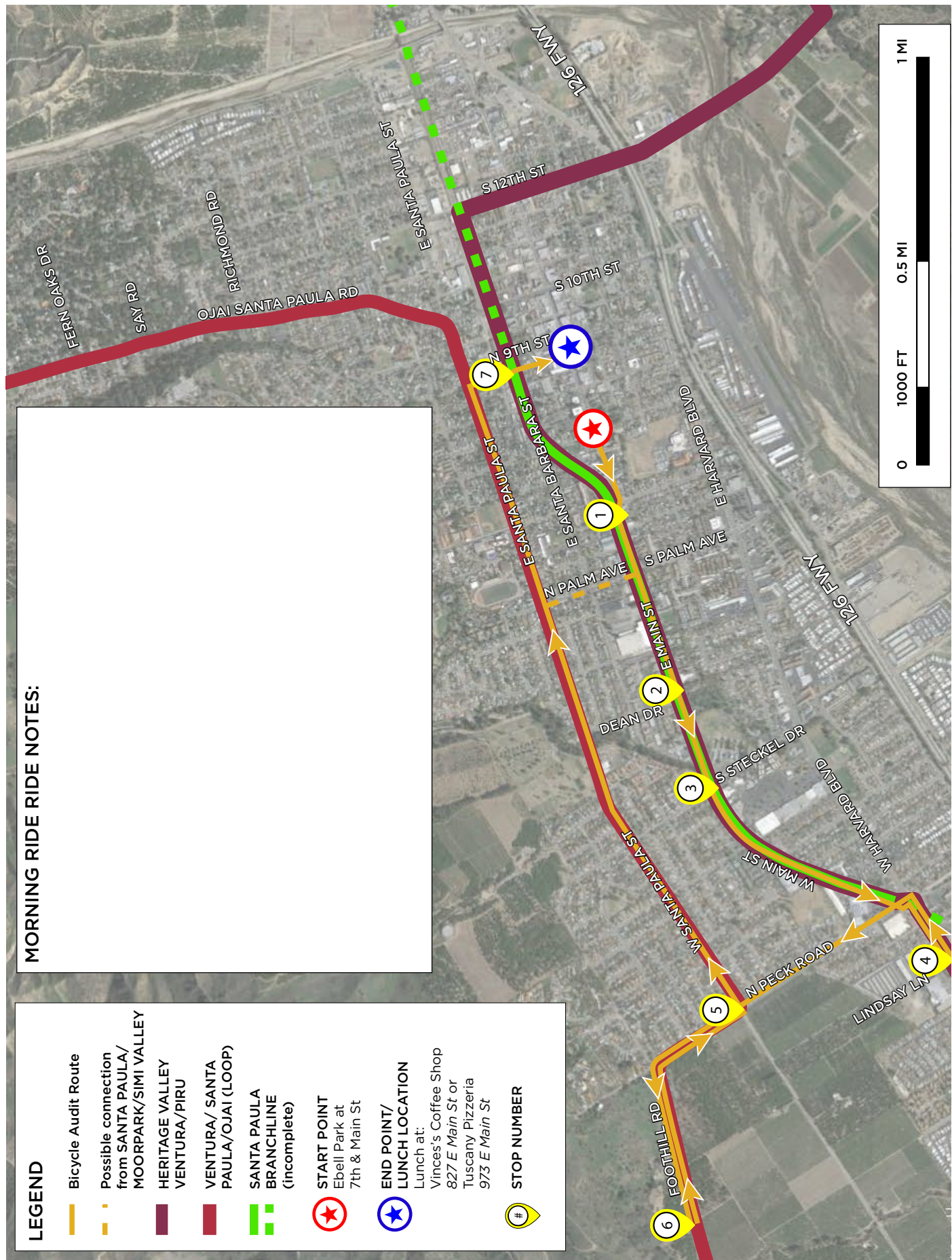


Figure 2-7: Sample Route Map from the Santa Paula Morning Bike Ride

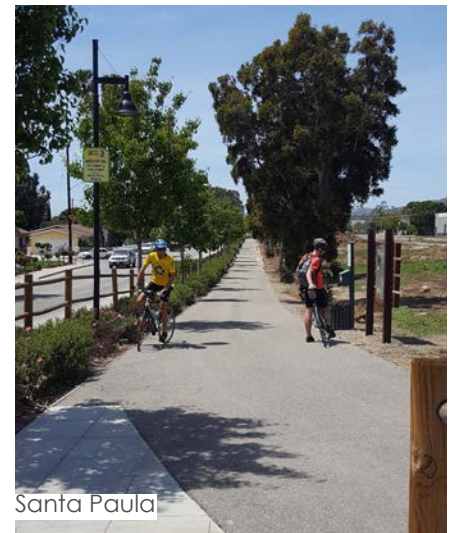


Figure 2-8: Photos from Various Bike Rides

PREFERRED ROUTES

Utilizing the information gathered through public outreach, digital mapping, community bike rides, and feedback from the TTAC Subcommittee the 17 routes in Figure 2-7 were identified as the preferred regional wayfinding routes. The routes provide regional connectivity to destinations and jobs, provide facilities for a range of users and abilities, and balance the constraints of existing facilities with future infrastructure improvement efforts. These routes formed the basis for the countywide Wayfinding Master Plan and were further prioritized to identify wayfinding needs and key gap closures.

REGIONAL BIKEWAY WAYFINDING ROUTE NAMING

This Plan did not develop official names for regional routes, though unofficial names are used throughout this Plan as a reference point. Ventura County's regional routes can be segments of larger, cross-county routes, such as the Coast Route and the Grand Loop. Naming of regional routes is recommended to be lead by regional groups such as Cycle California Coast and/or the East Ventura County Bicycle Tourism Group in the future.

As regional bikeway wayfinding routes are typically comprised of several different streets and/or trails, a consistent approach to naming routes should be followed. Table 2-1 provides a suggested approach which places priority on names that reflect existing names and provides guidance for bikeways comprised of several on- and off-street facilities.

Table 2-1: Ventura County Regional Bikeway Route Naming Suggested Guidance

Option 1: Name Reflects the Existing Route Name
<p>If the regional bikeway is largely comprised of a single existing regional route, the bikeway should reflect the name of the existing route.</p> <p>Examples of this include the Coast Route and the Grand Loop.</p>
Option 2: Name Reflects the Longest Segment Name
<p>If the regional bikeway is comprised of a few on- or off-street facilities, the regional bikeway name should be selected based on the route's longest single street or trail segment.</p>
Option 3: Route Specific Naming Convention
<p>There are a few instances where regional bikeways are comprised of several major local bikeways with identifiable names that span multiple municipalities. In these instances, a bikeway name that is intuitive in southern municipalities might seem disconnected and decrease legibility in northern municipalities. Municipalities implementing the route should identify a logical naming methodology that best describes the route.</p>



Figure 2-9: Proposed Regional Wayfinding Routes

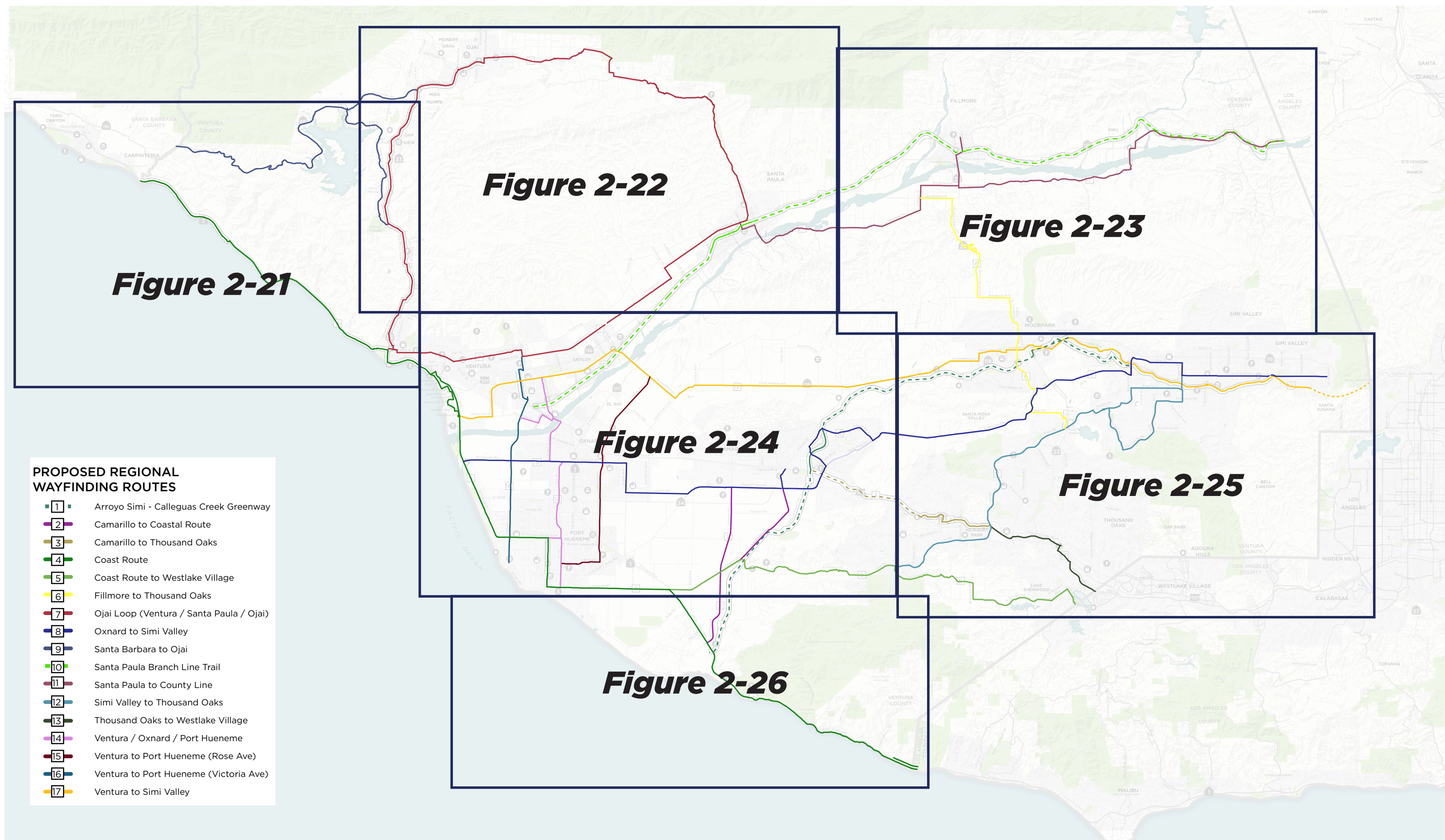


Figure 2-10: Zoomed Route Map Key. Individual zoomed maps can be found on pages 45-50.

2.2 ROUTE PRIORITIZATION

After evaluating the proposed routes, the project team established criteria to prioritize which of these routes were most in need of wayfinding. It was important to create a methodology to prioritize these routes to allow local jurisdictions, in partnership with VCTC to develop an objective and phased approach to the installation of wayfinding signs.

The TTAC Wayfinding Subcommittee collaborated with VCTC and Alta staff to assign relative weights to each criteria, with a maximum overall score of 100 points as outlined in Table 2-2. Segment scores were compiled into route-wide scores, which were then ranked to establish priorities for wayfinding improvements.

Table 2-2: Wayfinding Route and Sign Prioritization Criteria

GOAL

1

Criteria	Description	Score	Weight	Max Points
Route Readiness (Measured Route-Wide)				27
Route is comprised of existing bicycle facilities and multi-use paths, measured as a ratio (miles of non-existing bikeways "Gaps" / miles in route)	High ratio of facility "Gaps" to facilities (0 - 33)	1	8	24
	Medium ratio of facility "Gaps" to facilities (34 - 66)	2		
	Low ratio of facility "Gaps" to facilities (67 - 100)	3		
Route is comprised of planned bicycle facilities, measured as a ratio (miles planned / miles of non-existing bikeways in route)	High ratio of planned facilities to "Gaps" (0 - 33)	1	1	3
	Medium ratio of planned facilities to "Gaps" (34 - 66)	2		
	Low ratio of planned facilities to "Gaps" (67 - 100)	3		
Need				24
Route is adjacent to high population areas with a large potential user base (people per square mile)	Low -rural (0 - 999)	1	3	9
	Med-suburban (1,000 - 2,499)	2		
	High-urban (2,500+)	3		
Route is in need of wayfinding because it is complex based on number of intersections and number of nearby alternative routes	Low (0 - 49)	1	3	9
	Medium (50 - 99)	2		
	High (100+)	3		
Measure of existing bicycling activity (qualitative assessment of Strava Heat Map). See Figure 2-11	Low	1	2	6
	Medium	2		
	High	3		

GOAL

3

GOAL
4GOAL
5

Safety/Comfort/Skill Level				21
Degree of bike facility separation (separated vs. shared)	Existing Bike Route	1	4	12
	Existing Bike Lane	2		
	Existing Shared-use Path / Separated Bikeway	3		
Speed	Over 35	1	3	9
	Between 10-35 mph	2		
	Separated from road (vehicular speed is not a safety concern)	3		
Route has a history of more than one collision per roadway linear mile	Yes	0	1	1
	No	1		
Regional Connections				16
Route is within 1/4 mile of major employers	No	0	2.5	2.5
	Yes	1		
Route connects to regional destinations or existing bike facilities in adjacent counties	Low (1)	1	4.5	13.5
	Medium (2)	2		
	High (3+)	3		
Community Support				12
Public outreach has identified support for route	Low (0 - 10)	1	4	12
	Medium (11 - 49)	2		
	High (50+)	3		
Maximum Score				100

RESULTS

The routes with the highest scores share high rankings in four factors:

- a high level of readiness since they are comprised of a high percentage of existing bike facilities,
- a need for wayfinding signage due a large number of intersections,
- a robust connection to regional destinations, and
- strong community support.

GOALS MET

ROUTE PLANNING

- 1 Identify & Prioritize
- 2 Connectivity
- 3 Destinations
- 4 Inclusive Bikeways
- 5 Comfort
- 6 Community Engagement

TOP 10 HIGHEST SCORED ROUTES

Rank	Route	Route ID	Score
1	Simi Valley to Thousand Oaks	12	82.5
2	Ojai Loop (Ventura / Santa Paula / Ojai)	7	81
3	Oxnard to Simi Valley	8	81
4	Coast Route	4	80
5	Ventura to Port Hueneme (Victoria Avenue)	16	78
6	Ventura to Simi Valley	17	77
7	Thousand Oaks to Westlake Village	13	75
8	Coast Route to Westlake Village	5	69
9	Santa Paula Branch Line	10	63
10*	Camarillo to Coast Route	2	61.5
10*	Ventura to Port Hueneme (Rose Ave)	15	61.5

*Tie score

On the other end of the rankings, the routes with the lowest scores have a low degree of readiness, high vehicle speeds, and less public support. Figure 2-9 highlights the routes with the top ten highest scores and Table 2-3 shows the detailed results for each route.

MODEL INPUTS

To provide a greater level of transparency on the model inputs, Figures 2-12 through 2-21 are maps of the individual criteria listed in Table 2-3.

>> **GIS Data Available.** GIS data for the routes and analysis is available from VCTC.



Figure 2-11: Wayfinding Routes Sign Prioritization Results

Route ID #	Corridor	Corridor Readiness		Needs Analysis			Safety/Comfort/Skill Level				Regional Connections		Community Support	Total
		Existing Bike Facilities	Planned Bike Facilities	Population Density	Inter-sections	Strava Score	Class	Speed	Collisions	Major Employers	Destinations	Public Outreach		
1	Arroyo Simi - Calleguas Creek	8	3	3	3	2	12	9	0	2.5	13.5	4	60	
2	Camarillo to Coastal Route	16	3	3	3	6	8	3	0	2.5	9	8	61.5	
3	Camarillo to Thousand Oaks	16	1	6	6	2	4	3	1	2.5	13.5	4	59	
4	Coast Route	16	3	6	9	6	8	3	1	2.5	13.5	12	80	
5	Coast Route to Westlake Village	16	2	6	6	6	8	3	1	0	9	12	69	
6	Fillmore to Thousand Oaks	16	2	6	6	4	8	3	0	0	0	12	57	
7	Ojai Loop (Ventura/Santa Paula/Ojai)	16	3	6	9	4	12	6	1	2.5	13.5	8	81	
8	Oxnard to Simi Valley	16	3	9	9	4	8	3	1	2.5	13.5	12	81	
9	Santa Barbara to Ojai	8	3	3	3	4	0	3	1	0	9	4	38	
10	Santa Paula Branch Line	8	3	3	6	2	12	9	0	2.5	13.5	4	63	
11	Santa Paula to County Line	8	3	3	6	2	12	3	0	0	13.5	8	58.5	
12	Simi Valley to Thousand Oaks	24	3	9	9	6	8	3	1	2.5	9	8	82.5	
13	Thousand Oaks to Westlake Village	24	3	9	3	4	8	3	1	2.5	13.5	4	75	
14	Ventura / Oxnard / Port Hueneme	24	1	6	6	2	8	3	0	2.5	4.5	4	61	
15	Ventura to Port Hueneme (Rose Ave)	16	1	6	9	2	8	3	1	2.5	9	4	61.5	
16	Ventura to Port Hueneme (Victoria Ave)	24	1	9	6	2	8	3	1	2.5	13.5	8	78	
17	Ventura to Simi Valley	16	3	9	9	4	8	3	1	2.5	13.5	8	77	

Table 2-3: Wayfinding Route Score Results

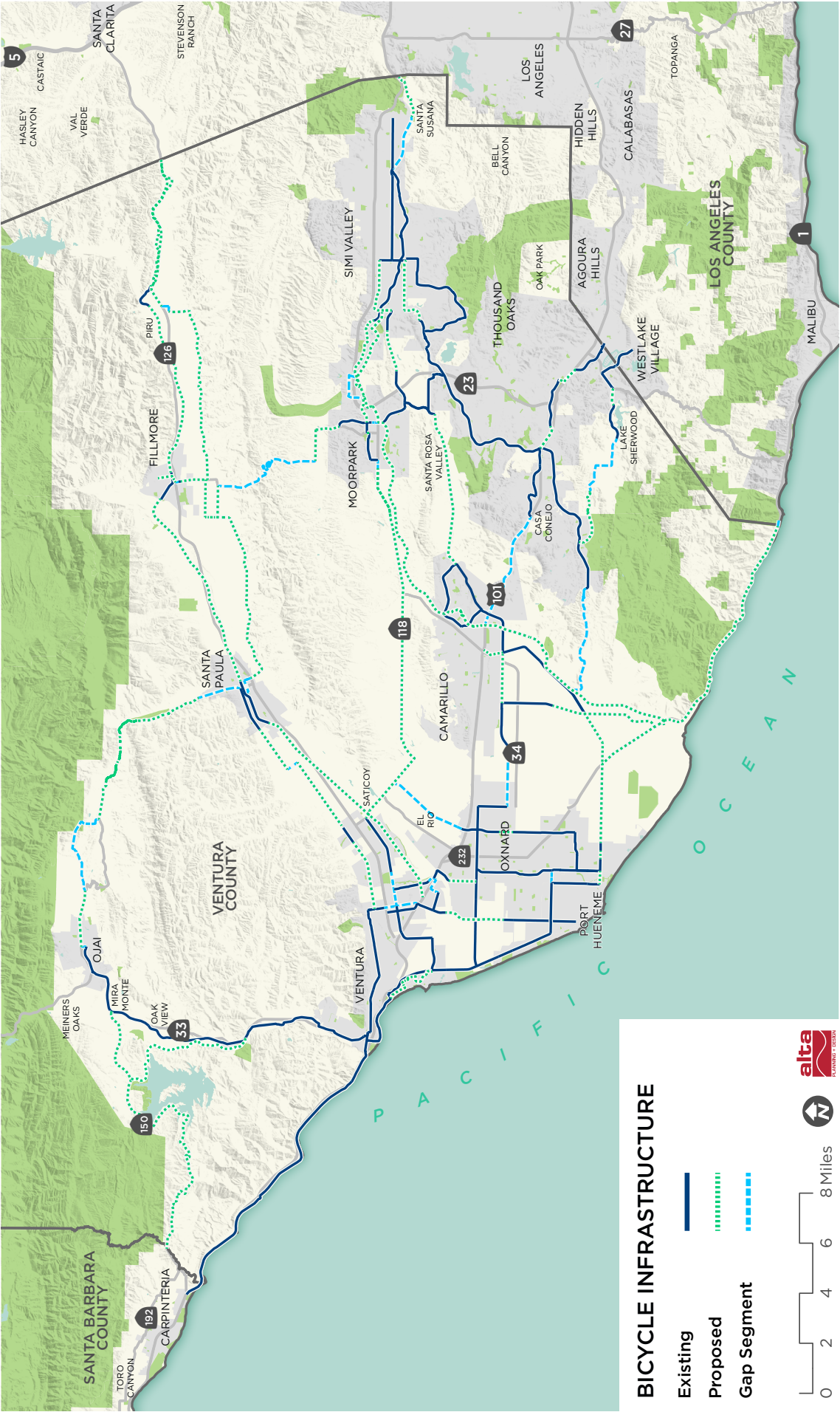


Figure 2-12: Existing and Planned Bike Infrastructure

This map helps evaluate route readiness. Routes with existing facilities score highest. Routes with planned facilities indicate that the local jurisdiction has plans to build a bikeway. Gaps indicate where there is neither an existing or planned bikeway.

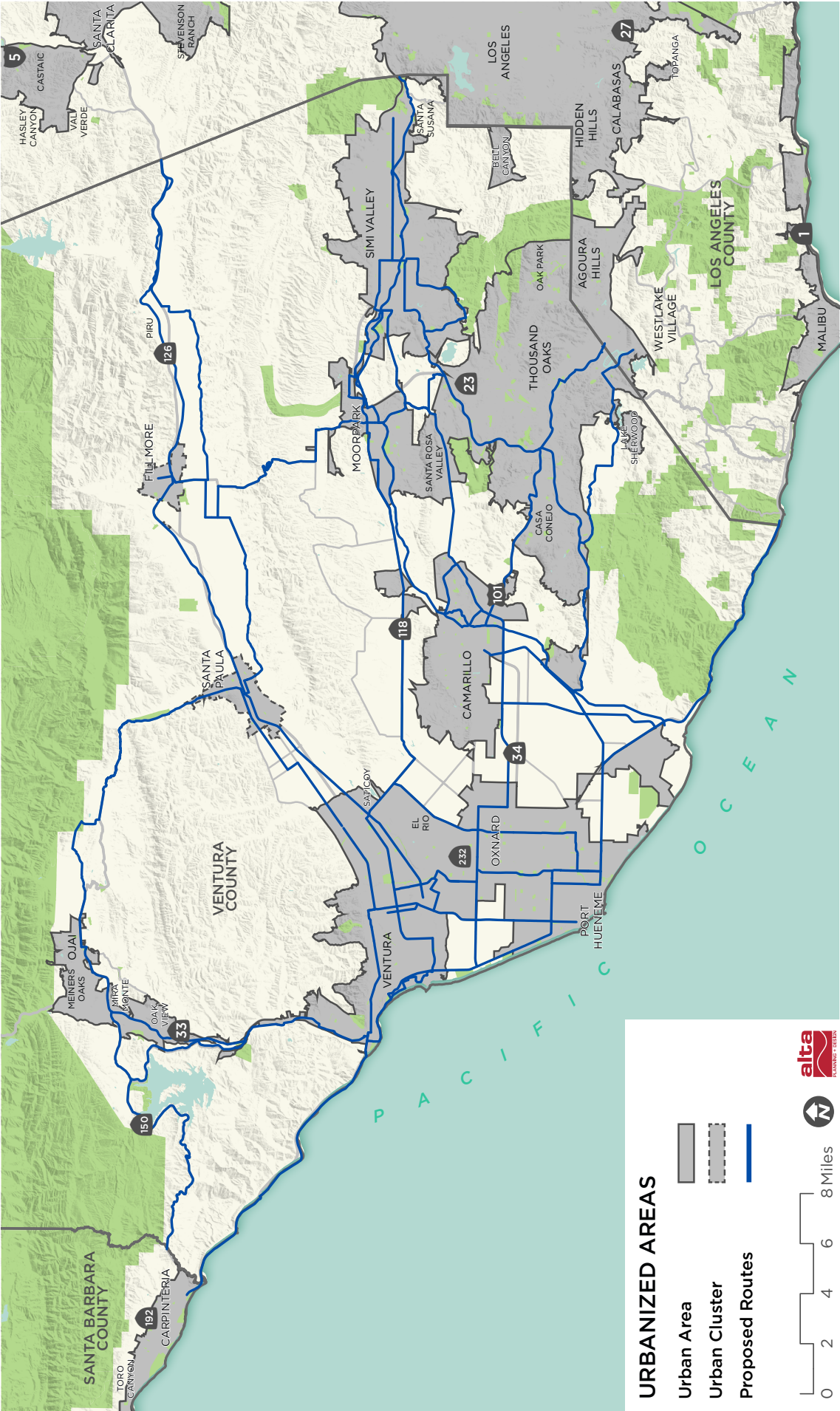


Figure 2-13: Urban Areas
Higher priority routes connect to urban areas and urban clusters, where there is a large potential user base.



Figure 2-14: Intersections

A greater number of intersections along a route indicates potential route complexity. A more complex route would have a greater need for wayfinding.

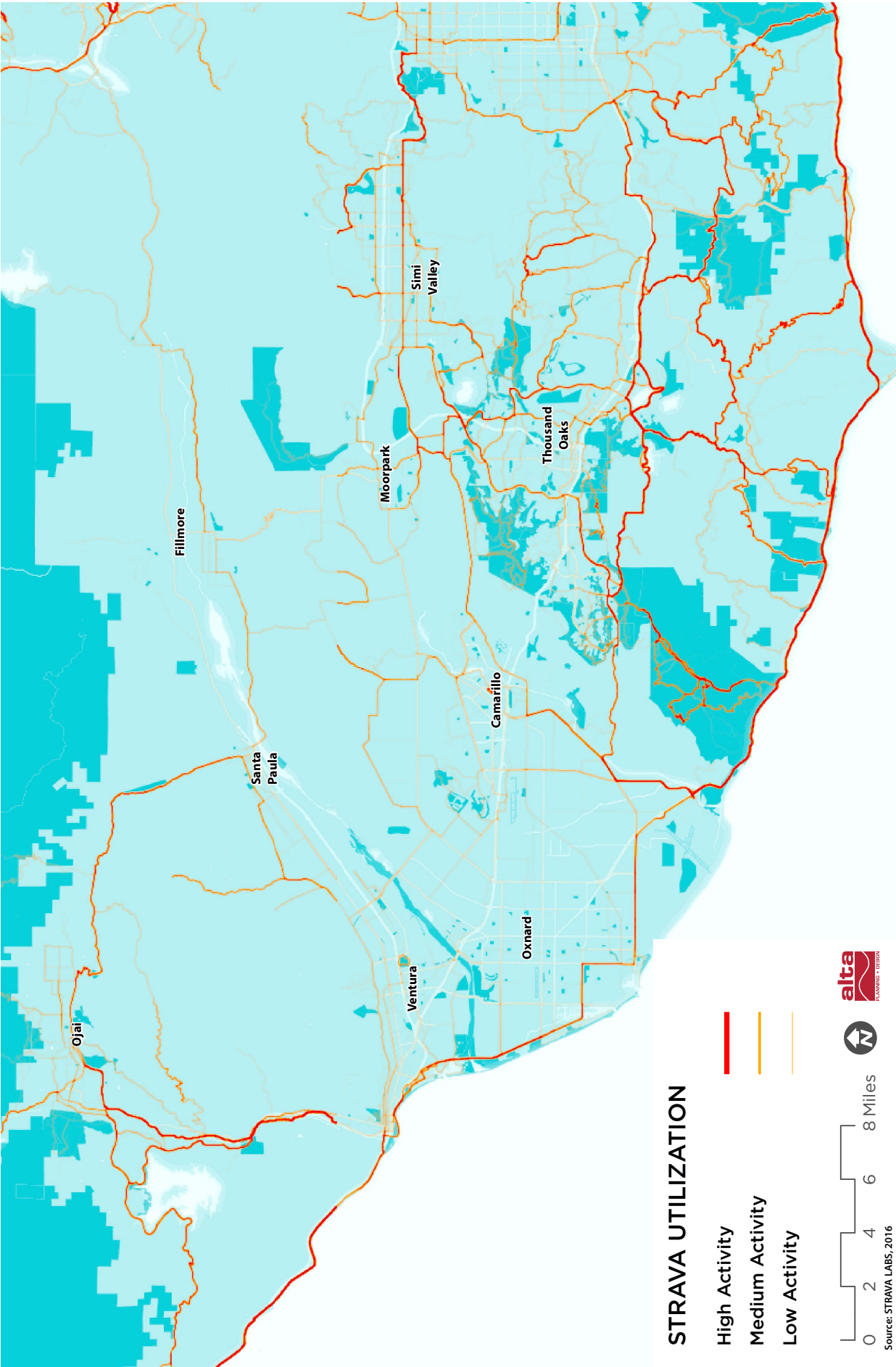


Figure 2-15: STRAVA Heat Map

This map shows a measure of existing bicycling activity based on data taken from the Strava Heat Map. Strava is a website and mobile app used to track athletic and commuting cycling activity via GPS.

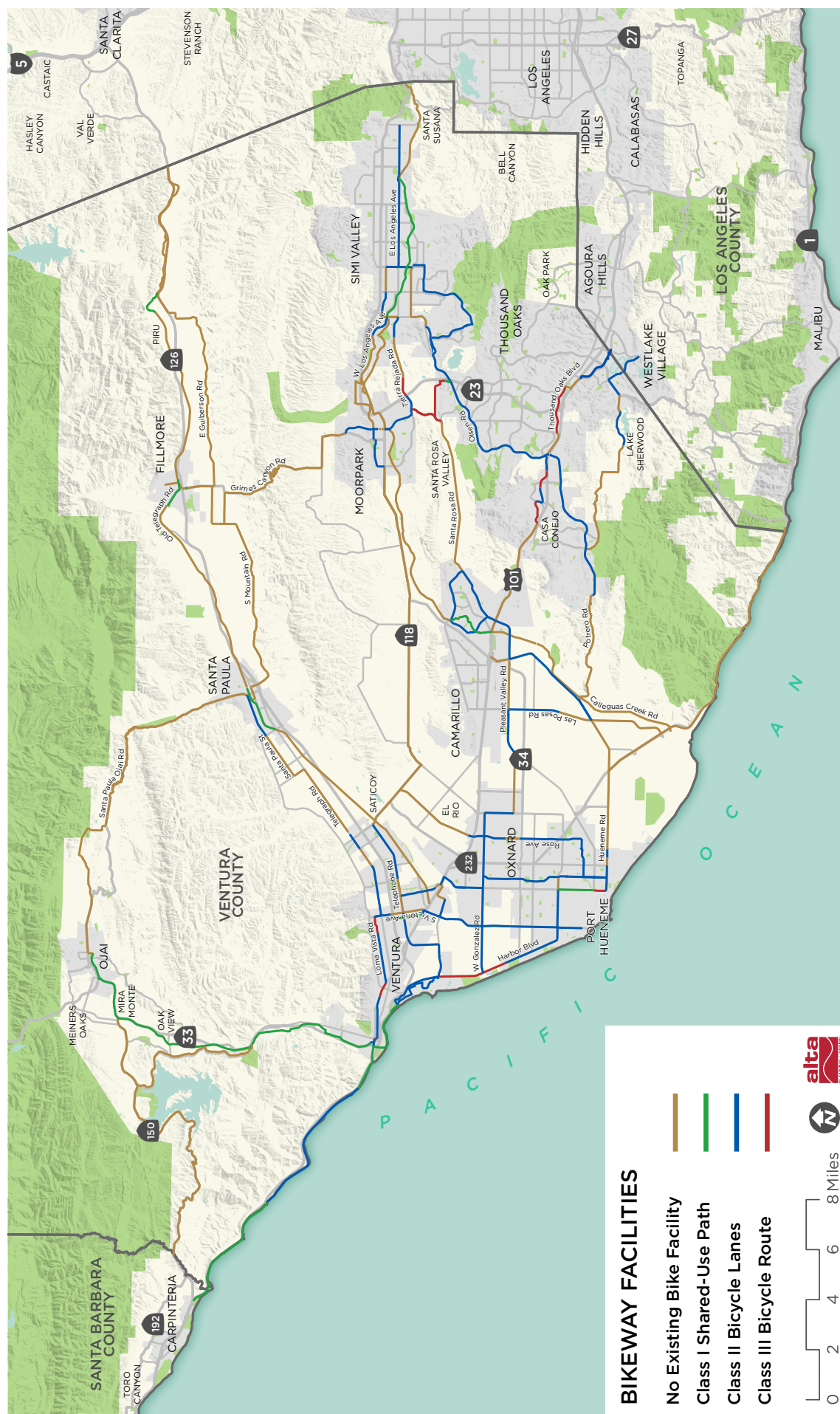


Figure 2-16: Degree of Bike Facility Separation

The degree of bike facility separation from vehicle traffic is an indicator of riding comfort for an average bicycle rider. Shared-use paths provide the greatest degree of separation while bike routes share the lane with vehicular traffic.

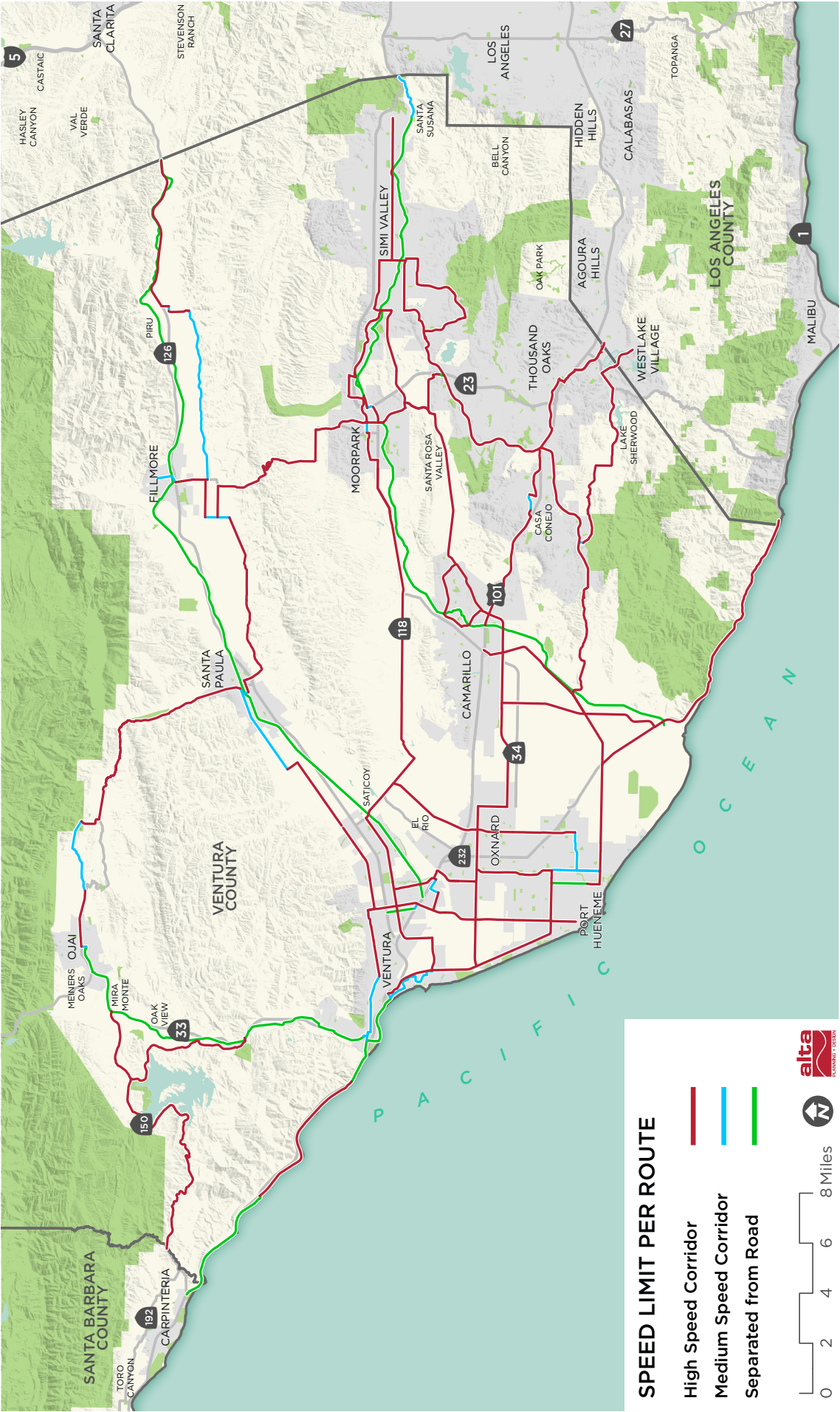


Figure 2-17: Speed Limit
Speed is used as a proxy for safety and comfort. The greater the vehicle speed the more severe an injury would be and the less desirable a facility would be for a beginner or average cyclist.



This map shows bicycle-involved injury collisions in Ventura County from 2009 to 2014. Each reported bike crash in the Statewide Integrated Traffic Records System (SWITRS) is recorded as a red dot on the map. Aggregated collision results are also shown.

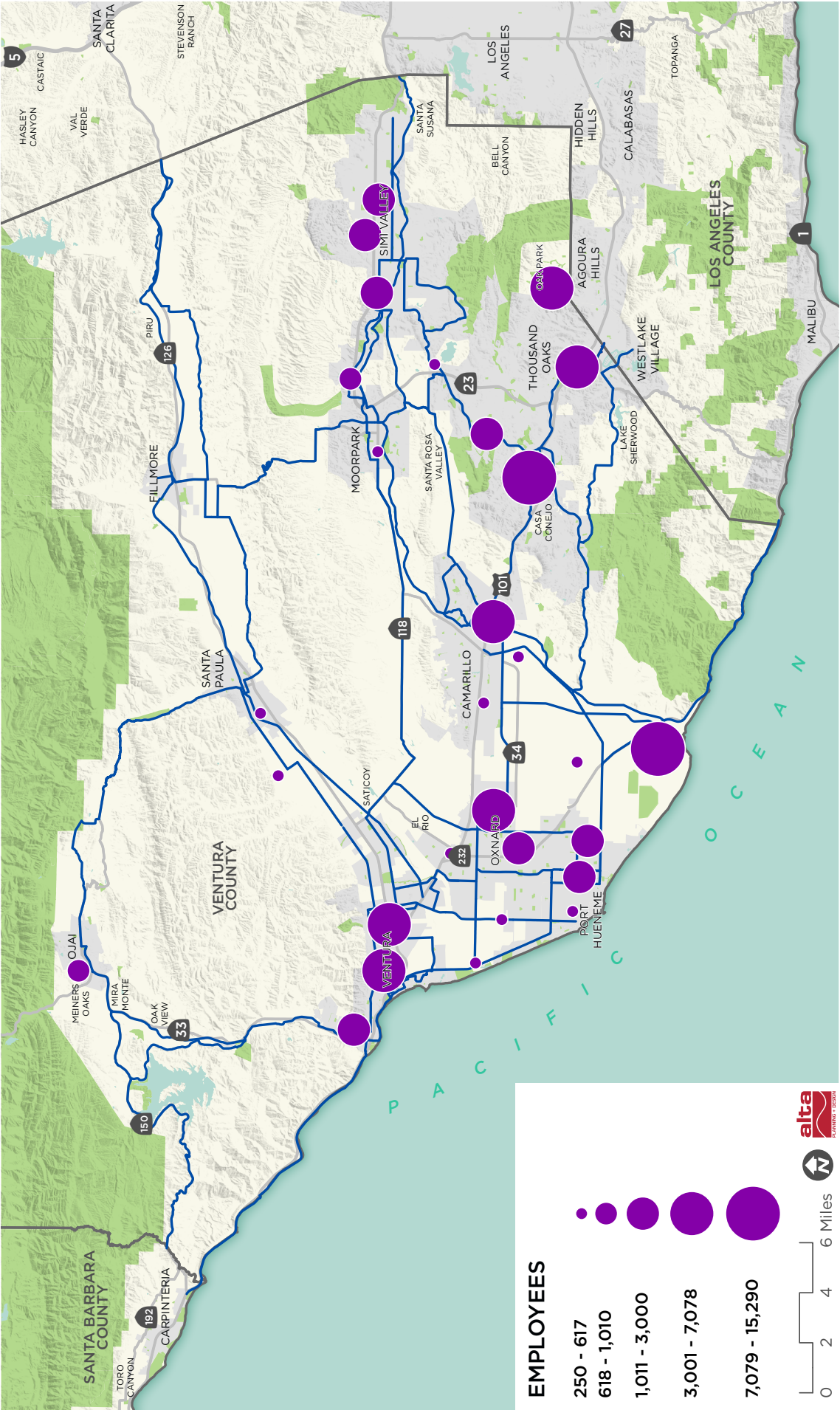


Figure 2-19: Employment Centers
Routes within a ¼ mile radius of major employers were given a higher priority. A major employer has 50 or more full-time employees or equivalents.

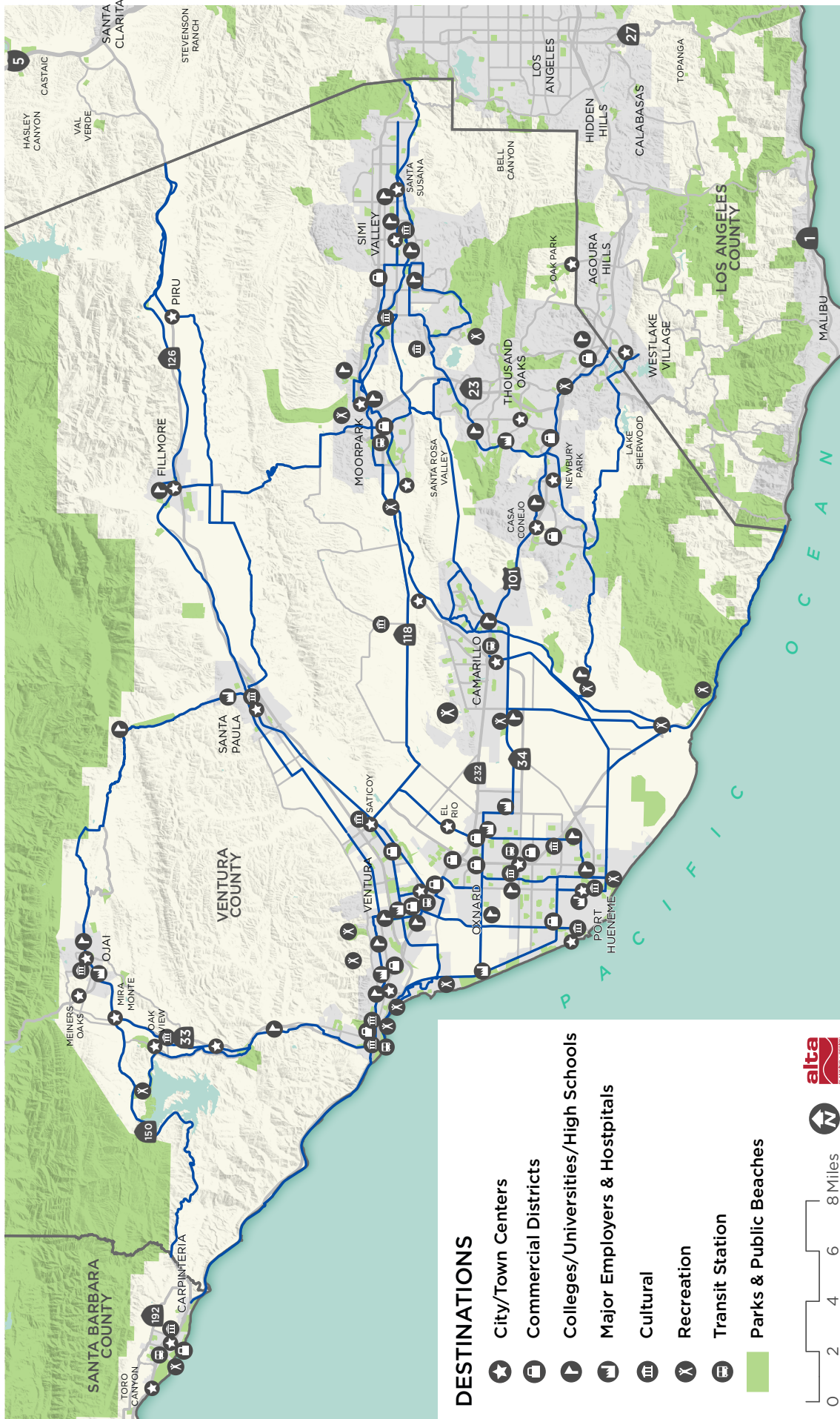


Figure 2-20: Regional Destinations

Routes that provide connections to regional destinations such as parks, attractions, commercial destinations, and government centers were given a higher priority.

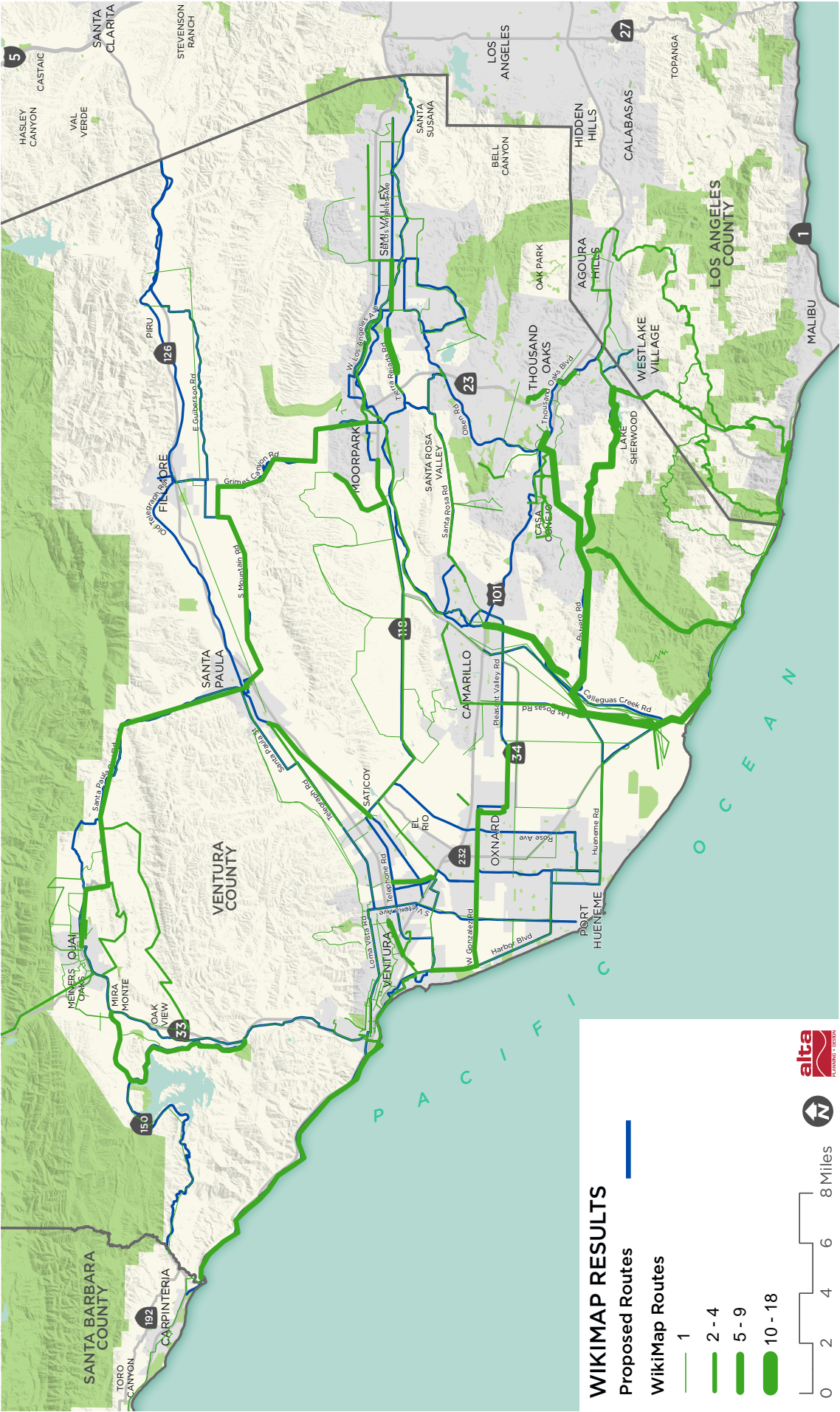


Figure 2-21: Bike WikiMap

This map shows results of the bicycle WikiMap that was available for public comment from December 9, 2015 to January 29, 2016.



BIKE ROUTE DIFFICULTY RANKING

The Plan established a goal to assess the difficulty of County-identified bike routes to enable people to gauge comfort level along the routes based on skill or experience. The intent is to:

- help people riding bikes make informed decisions and
- encourage visitors to navigate the County on bike routes that match their skill level.

One way to achieve this goal is through a data-driven approach. Alta developed a modified Level of Traffic Stress method adapted from the 2012 Mineta Transportation Institute (MTI) Report 11-19: Low-Stress Bicycling and Network Connectivity to create an index of difficulty. The MTI approach uses roadway network data, including posted speed limit, the number of travel lanes, and the presence and character of bike lanes, as a proxy for bike rider comfort level. Comfort is a measurement of the ease with which a safety-oriented or inexperienced bicyclist may navigate a particular segment of a route. Alta created an index based on speed limit, existing bike facilities, and the presence of paved shoulders wide enough to accommodate biking. As shown in Figure 2-20, segments identified as the most difficulty biking (in red) generally occur on high-speed streets without bike facilities. The least difficulty biking (in green) generally follow existing bike paths and are separated from motor vehicle traffic.

Elevation or grade change is another metric to evaluate the difficulty of a bikeway. Providing information for each route, such as distance, elevation profile, location for services can help users make their own evaluation of a route prior to their ride.

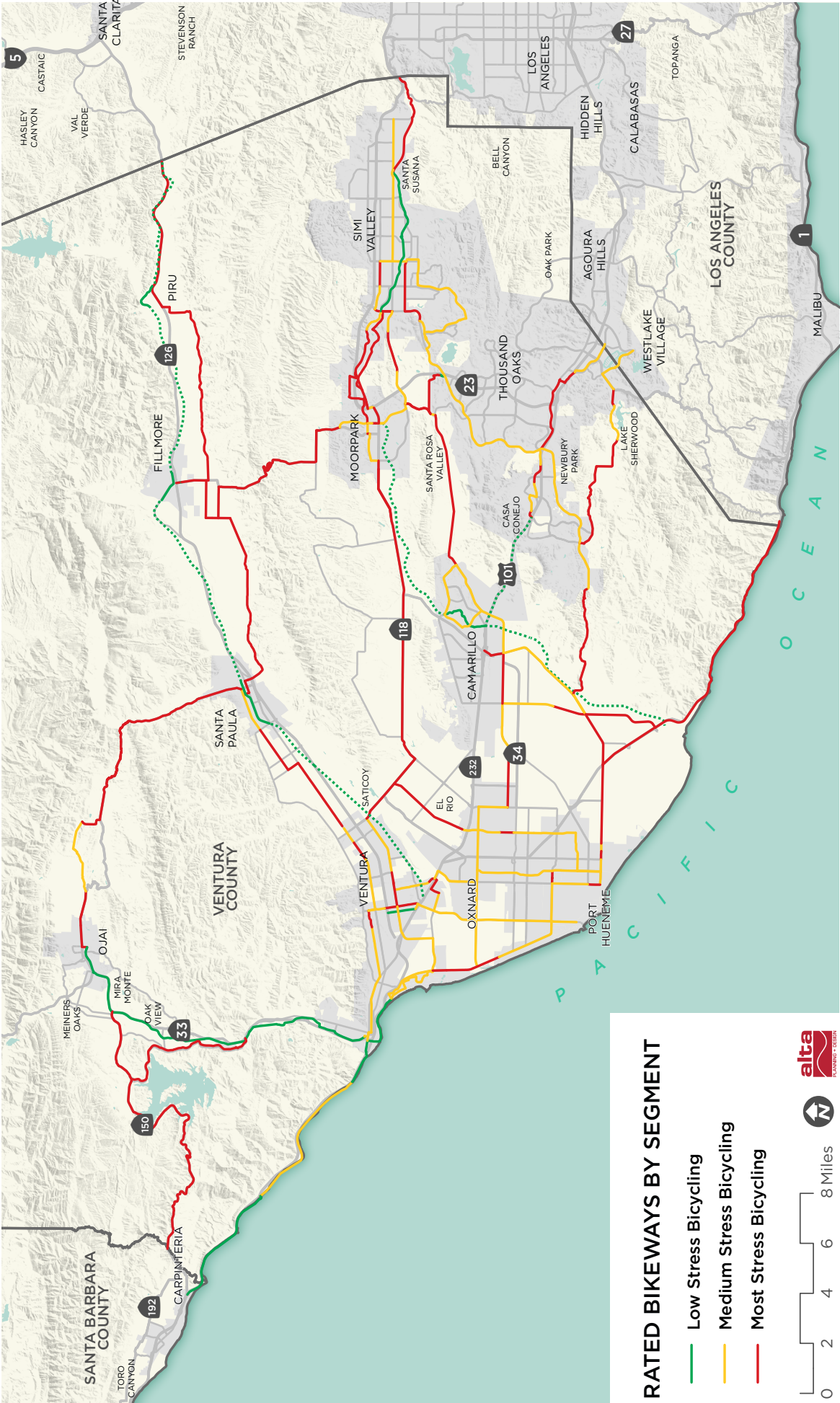
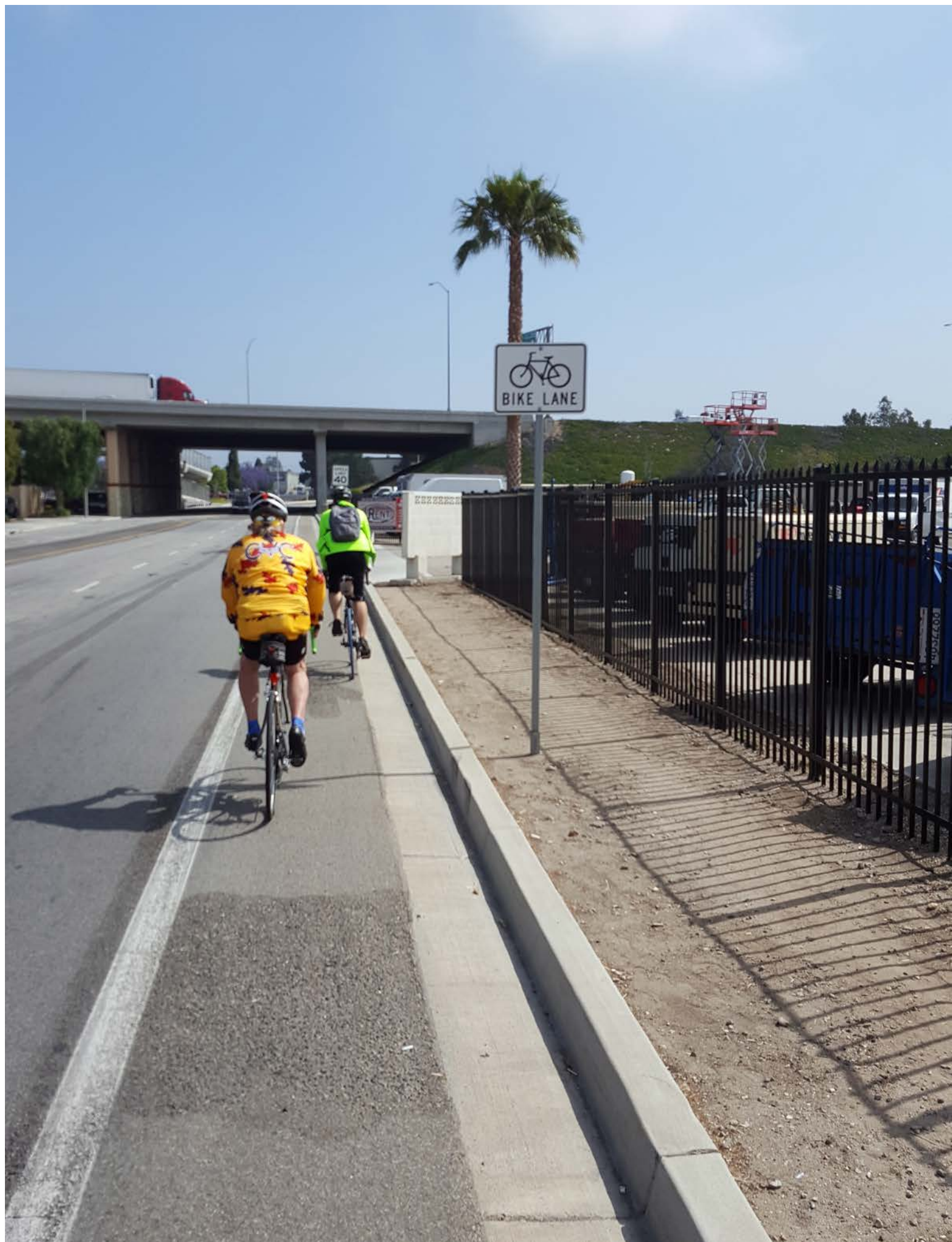


Figure 2-22: Comfort Level



2.3 GAP CLOSURE PRIORITIZATION

GOALS MET

ROUTE PLANNING

- 1 Identify & Prioritize
- 2 Connectivity
- 3 Destinations
- 4 Inclusive Bikeways

GAP EVALUATION

Route segments without bike facilities (gaps) were evaluated as part of this prioritization process. Key gaps in Ventura County's bikeway network were identified as a complementary effort to the wayfinding signage. These gaps range from short 'missing links' to longer sections of roads with narrow shoulders and no bike infrastructure. This process also identified and prioritized these gaps using a methodology similar to the wayfinding effort. The segments without existing bike facilities were scored based on the following criteria:

- Route Priority
 - Composite score from prior wayfinding analysis
- Safety/Comfort/Skill Level
 - Existing/proposed bike facilities have a higher degree of separation from vehicular traffic (separated vs. shared)
 - Route includes areas with comfortable roadway speeds (less than 35 mph)
 - Corridor has a history of collisions
- Ease of Implementation
 - Measure of existing shoulder condition

RESULTS

It is important to note that not all gaps within the routes have similar attributes -- they vary greatly in terms of posted speed limits, planned bike facilities, and shoulder characteristics. These gaps were scored according to the criteria in Table 2-3. The highest scoring gaps were part of a top priority corridor and have a paved shoulder width of at least five feet. Gaps with lower scores have no planned bike facilities and high posted speed limits. Figure 2-21 shows these prioritized gaps.

This gap prioritization score can assist local jurisdictions, in partnership with VCTC, to recognize opportunities for gap closures that will help complete regional routes, and help inform further planning efforts to focus on maximizing improvements to the countywide bikeway network.

Table 2-4: Gap Closure / Infrastructure Improvement Prioritization Criteria

Criteria	Description	Score	Weight	Max Points
Route Priority				36
Composite route priority score (applied per segment)	Low (0-40)	1	12	36
	Medium (41-80)	2		
	High (81-100)	3		
Safety / Comfort / Skill Level				40
Degree of bike facility separation for planned bicycle facilities (separated vs. shared)	None	0	6	18
	Proposed Bike Route	1		
	Proposed Bike Lane	2		
	Proposed Shared-use path / Separated Bikeway	3		
Roadway speed	Separated from road	1	6	18
	Between 10-35 mph	2		
	Over 35	3		
Route has a history of collisions	No collisions	0	4	4
	Yes collisions	1		
New Bikeway Potential / Ease of Implementation				40
Existing shoulder condition	No existing shoulder - major investment needed	1	8	24
	Paved shoulders are usable as is, and could be upgraded	2		
	Gravel shoulders greater than or equal to 5 feet are not currently usable but have potential for new bikeway	3		
Maximum Score				100

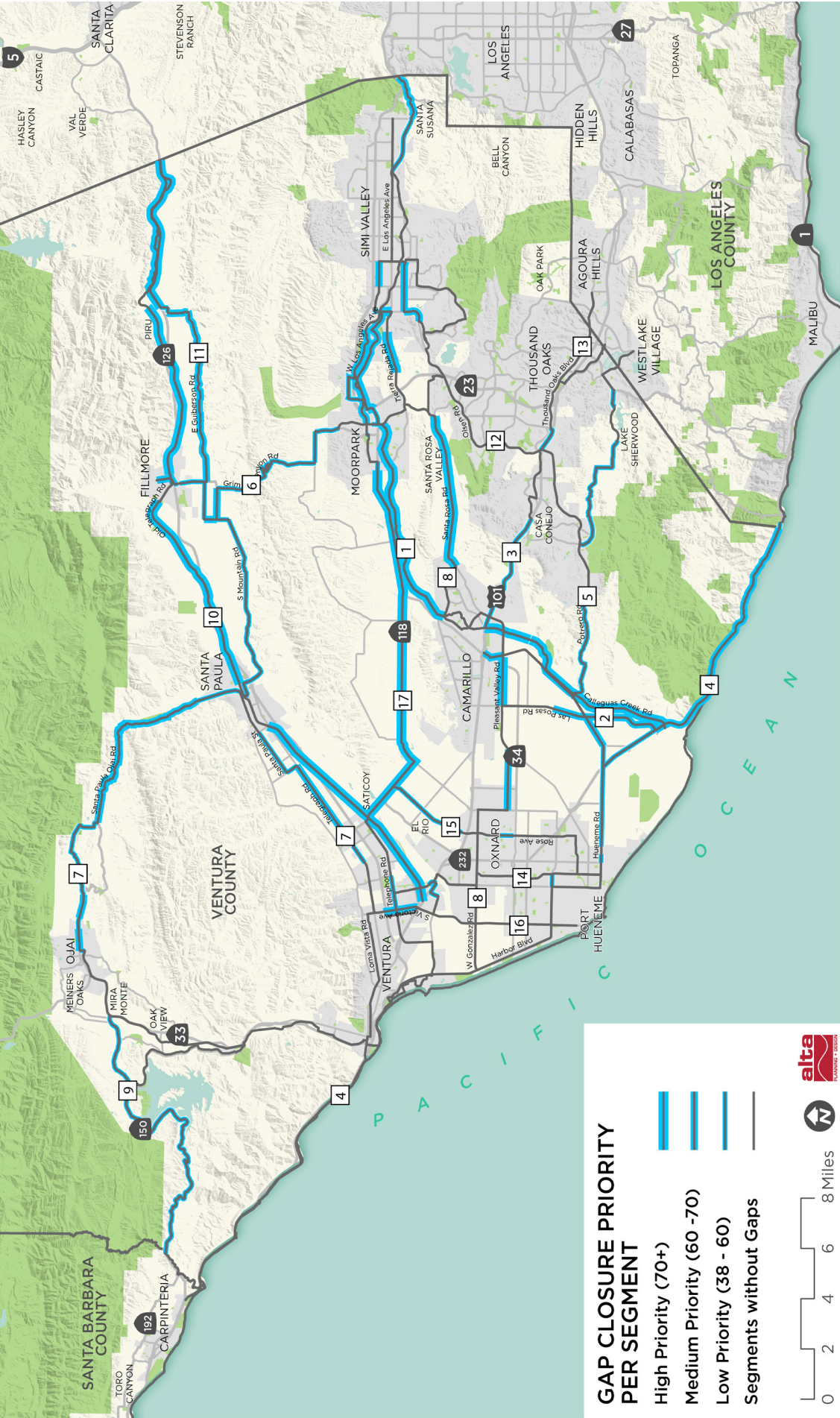


Figure 2-23: Gap Scoring Map



2.4 REGIONAL DESTINATIONS

WHAT ARE REGIONAL DESTINATIONS?

Regional destinations describe places along Ventura County regional bikeways to which users may want to travel. Within wayfinding systems, destinations appear as the messages on decision signs and are key to establishing a network that is traveled for both transportation and recreation.

TECHNICAL GUIDANCE: REGIONAL DESTINATION IDENTIFICATION

Given the multitude of destinations throughout Ventura County, a consistent approach to identifying regional destinations is necessary to ensure the wayfinding network is clear and predictable.

Destinations were identified by developing three broad tiers that capture the spectrum of potential regional destinations (Table 2.4).

Regardless of the destination hierarchy, the following guidance should be considered when identifying regional destinations.

- Destinations should be open to the public
- Destinations should include public buildings, parks, trail systems, and other facilities
- Destinations should include a minimum level of public amenities (restrooms, trail access, etc.)
- Destinations should have significant visitor/user interest
- Size of attraction/number of outside visitors

>> See **Section 3.2:** Sign Programming for guidance on using destinations to identify sign messages.

>> See **Appendix C** for a full listing of destinations identified through this process. A GIS database of these destinations is available in GIS

Table 2-5: Destination Hierarchy

Tier 1	Regional Destinations. Provide the broadest navigational guidance such as city names and regional trail connections. <ul style="list-style-type: none"> • Cities • Unincorporated Communities • Adjacent Counties • Regional Trails
Tier 2	Regional Attractions. Include landmarks and attractions. <ul style="list-style-type: none"> • Transit Stations (Amtrak) • Regional Parks and Beaches • Major Civic/Commercial Centers
Tier 3	Local Destinations. Places of local interest. <ul style="list-style-type: none"> • Business and Services (Employment Centers) • Medical facility - Hospitals, veterans services providers, and clinics may be considered if the facilities meet all of the following criteria: <ul style="list-style-type: none"> - Service is provided 24 hours a day, 7 days a week. - Emergency department facilities and services are provided. - The facility is licensed or approved for definitive medical care by an appropriate State authority. • Shopping Center: A group of thirty or more shops, retail stores, and/or restaurants with at least one major department store functioning as an anchor. • Visitor Center: A facility having the primary purpose of providing information and tourist support services. • College/University: An educational institution that is nationally accredited and grants degrees. • Historic Site: A structure or place of historical, archaeological, or architectural significance listed on the National Register of Historic Places. • Museum: A facility of national or regional significance exhibiting works of artistic, historic, or scientific value. • Performing Arts Venue - A facility focused on the enjoyment of the performing arts and providing a minimum capacity of two hundred seats. • Geological feature • Stadium or arena - A permanent facility used for the primary purpose of presenting organized sporting events. Includes county and state fairgrounds. • Designated districts and neighborhoods <ul style="list-style-type: none"> - Areas that have been formally established by resolution or ordinance of the appropriate local agency or if the district has developed and implemented its own internal wayfinding sign plan. Examples of districts include: city centers, university districts and arts districts. - Neighborhoods having historic character or otherwise significantly contributing to the culture and vibrancy of a city may also be identified.

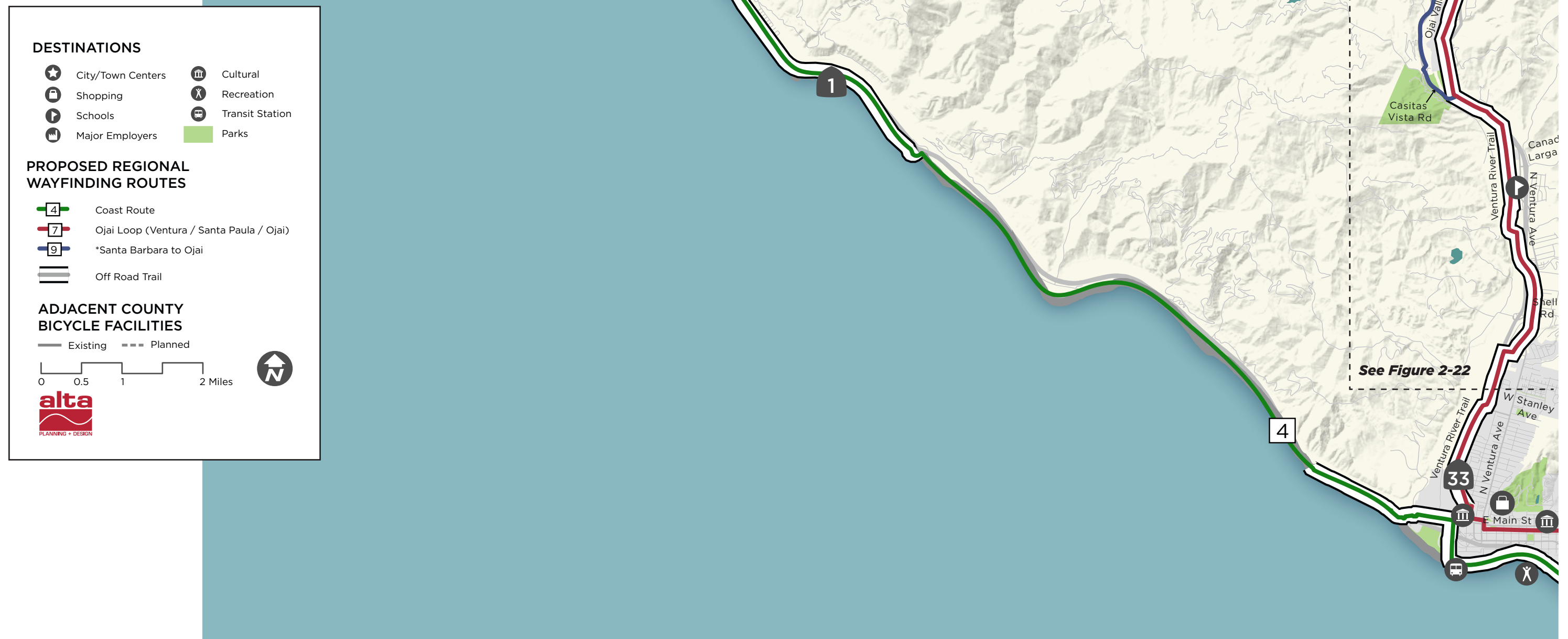


Figure 2-24: Zoomed Route Map: Sheet 1 (4-Coast Route, 7-Ojai Loop, 9-Santa Barbara to Ojai)

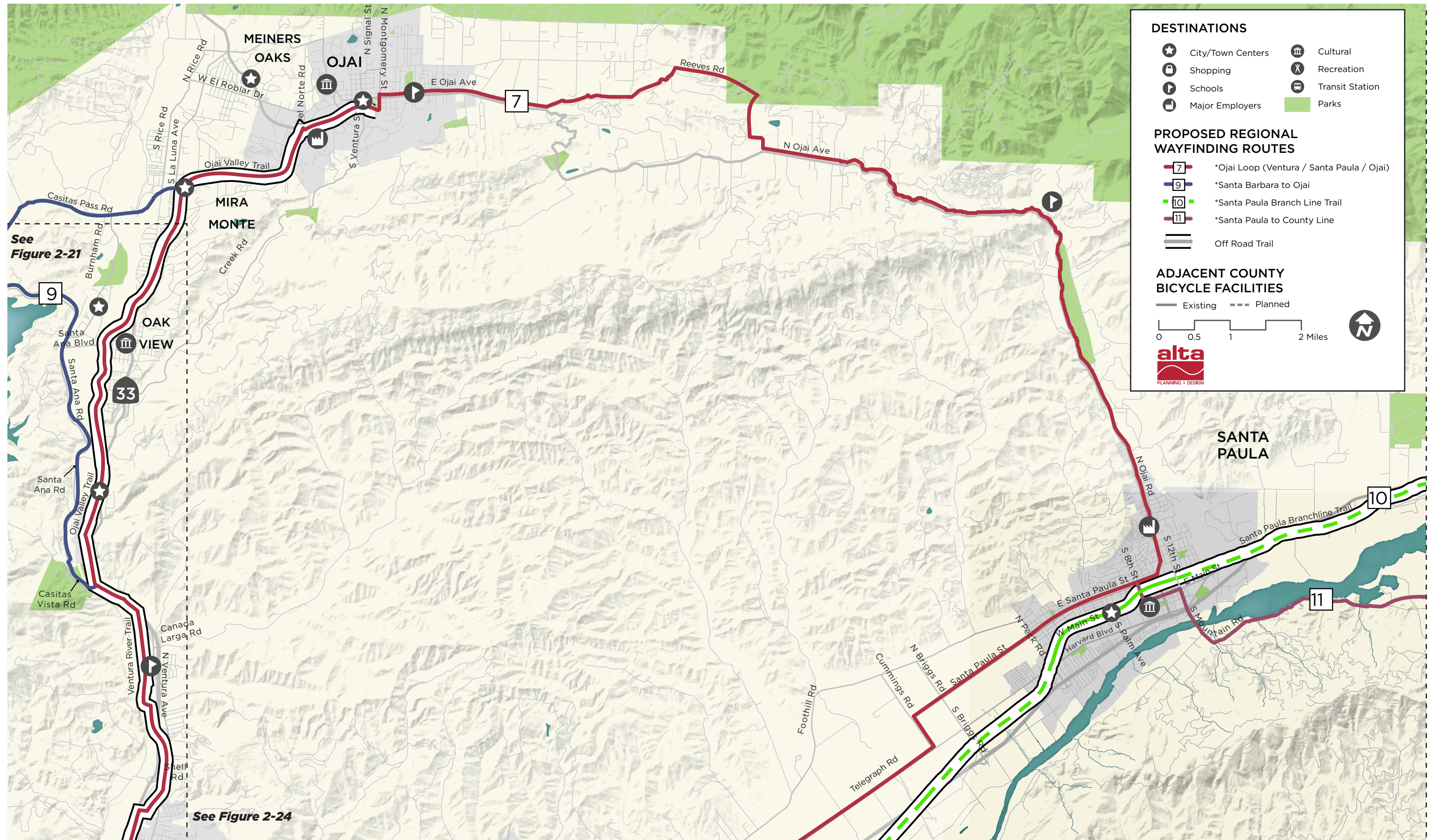


Figure 2-25: Zoomed Route Map: Sheet 2 (7-Ojai Loop, 9-Santa Barbara to Ojai, 10-Santa Paula Branch Line Trail, 11-Santa Paula to County Line)



Figure 2-26: Zoomed Route Map: Sheet 3 (6-Fillmore to Thousand Oaks, 10-Santa Paula Branch Line Trail, 11-Santa Paula to County Line)

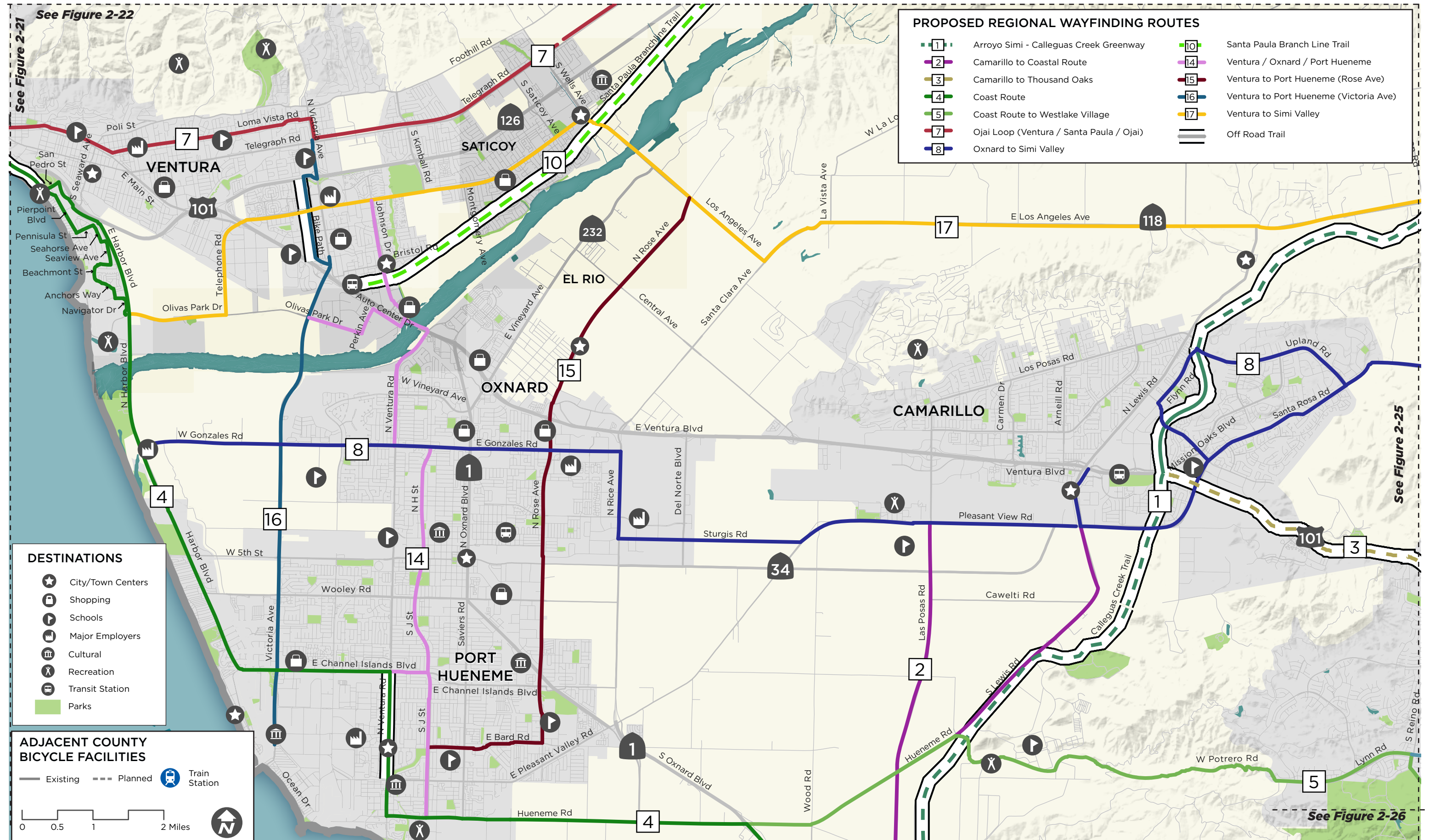


Figure 2-27: Zoomed Route Map: Sheet 4 (1-Arroyo Simi-Calleguas Creek Greenway, 2-Camarillo to Coast Route, 3-Camarillo to Thousand Oaks, 4-Coast Route, 5-Coast Route to Westlake Village, 7-Ojai Loop, 8-Oxnard to Simi Valley, 10-Santa Paula Branch Line Trail, 14-Ventura-Oxnard-Port Hueneme, 15-Ventura to Port Hueneme - Rose Ave, 16-Ventura to Port Hueneme-Victoria Ave, 17-Ventura to Simi Valley)



Figure 2-28: Zoomed Route Map: Sheet 4 (1-Arroyo Simi-Calleguas Creek Greenway, 3-Camarillo to Thousand Oaks, 5-Coast Route to Westlake Village, 6-Fillmore to Thousand Oaks, 8-Oxnard to Simi Valley, 12-Simi to Thousand Oaks, 13-Thousand Oaks to Agoura Hills, 17-Ventura to Simi Valley)

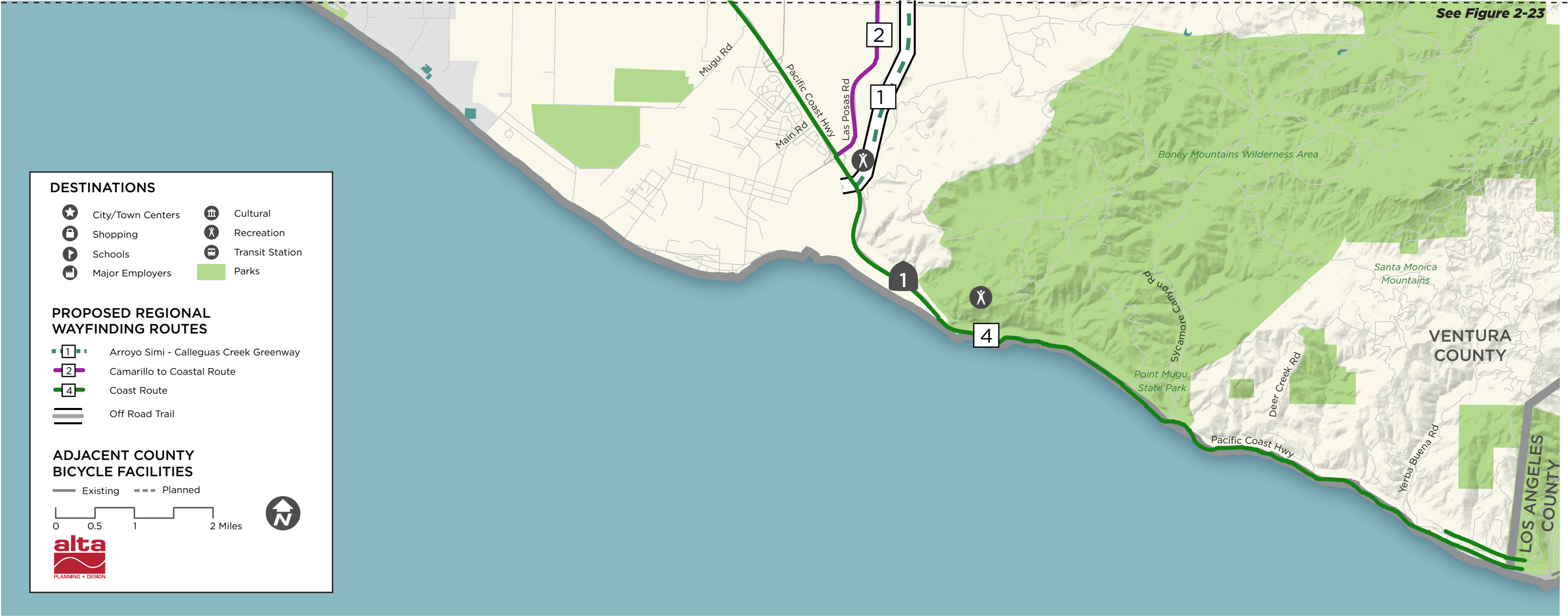


Figure 2-29: Zoomed Route Map: Sheet 4 (1-Arroyo Simi-Calleguas Creek Greenway, 2-Camarillo to Coast Route, 4-Coast Route)



SECTION 3:

WAYFINDING TOOLKIT

PACIFIC COAST


VENTURA COUNTY
BIKE ROUTE

Carpenteria 14

Amtrak 0.75

State Beach 1



3.1 WAYFINDING FAMILY OF SIGNS

GOALS MET

7

Sign Design Guidelines

8

Route Visibility

9

Local Economy

WHAT IS THE WAYFINDING FAMILY OF SIGNS?

The bicycle wayfinding family of signs establishes a cohesive identity for Ventura County regional bikeways. The sign designs improve navigation, encourage use, and provide an identify for the network.

The wayfinding signs are closely tied to standard CA MUTCD Bicycle Guide Signs but have been tailored for Ventura County and will enable the county and municipalities to effectively address wayfinding needs along both on- and off-street routes. The wayfinding signs include opportunities for route and jurisdiction branding through the use of supplemental plaques.

>> **See Appendix D** for sign concept designs. Three unique designs were developed for Ventura County. The preferred design was selected by the VCTC TTAC with input from the public and the TTAC Wayfinding Subcommittee.

HOW ARE THE SIGNS USED?

The subsequent sections provide an overview of the Ventura County bicycle wayfinding family of signs and planning level design guidance for sign production. Wayfinding signs were developed to match in-house fabrication capabilities throughout Ventura County. On-street signs are CA MUTCD compliant.

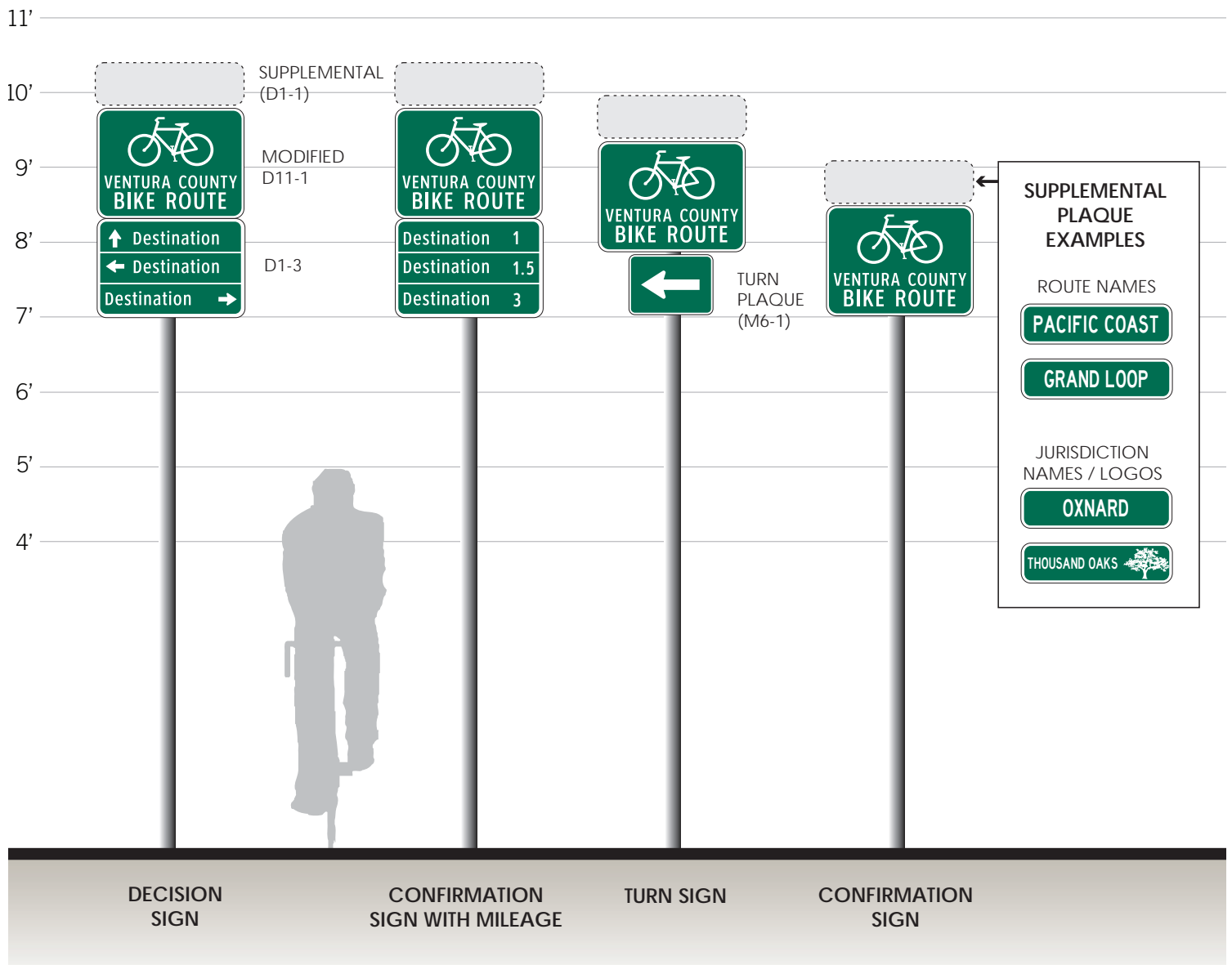


Figure 3-1: Ventura County Family of Signs

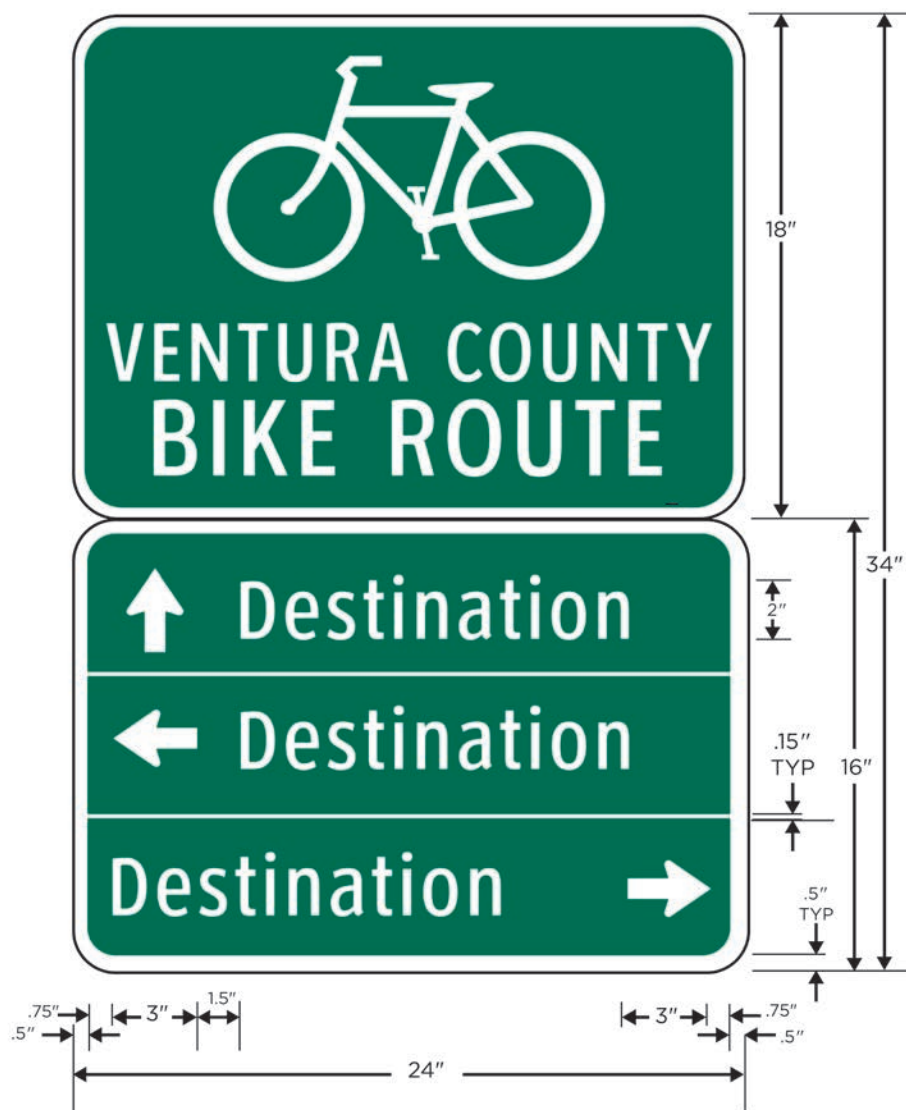


Figure 3-3: Decision Sign

Notes:

- Regional Bike Route Plaque and Destination Plaque can be fabricated as two individual signs or as one sign.

Destination Plaque

- D1-1b layout
- Clearview Hwy 2W Font, capital letter height 2", capitalize only first letter of each word
- MUTCD standard arrow (3" x 2.1")
- Forward and left destinations aligned left with arrow; right destination aligned right with arrow
- Ahead and left arrows centered

DECISION SIGN

Description

Decision signs clarify route options when more than one potential route or multiple regional destinations exist. Signs consist of the regional bike route plaque and space for up to three destinations with arrows.

Placement

Install decision signs along a regional bikeway prior to decision making points and at intersections. Allow for sufficient distance prior to the intersection to provide safe recognition and response to information provided. Decision signs should be placed on the near side of the intersection and followed by a confirmation sign with mileage on the far side of an intersection.

Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

CONFIRMATION SIGN WITH MILEAGE

Description

Placed after a turn movement or intersection to reassure cyclists that they are on the correct route and provide the distance to destination. Signs consist of the regional bike route plaque and space for up to three destinations with mileage.

Placement

Signs should be placed 50 – 100 feet after turns following decision signs. Confirmation signs with mileage are to be placed at the beginning of a regional routes and on the far side of an intersection following a decision sign.

Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

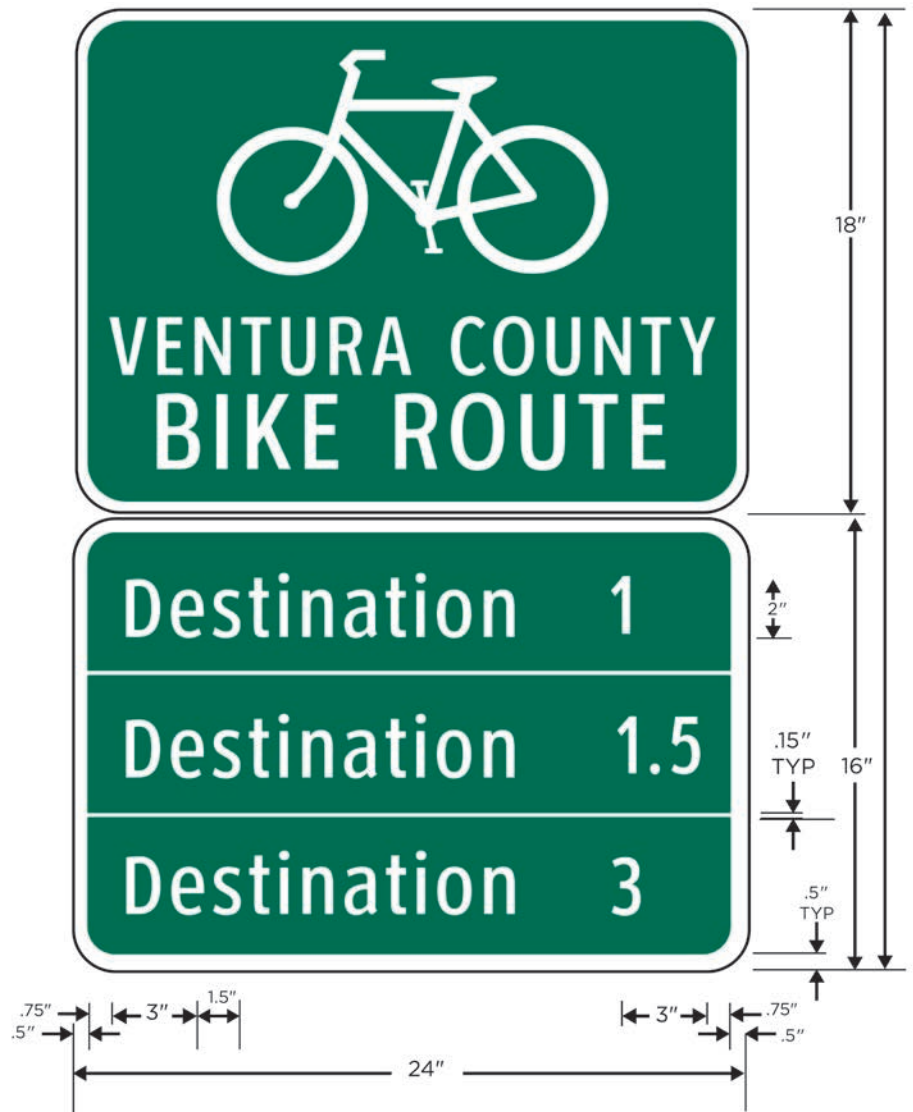


Figure 3-4: Confirmation Sign with Mileage

Notes:

- *Regional Bike Route Plaque and Destination Plaque can be fabricated as two individual signs or as one sign.*

Destination Text

- *D1-1b layout*
- *Clearview Hwy 2W Font, capital letter height 2", capitalize only first letter of each word*



Figure 3-5: Turn Sign

Notes:

Turn Plaque

- Sign to follow MUTCD standards for signs M6-1, M6-2, M5-1, or modified M7, as shown on the following page

TURN SIGN

Description

Used to clarify a specific route at changes in direction when only one route option is suggested.

Placement

Signs should be placed at turns prior to the turning action to provide cyclists advance notice of a change in direction. Turn signs may be used in conjunction with a decision sign at complex intersections warranting additional information.

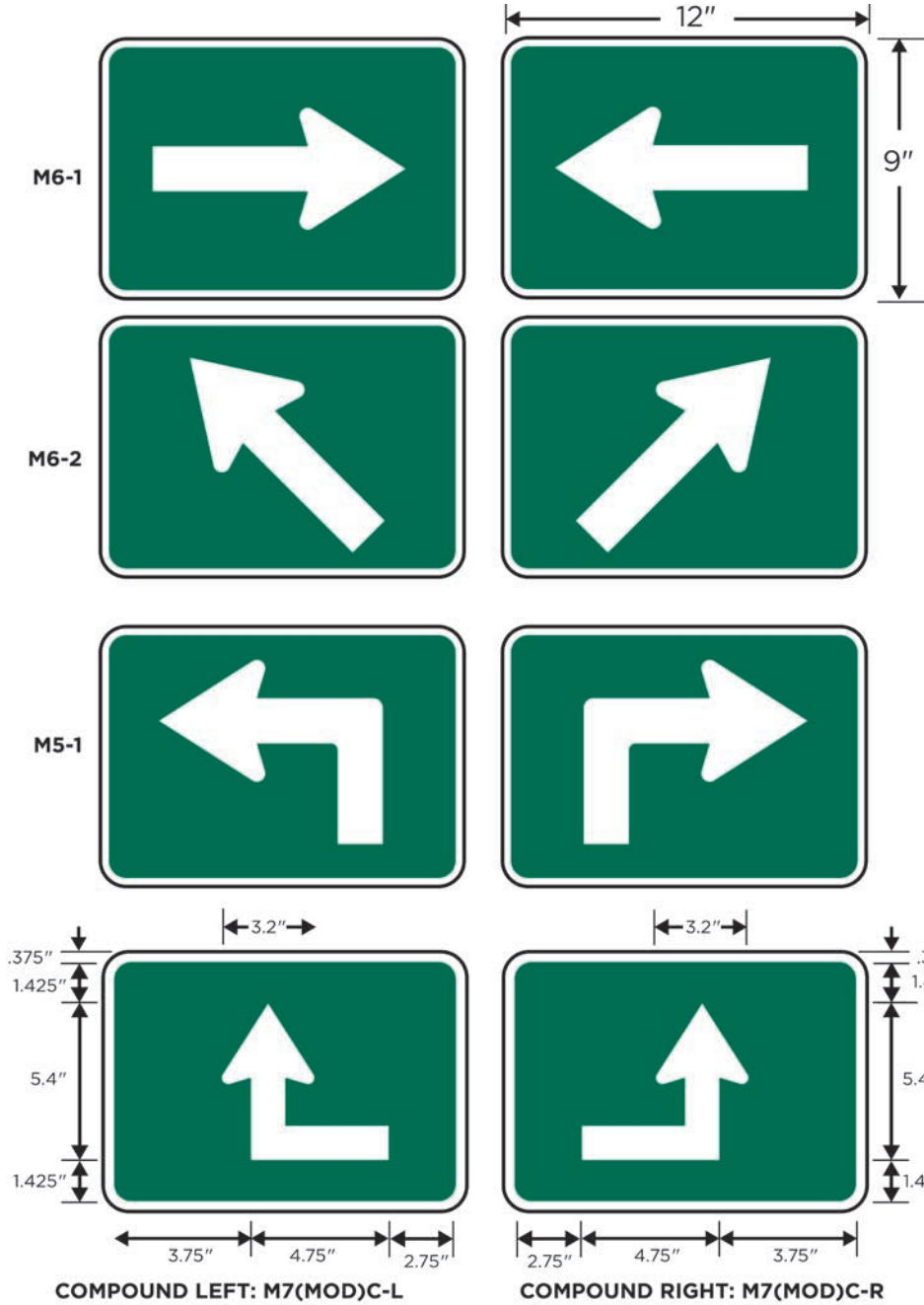
Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

TURN SIGN PLAQUES

Description

Used to clarify a specific route at changes in direction when only one route option is available. Turn Plaques follow MUTCD standards for bicycle wayfinding signs.



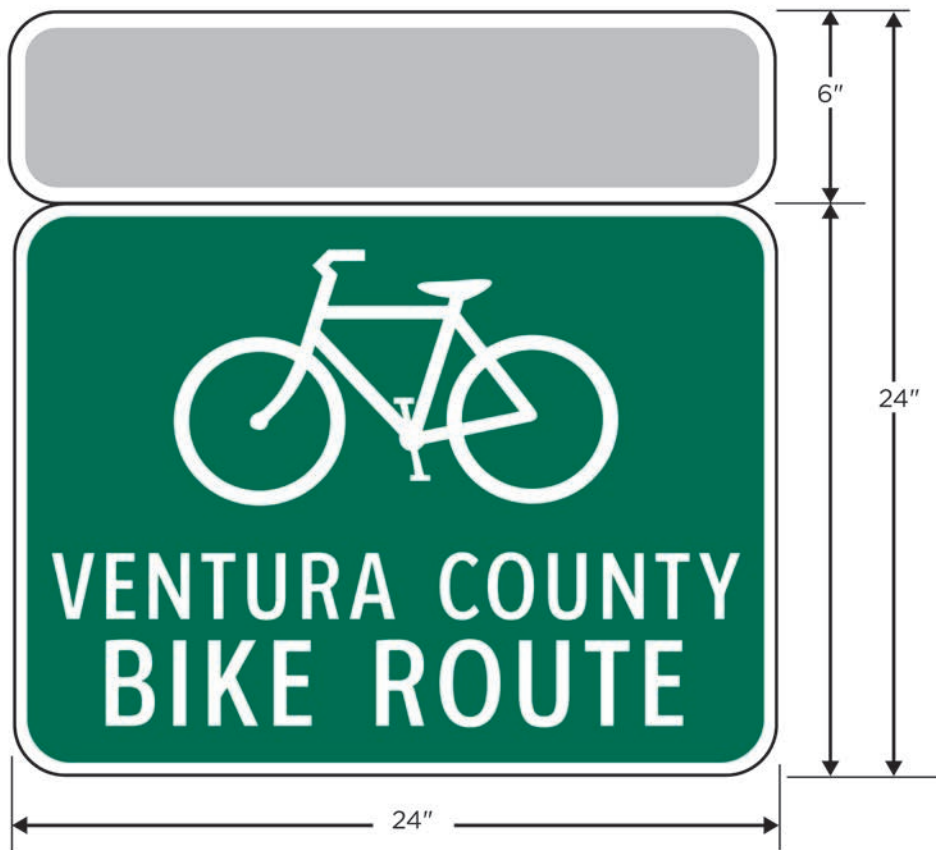


Figure 3-6: Confirmation Sign After Turn

CONFIRMATION SIGN AFTER TURN

Description

Placed after a turn movement or intersection to reassure cyclists that they are on the correct route. Regional route name may be included.

Placement

Signs should be placed 50 – 100 feet after turns. Confirmation signs are not necessary after every intersection and should be prioritized at locations where a designated route is not linear and after complex intersections. Complex intersections include those having more than four approaches, non-right angle turns, roundabouts, or in-direct routing.

Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

BRANDED SUPPLEMENTAL SIGN PLAQUES

Description

Supplemental plaques can be added to the sign assembly at the discretion of individual jurisdiction. Plaques can assist with navigation with the inclusion of the jurisdiction name, with or without a community logo, trail name, or the name of the current route.

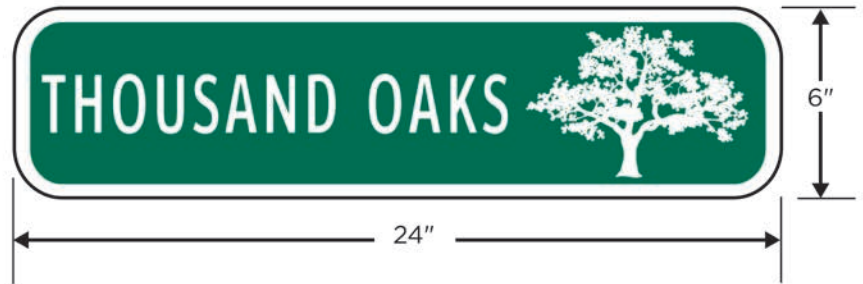
Placement

Plaques are mounted to posts above the regional bikeway signage.

Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

JURISDICTION NAME / LOGO



ROUTE NAME



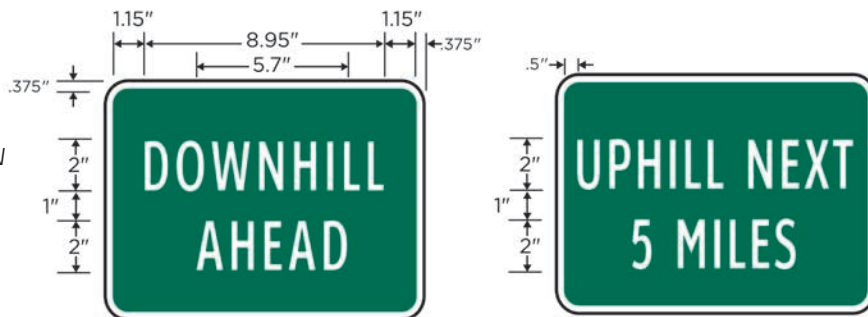
OPTION 1



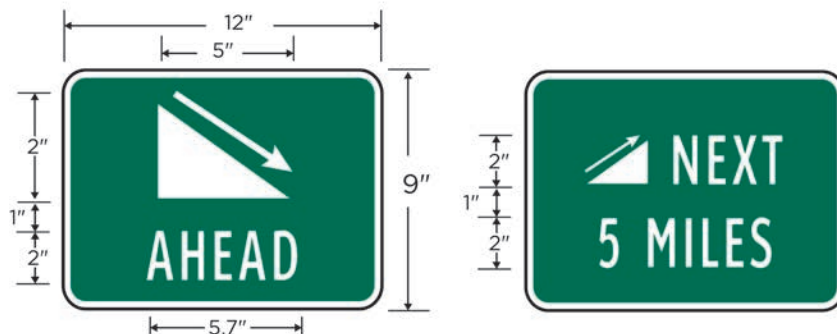
OPTION 2



OPTION 3



OPTION 4



GRADIENT SUPPLEMENTAL SIGN PLAQUES

Description

In locations with steep grade changes, local jurisdictions can choose to include supplemental gradient signage to the wayfinding sign assembly. Sign options include a modified supplemental sign based off of the branded supplemental sign, as well as a modified MUTCD turn sign size. Layout of information varies based on the gradient messaging. Option icons can provide a more visual element to the signage.

Placement

Gradient signs are to be used in conjunction with confirmation signs so that they are clearly directed to bike riders. Plaques are mounted to post below sign assembly.

Materials

- 0.080 inch high intensity prismatic aluminum sign panel
- Front of sign to be solvent print or 3M EC Film with UV Gloss Laminate
- Artwork to be solvent print or digitally imaged vinyl applied to sign
- Mount to post

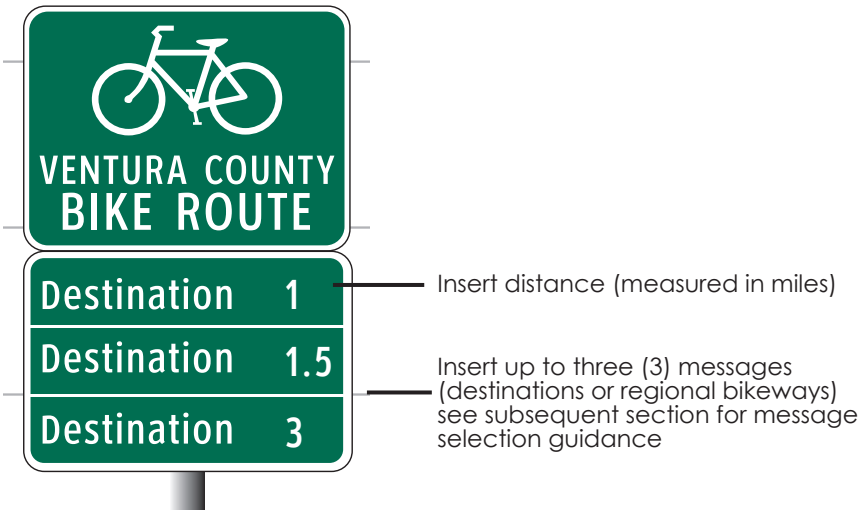
3.2 SIGN PROGRAMMING

WHAT IS SIGN PROGRAMMING?

Sign programming refers to the messages that appear on signs. Sign messages enable travelers to navigate to destinations and along regional bikeways.

Sign programming includes identifying the following unique elements for each sign:

- Ventura County route name
- Municipality the sign will be located in
- Custom messages and optionally associated time and distance information



The following guidance outlines a consistent approach to message identification based on broad identification of destinations associated with the route, selecting destinations that would appear on signs (based on signing distances outlined below), and identifying the message order (based on distance and direction). All destinations to be signed should be open and accessible to the public.

SIGNING DISTANCES

Signing distances suggest the maximum distance that destinations should appear on directional signs. This process ensures that information is spread along the journey in manageable amounts according to a bike rider's immediate needs.

Level 1 destinations provide navigational guidance to the widest spectrum of system users and thus should be prioritized on signs. As a priority, Level 1 destinations should appear on signs up to ten miles away. Level 2 destinations appeal to a broad spectrum of users and should be included on signs up to three miles away. Level 3 and 4 destinations are places of either regional or local interest and should be signed up to one mile away. Cities farther than 5 miles from a Level 1 destination may elect to sign that destination in order to provide a large scale geographic orientation.

Distances may be measured either to a destination boundary or center, as long as the approach is consistent throughout the region. Cities (Level 1 destinations) typically have a well-defined edge and thus should be measured to boundary lines. Districts (Level 2 destinations) are less defined in terms of their boundaries and thus should be measured to their centers. Level 3 and 4 destinations are typically specific addresses and thus distances should be measured to the main entrance of the specific location. If a Level 3 or 4 destination is large or has several access points, distance should be measured to the point at which the bike rider will arrive.



Tier 1 destinations provide the broadest navigational guidance such as city names and regional trail connections and should be prioritized on signs up to 5 miles away.



Tier 2 destinations include regional landmarks and attractions and can be signed up to 2 miles away.



Tier 3 destinations are places of local interest and can be signed up to one mile away.

DESTINATION ORDER

The closest destination located straight ahead should be at the top of the sign and below it the closest destinations to the left and to the right, in that order. If more than one destination is displayed in the same direction, the name of a nearer destination shall be displayed above the name of a destination that is further away.

In situations where two destinations of equal significance and distance may be properly designated and the two destinations cannot appear on the same sign, the two names may be alternated on successive signs.

SIGN ASSEMBLY

Sign assembly varies based on the amount of destinations and number of lines for each destination. Detailed layout graphics are provided on the following pages.



Figure 3-7: Sign Assembly for Decision Signs

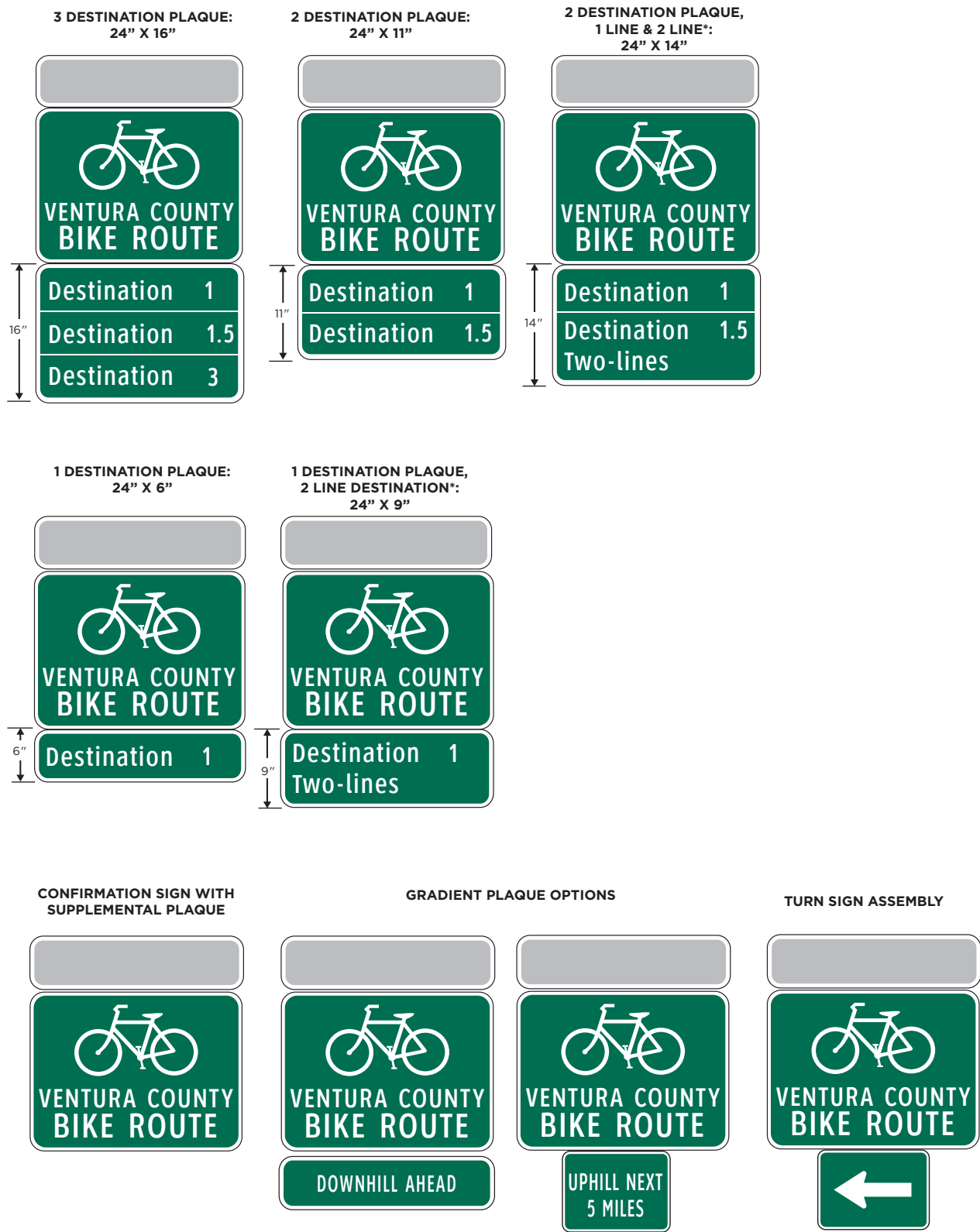


Figure 3-8: Sign Assembly for Confirmation Signs

TECHNOLOGY INTEGRATION

UPDATED VCTC WEBSITE AND ONLINE MAP

The current GoVentura website provides detailed bicycle maps of existing facilities. The website also provides links to Google Maps trip planning, as well as safety tips, trip planning, recent VCTC updates, and ways to report maintenance issues. The existing VCTC Bikeways App provides route maps with the ability to track your location, but could be updated to provide more features and local information to provide a better user experience. This Plan recommends updating the VCTC online bicycle map and the VCTC smart phone app to highlight the regional wayfinding routes. The VCTC website could also include links to external sites that provide additional information on bicycle ride route planning such as <http://cyclecalcoast.com/>.

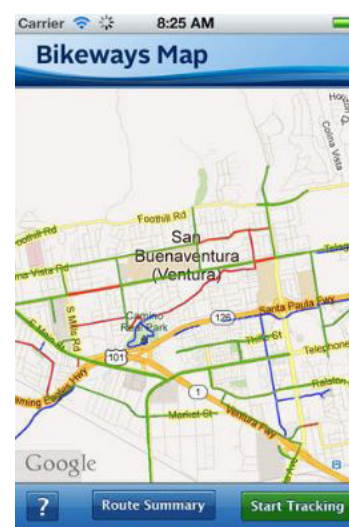
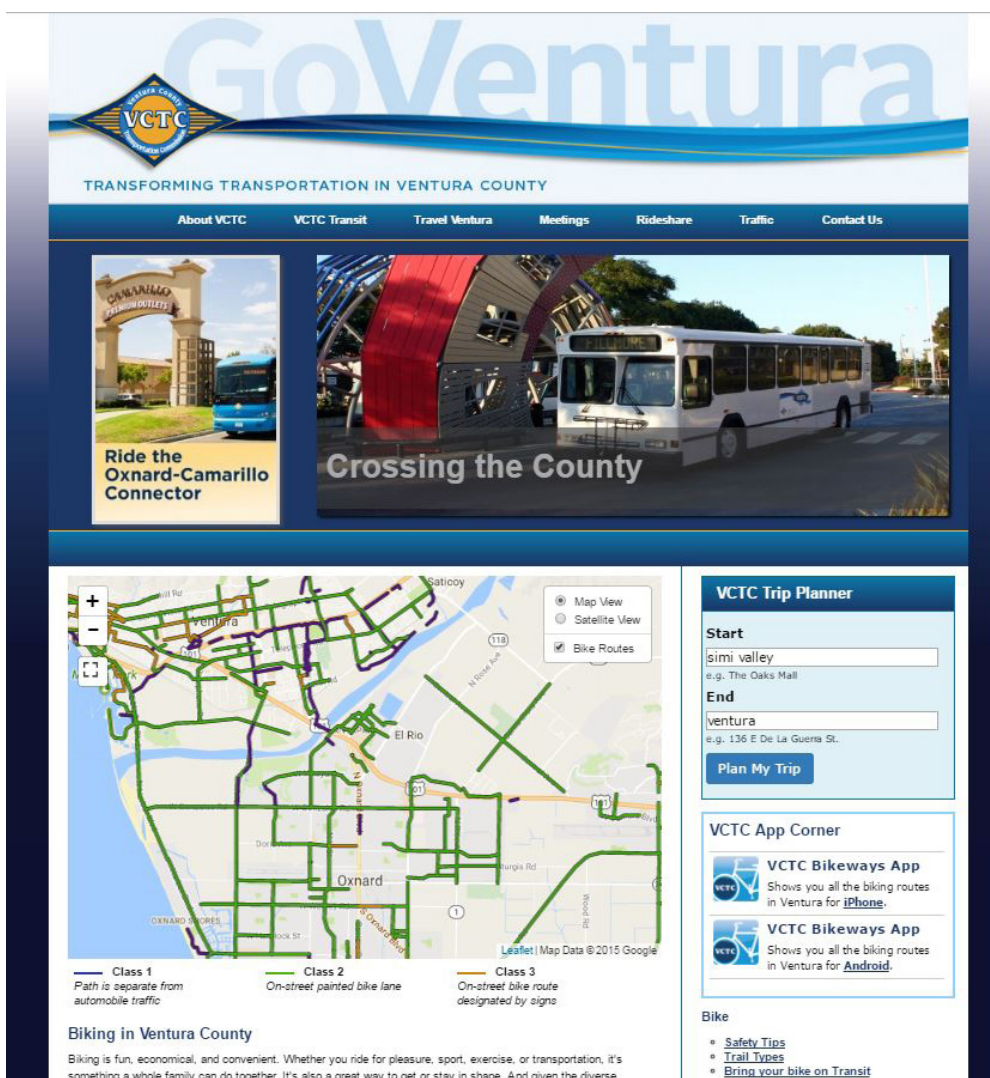


Figure 3-9: VCTC Bikeway Map and Mobile App

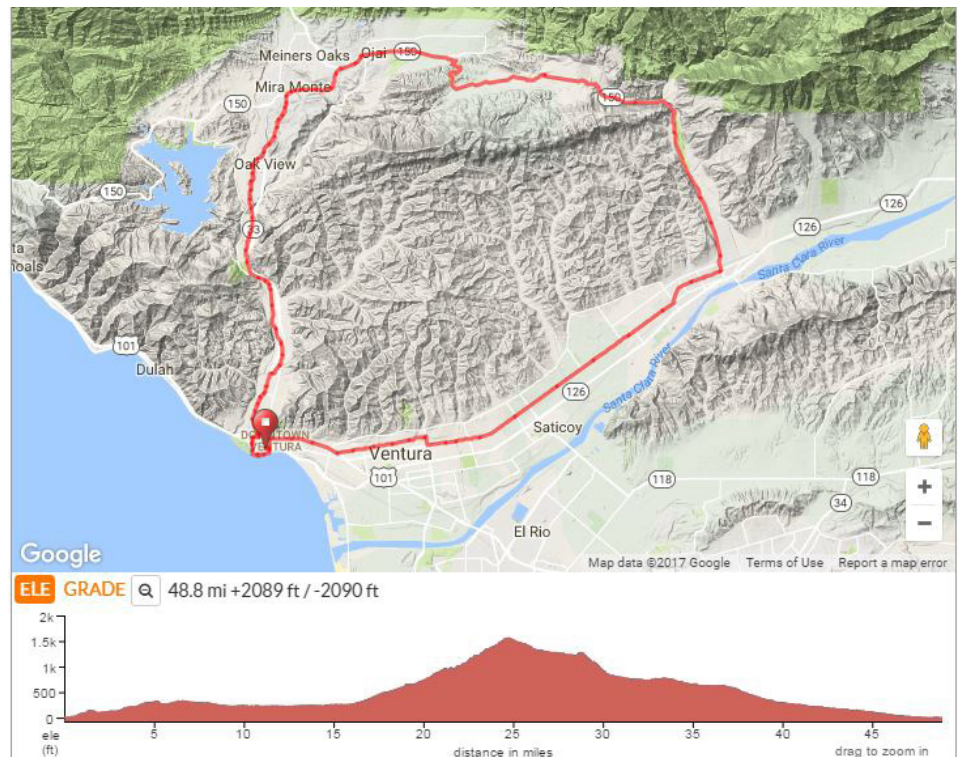
MOBILE TECHNOLOGY INTEGRATION


The VCTC Regional routes can be integrated into existing smart phone applications. Many applications and websites provide an interface where users can upload KML or GPX routes and connect to a smartphone or other GPS device to navigate while riding. These apps can provide turn by turn GPS navigation of the route, similar to navigation systems used in automotive travel. Some devices and apps can also provide offline mapping eliminating the need for an internet connection.

In addition to navigation assistance, online resources can also provide additional information on route conditions. For example, websites such as Bikemap or Ride with GPS create route profiles allowing a bike rider to assess the grade changes along the route.

Figure 3-10: The Bikemap Website and Mobile Apps Allow Users to Upload or Find Routes, and Navigate Using GPS


The image to the right is provided by Cycle Cal Coast website.






Ride and record on the go. With the Bikemap app you can take your routes with you.

[DOWNLOAD APPS](#)




Plan on your computer

Create your perfect route with Bikemap's smart routing algorithm. Drawing on more than 2.8 million user routes, Bikemap always suggests the best routes for cycling.



Ride and record on the go

Use our free Bikemap mobile app to easily track and upload your next cycling trip. You can also easily access the routes you saved in your profile with the app showing you were to go, so you'll never get lost again!



Connect your GPS devices

Export your favourite routes to your GPS device to have them available wherever you go - and import your existing routes to Bikemap to share them with the online community.



3.3 SIGN PLACEMENT

WHY PROVIDE PLACEMENT GUIDANCE?

The following sign placement guidance addresses common challenges to navigating Ventura County to ensure consistent placement throughout the county. Challenges were identified through stakeholder meetings, an online WikiMap, online survey, bike rides, and discussion with participants at outreach events. Responses reaffirmed the need for consistent wayfinding throughout Ventura County. While the scale of identified challenges range from existing bike route markers that provide minimal information to larger infrastructural barriers created by roads and tributaries, the following common navigational challenges can largely be addressed through clear and consistent wayfinding.

- Highways, tributaries, and rail lines create barriers, especially along north-south roads
- Gaps in off-street facilities create discontinuous routes and require users to be familiar with the area to navigate along on-street facilities through the gap
- Shifts in facility types (hard-surface multi-use trails to on-street facilities or narrow, natural-surface trails) and route marking creates challenges when traveling along regional routes that are comprised of several local routes
- At points where bike routes intersect, turn signs often do not include information regarding the route associated with each direction. Familiarity with the network is required to effectively navigate using the signs
- On- and off-street signage varies by municipality and is often non-existent upon crossing municipal boundaries

The Ventura County regional wayfinding signs should be located in a consistent manner across all jurisdictions. The diagram below illustrates typical placement and sequencing of on-street wayfinding signs. Decision signs (D) are located prior to an intersection of two bicycle facilities, turns in routes (T), and in relation to regional destinations. Confirmation signs (C) are provided after the turn movement, as well as periodically along the route for reassurance.

Ventura County's regional bikeway network includes a variety of on- and off-street facilities, most of which are intersected by a variety of facility types and streets. To ensure consistent placement of signs throughout the network, the subsequent placement guidance addresses typical layout patterns of wayfinding signs.

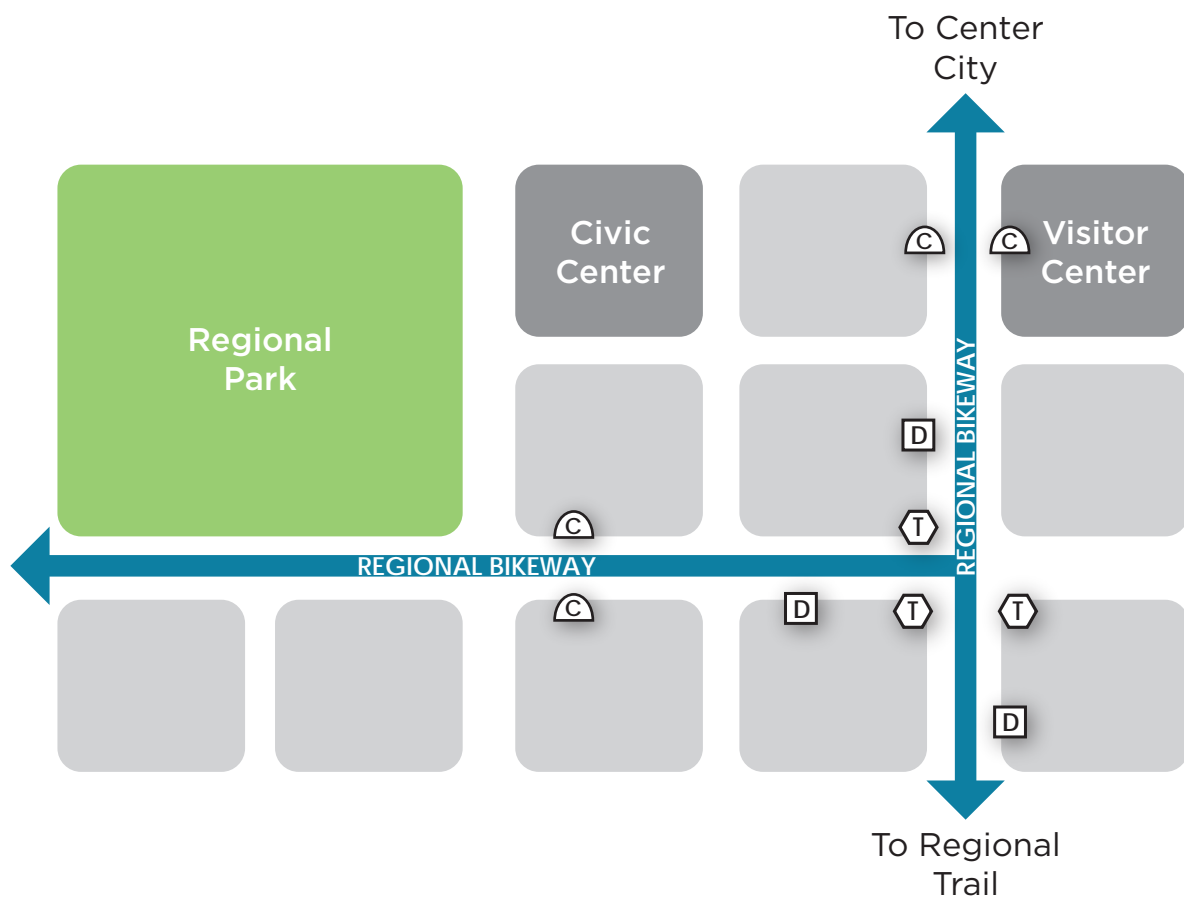


Figure 3-11: Typical sign placement

ON-STREET INTERSECTIONS

Where two regional bicycle routes end at the same intersection, only a single destination exists as the bike rider turns onto the other route. Turn signs may be placed around 100 feet from the approaching intersection. Confirmation signs with markers may be placed after the intersection to assure the bike rider they are on the correct route.

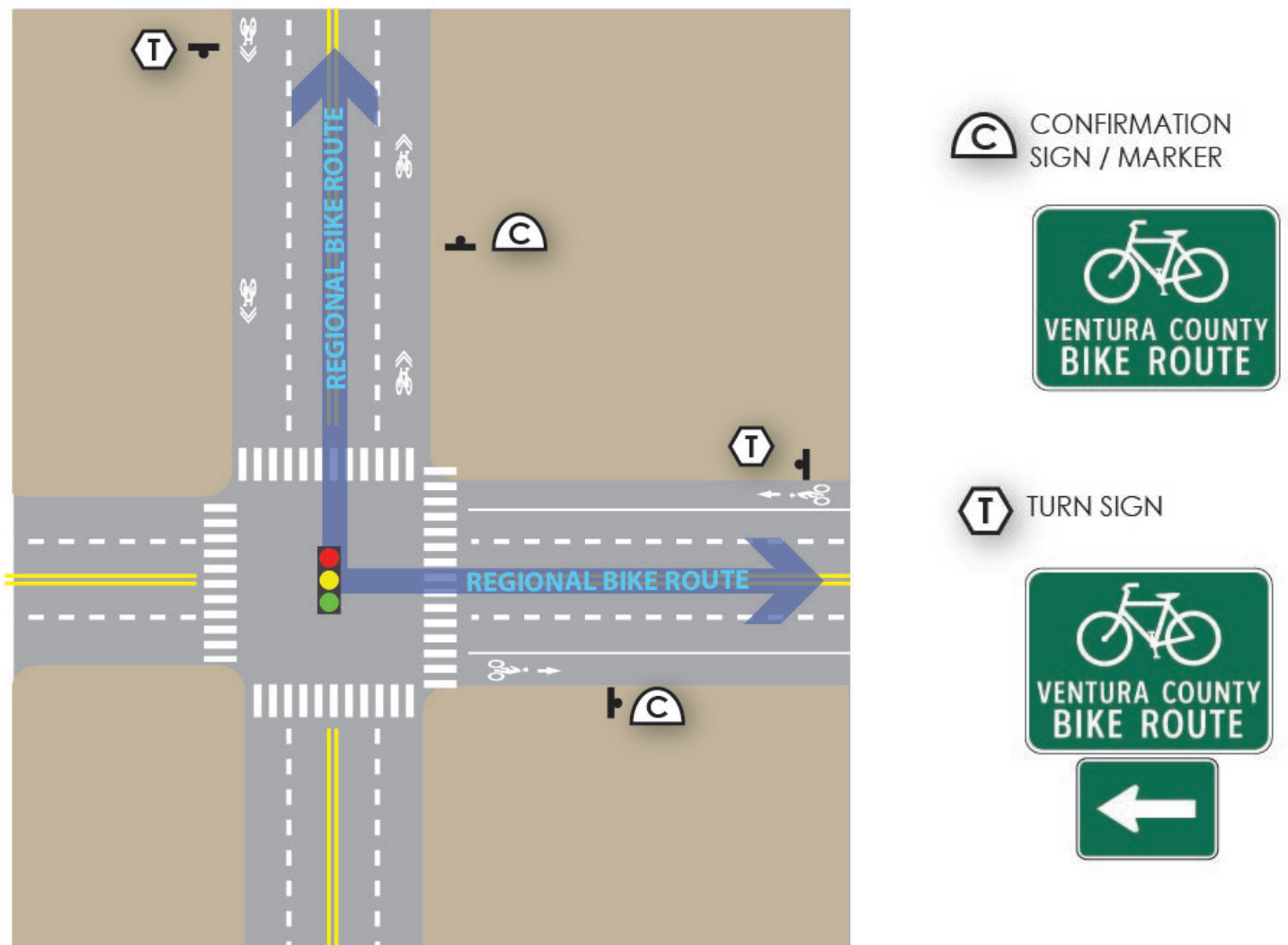


Figure 3-12: On-street Intersection Sign Placement - Two Routes Ending at their Intersection

Where two regional bicycle routes intersect and one continues while the other ends at the intersection, options for placement of decision signs exist. Decision signs may be placed around 100 feet away from the intersection to alert bike riders of upcoming destination options. Confirmation signs with markers may be placed 50 feet after the intersection to assure the rider they are on the correct route.

D DECISION
SIGN



C CONFIRMATION
SIGN / MARKER

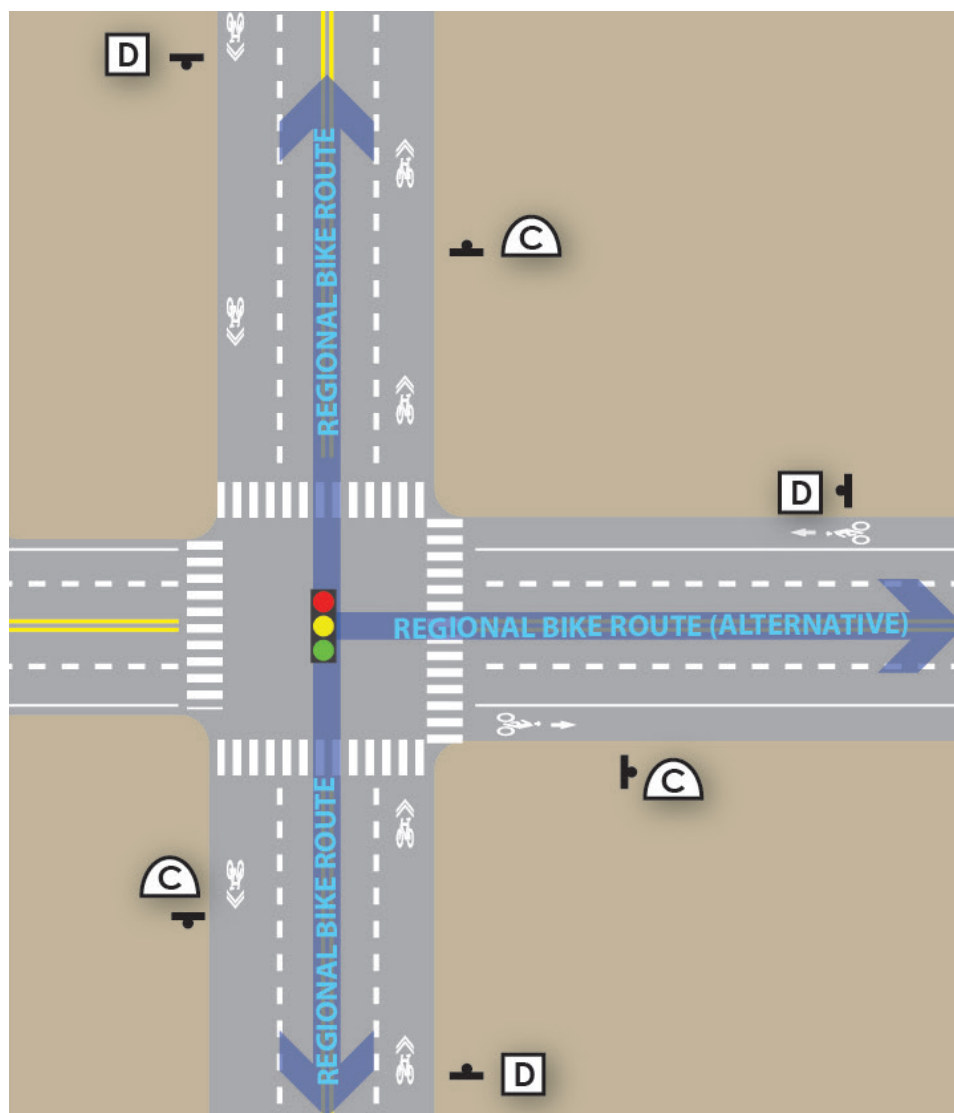


Figure 3-13: On-street Intersection Sign Placement - Two Routes, Two Destination Options

Where two regional bicycle routes intersect and both continue straight, multiple decision options exist. Decision signs may be placed around 100 feet away from the intersection to alert bike riders of upcoming destination options. Confirmation signs with markers may be placed 50 feet after the intersection to assure the rider they are on the correct route.

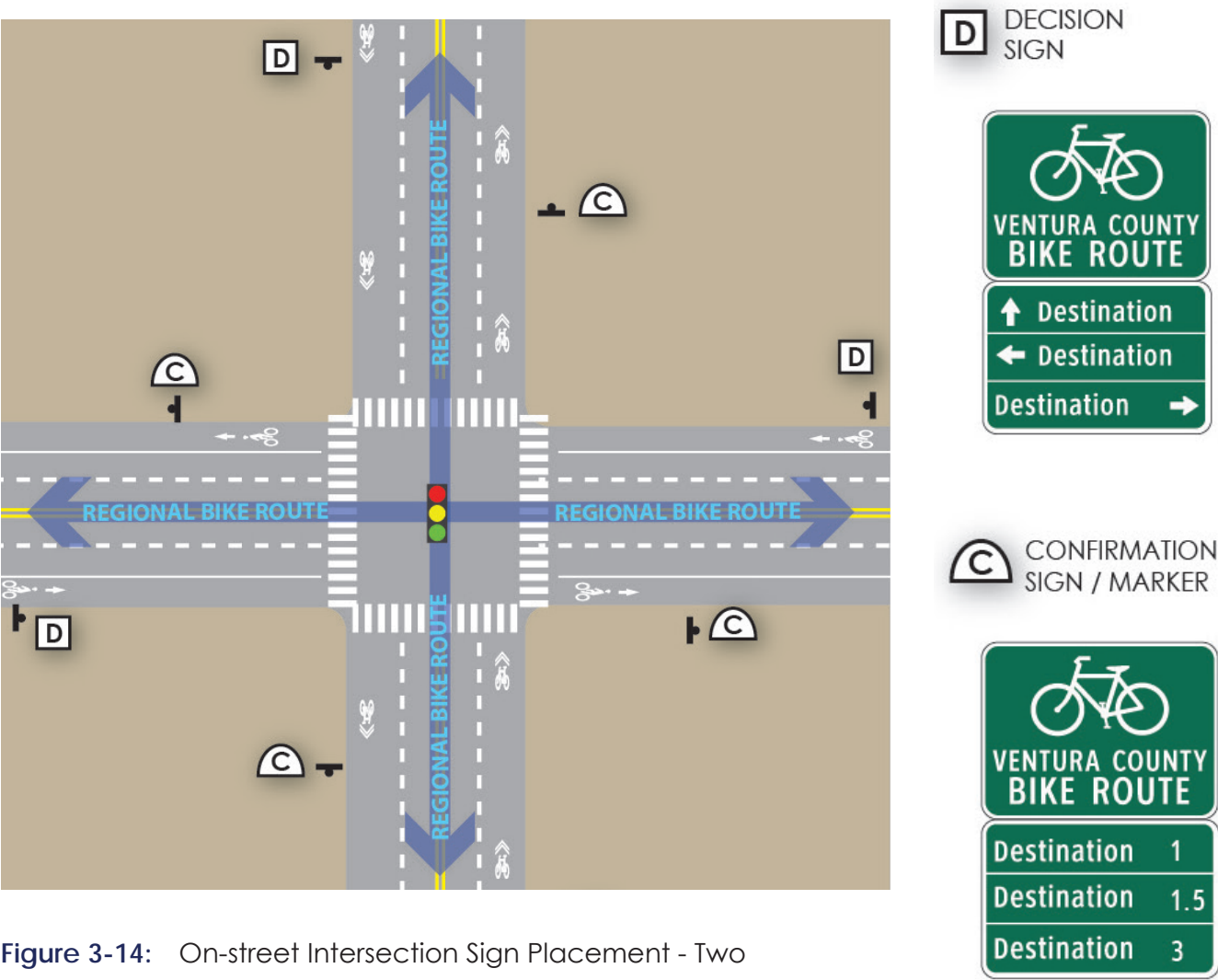


Figure 3-14: On-street Intersection Sign Placement - Two Routes, Multiple Destinations

At the Ventura County boundary, it is useful to place a decision sign to alert bike riders they are now on a regional route.

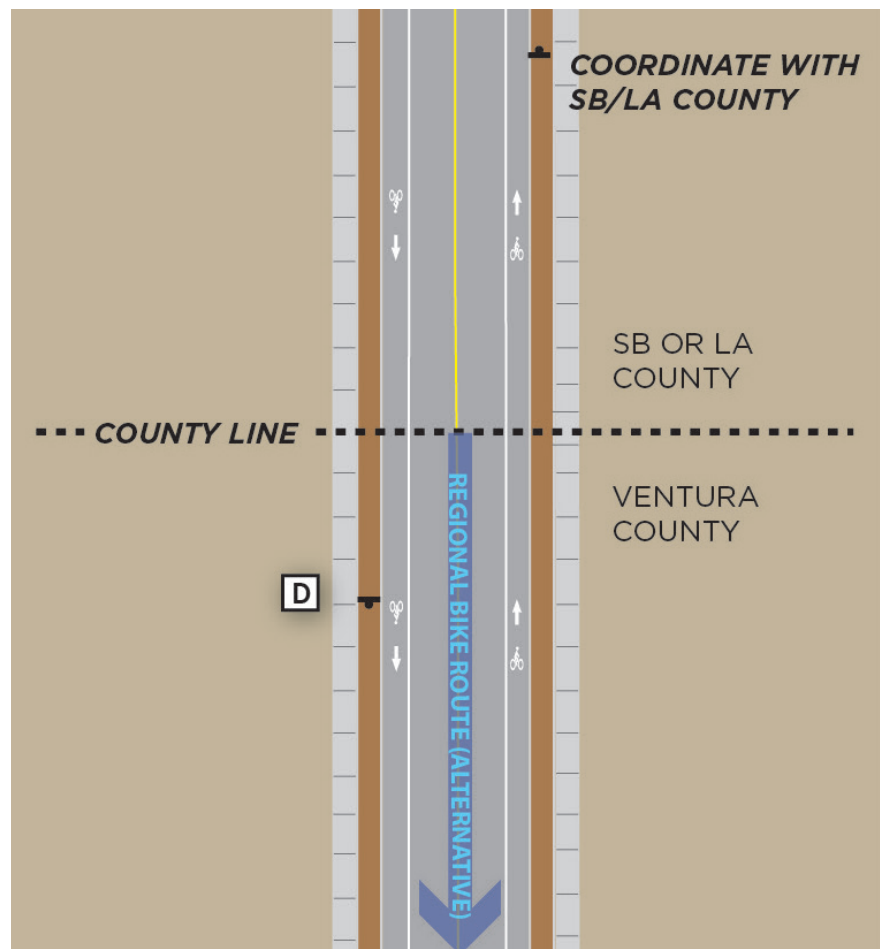


Figure 3-15: On-street Decision Signage at the County Line

Figure 3-17: On-street/off-street transition sign placement

D DECISION SIGN



C CONFIRMATION SIGN / MARKER

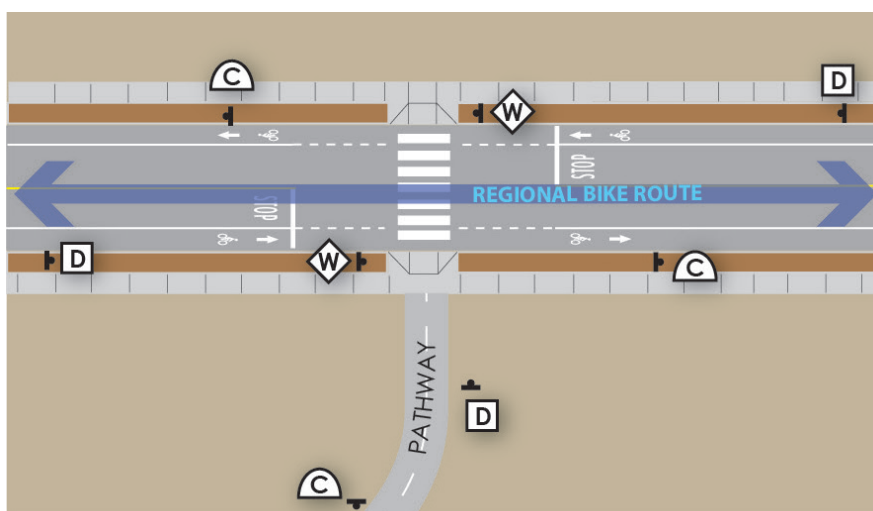


W WARNING SIGN



OFF-STREET/ON-STREET TRANSITION

When transitioning from an off-street facility to an on-street facility, it is important to advise users of their route options. In this scenario, decision/directional signs direct users to their destination choices, while confirmation signs reinforce that the rider is on a designated facility after a turn movement is made. Decision signs should also be placed at the entry to the off-street bikeway network. Once on the off-street bikeway network, confirmation signs are often used.



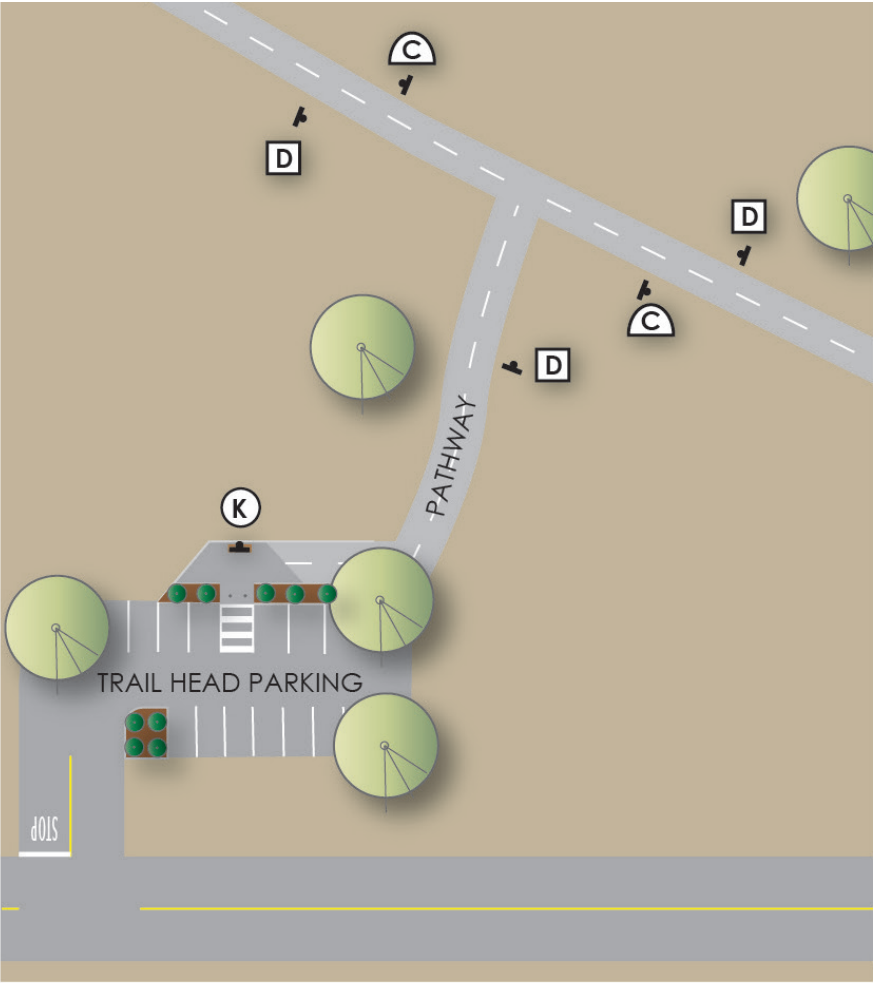
Vehicle-oriented bike crossing warning signs should be placed in advance of crosswalks. In urban areas, signs should not be placed within 4 feet of a crosswalk in order to maintain visibility of those intending to cross the roadway.

Advance warning signs are optional per the MUTCD. If they are used, their placement should provide needed time for detection, recognition, decision, and reaction.

On-street directional signs leading to the pathway network should not obscure other roadway signs including warning signs. They should be spaced according to roadway travel speeds with faster roadways warranting wider spacing. Guidelines for the placement of advance warning signs based on perception-response time may be found within Table 2C-4 of the MUTCD.

PATH-PATH INTERSECTION

When pathways intersect each other, multiple destinations are likely. Thus, decision/directional signs should be placed prior to the intersection. As an option, confirmation signs may be placed after intersections to reinforce that the rider did indeed make the correct movement.



D

DECISION
SIGN



VENTURA COUNTY
BIKE ROUTE

↑ Destination

← Destination

Destination →

C

CONFIRMATION
SIGN / MARKER



VENTURA COUNTY
BIKE ROUTE

Destination 1

Destination 1.5

Destination 3

Figure 3-18: Path-path intersection sign placement

PATHWAY BIFURCATIONS

Connections and access points between the off-street and on-street network may divide a path into two branches. At such junctions, it is important to inform bike riders of where the alternative route option goes. This may be done via decision/directional signs located at junctions.

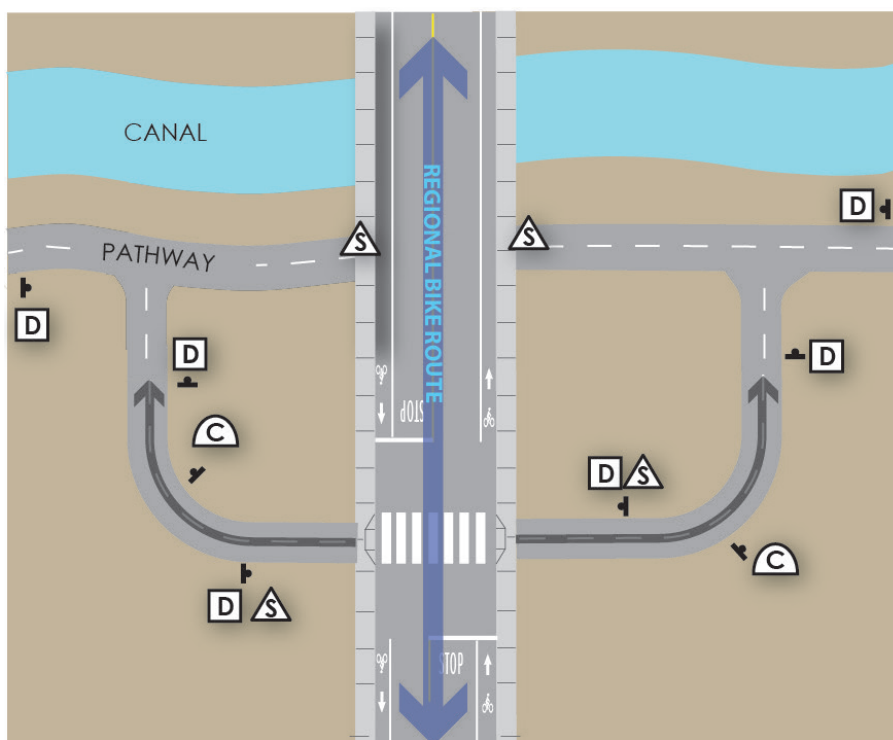
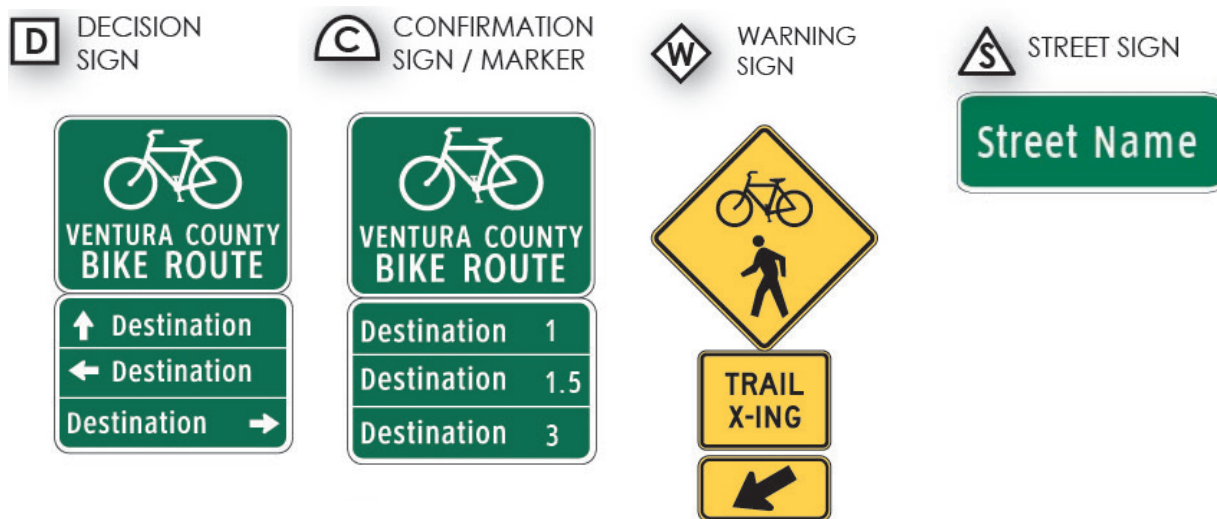
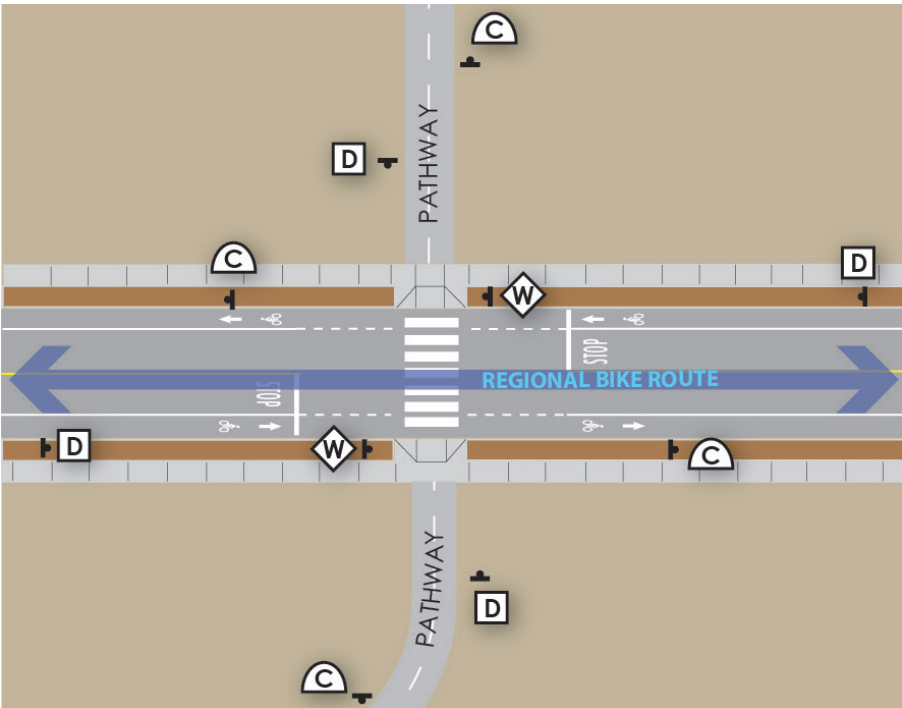


Figure 3-19: Pathway Bifurcations Sign Placement



PATH-ROADWAY INTERSECTION

Path users should be directed to cross roads where improvements such as curb ramps, crosswalk striping, and warning signs exists. If the cross street has on-street bike facilities, a decision/directional sign should be placed prior to the intersection to inform bike riders of their route options. If a bike-oriented stop sign is present, it should not be obscured by the wayfinding sign. Confirmation signs may optionally be placed at path entries to assure riders that they are on a bike facility.



Direct travel via mid-block roadway crossings is often not provided. Instead, travelers are expected to divert to the nearest improved or signalized intersection. In this scenario, turn signs should be used to direct cyclists to the intersection with safety improvements.

Figure 3-20: Path-Roadway Intersection Sign Placement

D DECISION
SIGN



C CONFIRMATION
SIGN / MARKER



W WARNING
SIGN





3.4 IMPLEMENTATION

FINAL DESIGN AND FABRICATION

Based on the content of this wayfinding plan, wayfinding sign designs within this document may be used as templates for in-house fabrication or for bidding the work to independent contractors.

A sign schedule describing each wayfinding sign in relation to placement, orientation, messaging, directional arrows, and distance/time or elevation measurements to be placed on each individual sign will need to be determined for sign implementation. Note that placement recommendations generated through the master plan process should be refined during final design. Final sign placement should be field verified to ensure that conflicts are not present and that each location is in compliance with applicable laws and authorities. Verification of placement within the public right-of-way or negotiated easement need also occur.

Fabricators may be required to produce shop drawings indicating methods of assembly. Shop drawings should be routed through the appropriate agency departments for approvals. The production of full-scale mock-ups of sign elements may be required as part of the fabrication contract.

As part of the contractor selection process, requirements may be outlined to assure a quality product. For more complex elements, fabricators should have at least five years of experience in the field completing projects of similar scope. References should be contacted to verify quality of products during the fabrication and installation phase, as well as in regard to ongoing maintenance support.

PHASE I SIGN IMPLEMENTATION

To move the plan forward, 18 intersections were identified for Phase I regional wayfinding sign installation. Sign placement plans detailing sign locations and sign scheduled were developed and provided to the relevant jurisdiction for installation. The Phase I locations were selected to provide geographical distribution across the County and at locations of two priority routes.

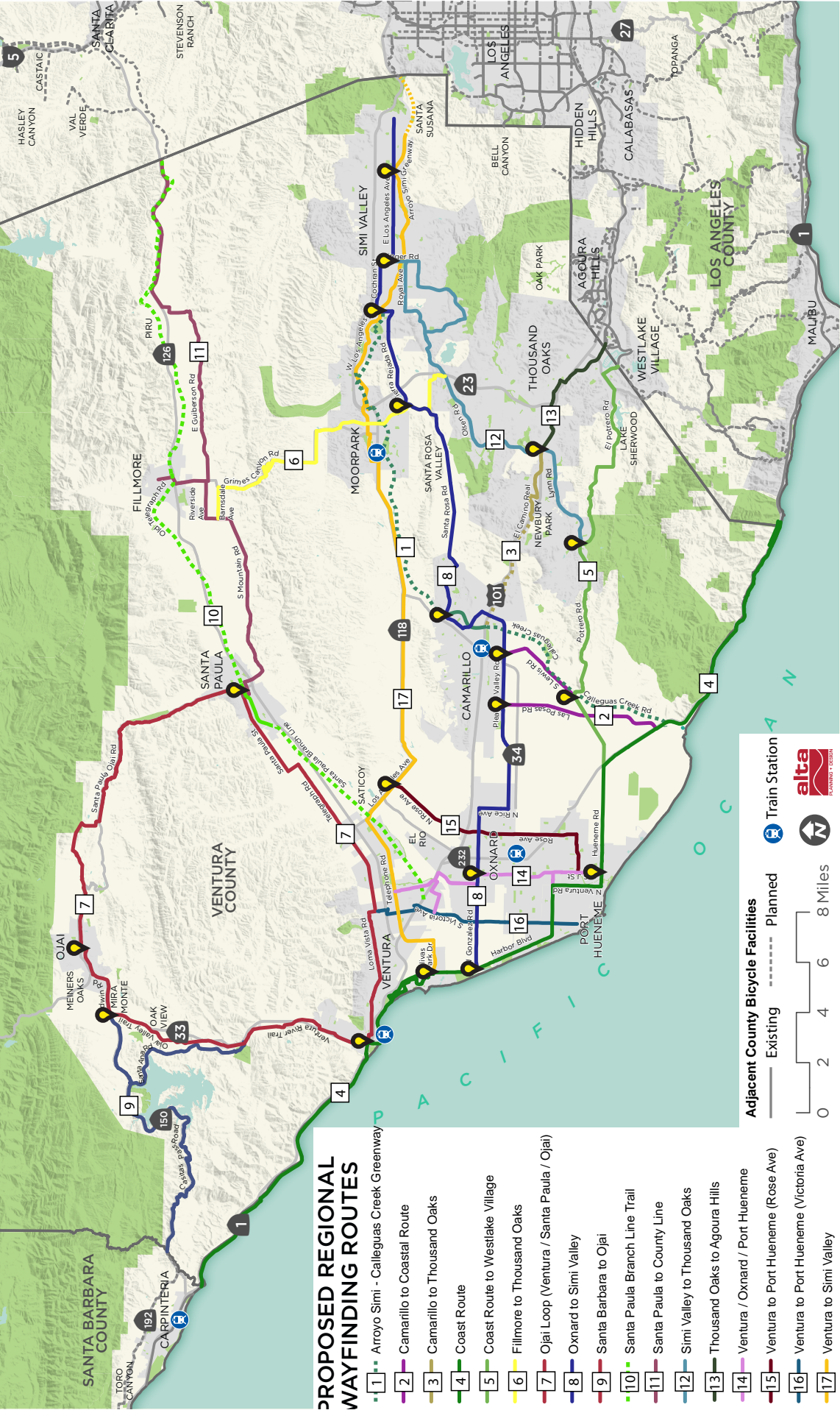
OPERATIONS & MAINTENANCE

Operations and maintenance refers to specific day-to-day tasks and programs performed to assure resources and facilities are kept in good usable condition. This begins with sound design, durable components, and a comprehensive management plan. A management plan should be embraced by the entities responsible for maintaining the bikeway and wayfinding network, at the beginning of the implementation process. In addition, community groups, residents, business owners, developers and other stakeholders should be engaged in the long term stewardship of the resources preserved and enhanced by this plan as discussed later in this chapter.

GUIDING PRINCIPLES FOR EFFECTIVE OPERATIONS AND MAINTENANCE

The Ventura County system should be viewed and maintained as a public resource. Indeed it will become infrastructure similar to the street system or utility networks, serving the community for generations to come. The following guiding principles will help assure the preservation of a first class system:

- Good maintenance begins with sound planning and design
- Foremost, protect life, property and the environment
- Promote and maintain a quality outdoor recreation and transportation experience
- Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals
- Maintain quality control and conduct regular inspections



2-10-17

Figure 3-21: Ventura County Phase I Sign Implementation Locations

- Include field crews, police and fire/rescue personnel in both the design review and on-going management process
- Maintain an effective, responsive public feedback system and promote public participation
- Be a good neighbor to adjacent properties
- Operate a cost-effective program with sustainable funding sources

MANAGING THE SYSTEM

Developing a durable wayfinding system is only half the battle. In addition, wayfinding programs must be managed. There are three key management areas that communities should consider:

Maintenance: From regular cleaning to repairs to replacement, maintenance is an ongoing issue that never goes away throughout the life of the program. Maintenance includes periodic cleaning as well as replacement of damaged elements.

Change: Managing the addition or subtraction of destinations as well as expansion into new areas.

Removal: Managing the streetscape environment including the removal of unauthorized signs and obsolete elements.

Finding groups that can consistently maintain and manage wayfinding programs is difficult. Costs can often range from 7 to 15% of total capital expenditures on a yearly basis, and people must be found that can dedicate their time to ongoing management. While larger cities have been leaving this task up to special services districts, smaller cities and communities must often rely both on city managers and contracts with private companies. When it comes to wayfinding management clear guidelines are crucial to ongoing success. Many successful programs post their guidelines in public places to ensure that the public understands which entities are responsible for program management.

ACTIVITY	0-4 YEARS	5-9 YEARS	10-15+ YEARS	RESPONSIBLE AGENCY
Management & Administration	During installation consider weekly coordination and inspection. Transition to monthly monitoring after installation.	As needed coordination between managing agency (TBD) and sign fabricator. As needed monitoring based on citizen feedback or safety issues.	As needed coordination between managing agency (TBD) and sign fabricator. As needed monitoring based on citizen feedback or safety issues.	TBD
Planning & Design	Annual coordination to assess new trail development and destinations.	Evaluate efficacy of the wayfinding system and identify updates. During this period, updates may be needed.	If the City Wayfinding Plan has not been updated at this point, a major update is recommended. Engage an outside consultant to review and revise wayfinding signage strategy.	Advisory Committee
Inspections	Monthly	Monthly	Monthly	Local jurisdiction or land manager
Vandalism	Annual repair and cleaning. Contractor to provide additional guidance.	Full sign or parts replacement as needed. Contractor to provide additional guidance.	Full sign or parts replacement as needed. Contractor to provide additional guidance.	TBD
Cleaning	Annually	Annually	Annually	TBD
Materials	Wear and tear maintenance anticipated.	General maintenance, repair and replacement anticipated.	General maintenance, repair and replacement anticipated.	TBD
Fasteners & Brackets	Inspect and maintain as needed.	Maintenance and repairs increase in this period. Complete an inventory based on maintenance schedule and repairs. Inspect welds, fasteners and structural integrity quarterly.	Lifespan/lifecycle of fasteners and brackets is estimated 10-15 years. Replace after this point.	TBD

Figure 3-22: A Description of Recommended Maintenance Procedures

MAINTENANCE RECOMMENDATIONS

Maintaining programs over time requires a great deal of diligence, as well as an understanding that maintenance should be incorporated into planning and design process, to ensure effective program maintenance when the program is implemented.

Each organization that uses this Manual to create and implement signage will have its own practices and protocols for maintaining such products. Included below is a general outline for recommended maintenance that Manual Users may find helpful.

Bimonthly (March – November) 1. Order all new or replacement signage components. 2. Remove unauthorized signage. 3. Inspect all existing signage for wear and vandalism. 4. Repair or replace damaged signage.

Semi-Annually (April and October) 1. Update orientation and directional signage with respect to changes to nomenclature or circulation theory. 2. Review wayfinding standards to evaluate any needs identified for adjusting signage standards. 3. Review existing or planned projects to expand or upgrade signage and confirm that allowances are made to add or modify components as required.

COSTS

Table 3-1: Sign Assembly Costs

Description	Unit	Unit Cost ¹
Regional Bikeway Sign / Confirmation Sign (Modified D11-1)	EA	\$200.00
Decision Sign (2) 24"x18"	EA	\$425.00
Confirmation Sign with Milage (2) 24"x18"	EA	\$425.00
Turn Sign	EA	\$260.00
Branded Supplemental Plaque (1) 6"x24"	EA	\$90.00

¹Cost of sign assumes 0.125 in aluminum panel with reflective vinyl fabricated by contractor. Cost does not include installation.

Table 3-2: Costs per Four-Way Intersection

Bike Route to Bike Route (4-way intersection)	Signs per Intersection	Cost ²
Decision and confirmation sign plaques	8 @ \$425	\$3,400
Supplemental plaques	8 @ \$90	\$720
Installation on new post	8 @ \$800	\$6,400

²Cost of sign assumes fabrication and installation by contractor.

FUNDING OPPORTUNITIES

Funding for bicycle projects may come from a variety of sources including matching grants, sales tax or other taxes, bond measures, or public/private partnerships. This section identifies sources of funding for planning, design, implementation, and maintenance of bicycle projects, including wayfinding improvements throughout Ventura County. The descriptions are intended to provide an overview of available options and do not represent a comprehensive list. It should be noted that this section reflects the funding available at the time of writing. The funding amounts, fund cycles, and even the programs themselves are susceptible to change without notice.

FEDERAL FUNDING

Federal transportation funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations, independent from state budgets. Federal funding typically requires a local match of 20%, although there are sometimes exceptions, such as the 2009 American Recovery and Reinvestment Act stimulus funds, which did not require a match.

The California Department of Transportation (Caltrans) and Ventura County Transportation Commission (VCTC) administer most federal monies. Federal funding is intended for capital improvements, and projects must relate to the surface transportation system. Most, but not all, of these programs are oriented toward transportation, (as opposed to recreation), with an emphasis on reducing auto trips and providing inter-modal connections.

Most of the federal funding programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. However, it should be noted that, in addition to stand alone projects, the Federal Highway Administration (FHWA) encourages the construction of bicycle improvements as an incidental element of larger ongoing projects, consistent with its 2010 policy statement on bicycle and pedestrian accommodation. It is important to be in substantial conformance with the MUTCD standards in order to retain eligibility for federally available transportation funding resources.

STATE SOURCES

Active Transportation Program

The California State Legislature has consolidated a number of programs centered on active transportation into a single program. The resulting Active Transportation Program (ATP) consolidated the federally funded programs (MAP-21 and FAST Act), Bicycle Transportation Account, the Safe Routes to Schools Program, and the Recreational Trails Program. The ATP's authorizing legislation (signed into law by the Governor on September 26, 2013) also includes placeholder language to allow the ATP to receive funding from the newly established Cap-and-Trade Program in the future.

The Statewide Competitive ATP has \$180 million available statewide for the 2014/2015 and 2015/2016 fiscal cycles. The Regional Competitive ATP will have additional funding available for the SCAG region in the 2014/2015 and 2015/2016 fiscal cycles.

The California Transportation Commission writes guidelines and allocates funds for the ATP, while the ATP will be administered by the Caltrans Division of Local Assistance. Goals of the ATP are currently defined as the following:

- Increasing the proportion of trips accomplished by biking and walking;
- Increasing safety and mobility for active transportation users;
- Advancing active transportation efforts of regional agencies to achieve the greenhouse gas reduction goals;
- Enhancing public health;
- Ensuring that disadvantaged communities fully share in the benefit of the program; and,
- Providing a broad spectrum of projects to benefit many types of active transportation users.

More information: www.dot.ca.gov/hq/LocalPrograms/atp/index.html

LOCAL SOURCES

Transportation Development Act (TDA)

As allowed under the TDA, VCTC takes two percent of Local Transportation Funds (LTF) and sets them aside for local pedestrian and bicycle projects. The funds are distributed through a competitive process but are often easier to navigate than federal and state processes.

PRIVATE FOUNDATIONS

Private foundations are an increasingly important source of funds for bicycle and pedestrian planning and implementation. For more information on private foundations, including an extensive list of national foundations visit: <http://www.foundationcenter.org/>

CREATIVE TAX METHODS

Often referred to as hot funds, creative tax methods are an efficient way to collect money from travelers ensuring that it is regenerated back into your city. Providing a creative and engaging wayfinding system will allow travelers to know where they are going and how they are getting to desired locations. This will also allow tourist to become more engaged and encourage them to spend more time and money in prime tourist destinations. This strategy will result in additional revenue for your city.

CIVIC CROWD FUNDING

Unlike private funding, civic crowd funding is dedicated to a specific community, economic, or civic development project. Targeting well known citizens or groups that have the capabilities and interest in funding city projects should be considered. Most citizens want to ensure that their city looks great and may assist in gathering needed donations. Websites like www.gofundme.com are a great and easy online solution to help the public promote and donate to wayfinding projects or city beautification.

COMMUNITY PARTNERS

A typical way to create great momentum is to work with other businesses or agencies that have an interest in cities' wayfinding systems. This also helps to identify available funding such as a local bike shop having interest in assisting with the funding for a new bike path. Reaching out to them and offering to promote their brand via signage in exchange for their assistance is a valuable strategy.

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VENTURA COUNTY REGIONAL BIKEWAY WAYFINDING PLAN

APPENDIX

A: PREVIOUS PLANNING EFFORTS

PREVIOUS BICYCLE & WAYFINDING PLANS

Local and regional plans were reviewed to inform the development of the Ventura County Bicycle Wayfinding Master Plan. These relevant plans are listed in Table A-1.

Table A-1: Relevant Local and Regional Plans

Plan Name	Date Last Updated	Description
City of Ventura Bicycle Master Plan	May 2011	The City of Ventura BMP is a 20-year long range bike plan. Its goal is to encourage improvements to the City's bicycle facilities infrastructure while striving to improve the use and recognition of the bicycle as a viable commuter vehicle.
City of Oxnard Bicycle & Pedestrian Facilities Master Plan	February 2011	The Bicycle and Pedestrian Facilities Master Plan is for all residents and visitors of Oxnard who desire to walk or bike for purposes of recreation, commuting, or physical health. The Oxnard BMP intends to make bicycling and walking integral modes of transportation in Oxnard through a safe, interconnected system of bicycle and pedestrian facilities.
City of Thousand Oaks Bicycle Facilities Master Plan	November 2010	The City of Thousand Oaks BMP is a 20-year long range bike plan for the City. Its goal is to encourage the development of an integrated bicycle system throughout the City with connections to other regional bike systems.
Simi Valley Bicycle Master Plan	December 2008	The main purpose of the Simi Valley BMP is to encourage the development of an integrated bicycle system throughout Simi Valley with connections to other regional bike systems.
Ventura Countywide Bicycle Master Plan	October 2007	The Ventura Countywide BMP aims to: <ul style="list-style-type: none"> • Expand and optimize Ventura County's Bike Facilities • Plan and Design for the Needs of Bicyclists • Promote Bicycle Safety and Increased Bicycling through Education, Encouragement, and Enforcement Activities • Provide for Regular Maintenance of the Bikeway Network • Facilitate Coordination and Cooperation in Developing the Countywide Bike Network • Implement the BMP

City of Fillmore Bicycle Transportation Plan	February 2005	The City of Fillmore's Bicycle Transportation Plan aims to connect the residential neighborhoods and activity centers with the City and identifies programs to serve the needs of cyclists in the City, The purpose is to encourage the development of an integrated bike system throughout Fillmore with connections to regional bike networks.
City of Camarillo Bikeway Master Plan	November 2003	The City of Camarillo's BMP aims to provide a citywide system of safe, efficient, and attractive bicycle routes for commuter, school, and recreational use.
City of Ojai Bicycle Master Plan	February 1999	The proposed plan includes a network of bike routes and lanes creating a grid network around the City.

B: PUBLIC OUTREACH

B-1 Outreach events

BICYCLE RIDES

In April and May 2016, 29 people participated in bicycle rides to assess wayfinding needs and placement ideas throughout the County. The rides took place in five areas: Ventura West Side, Santa Paula, Ventura-Oxnard-Port Hueneme, Simi Valley, and Camarillo.

VENTURA WEST SIDE - APRIL 11, 2016

Morning Ride Notes

Ojai Valley Trail

- Improve visibility of access points
- The City is working on a new access point to the Ojai Valley Trail south of Sheridan Way Elementary School
- Local access from West Park, no regional signs needed in this park

Main St

- Main Street and Olive Street. Key connection point for regional routes, challenging intersection for all users. Bicyclists riding on wrong side of the street to get to the Ojai Valley Trail. City to install wrong way bike riding signs on eastbound Main Street

Santa Clara Street

- Downtown route preferred on Santa Clara Street over Main Street
- California Street to be the connector to be the connector to the Coast Route from Downtown Ventura. Bike-Pedestrian barrier/path under construction on California Street bridge. Mapboard/ Kiosk at Tourist Center on Santa Clara Street and California Street
- Intersection improvements needed at Main Street and Santa Clara Street. Confusing left turn movements for all modes
- San Nicholas Street could be an alternative to Santa Clara

Street. The City envisions San Nicholas Street as a future bike boulevard

Main Street

- Lack of bike lane on Main between Seward and Loma Vista

Loma Vista

- Heritage Valley/Piru connection. Transition from Telegraph to Loma Vista at Victoria

Thompson Blvd

- Avoid Thompson Boulevard for regional routes due to high traffic and speeds and lack of dedicated space for bicyclists

Afternoon Ride Notes

- Kiosk location at parking lot just east of the Ojai Freeway. Regional access point and parking.

Coast Route

- Alternatives:
- Shared-use Path – Scenic / All ages route
- Main to Olive to Fig/California to Harbor – Commuter/ Downtown connections
- Main to Olive to one-way alley behind fairgrounds. Local opportunities to improve alley for two-way bike access
- Additional signs needed through promenade and parking lots to identify bike path
- Improve visibility of access points: Santa Clara Street – California Street – Harbor Street and Olive Street – Drive – Harbor Street

Figure B-1: Photos from the Ventura West Side Bike Ride



Figure B-2: Ventura West Side Morning Ride Route



Figure B-3: Ventura West Side Afternoon Ride Route



SANTA PAULA - APRIL 21, 2016

Morning Ride Notes

Foothill Road

- Not a good option for Ventura / Santa Paula / Ojai (loop) Route because of no shoulder and high speeds

Telegraph Road

- Wide paved shoulder and low traffic volume
- Preferred alternative for Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (E-W) Routes. Good roadway to consolidate both routes

Cummings Road

- No shoulder but low traffic volume
- Preferred connector between Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (East-West) Routes

Briggs Road

- Potential connector between Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (East-West) Routes
- It is a through road, continuing south of Telegraph Road
- Access to Briggs School

Santa Paula Street

- Preferred alternative for Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (East-West) Routes through Santa Paula
- Existing bike lane, but some segments need maintenance

Main Street

- Confusing and dangerous intersection at Peck Road - five legged intersection with no bicycle detection
- No bike lane

Santa Paula Branchline Trail

- Not a continuous trail - wooden barriers at every intersection to prevent through riding
- Lacks of designated lanes for bikes and pedestrians

Afternoon Ride Notes

12th Street

- Challenging intersection at 126 Freeway
- Mountain Road (Southbound continuation of 12th Street) narrow stretch over the river but widens when the bridge ends

8th Street

- Preferred Downtown connector for Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (East-West) Routes

10th Street

- Potential downtown connector for Ventura / Santa Paula / Ojai (loop) and Heritage Valley Ventura / Piru (East-West) Routes. High traffic volume and inconvenient railroad crossing angle for bike riders

Santa Paula Ojai Rd

- Five legged intersection at Santa Paula Street - not dangerous but could be improved
- Existing bike lane

Figure B-4: Photos from the Santa Paula Bike Ride

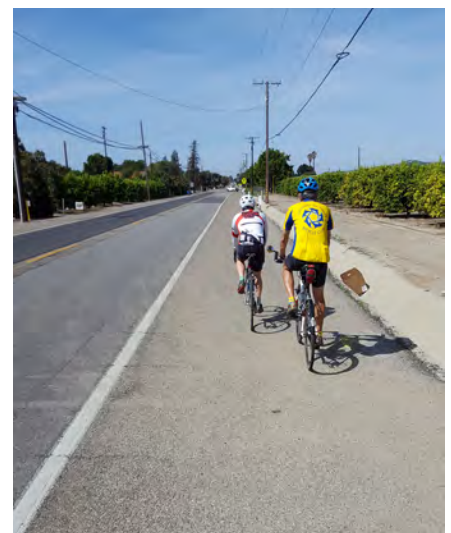


Figure B-5: Santa Paula Afternoon Ride Route

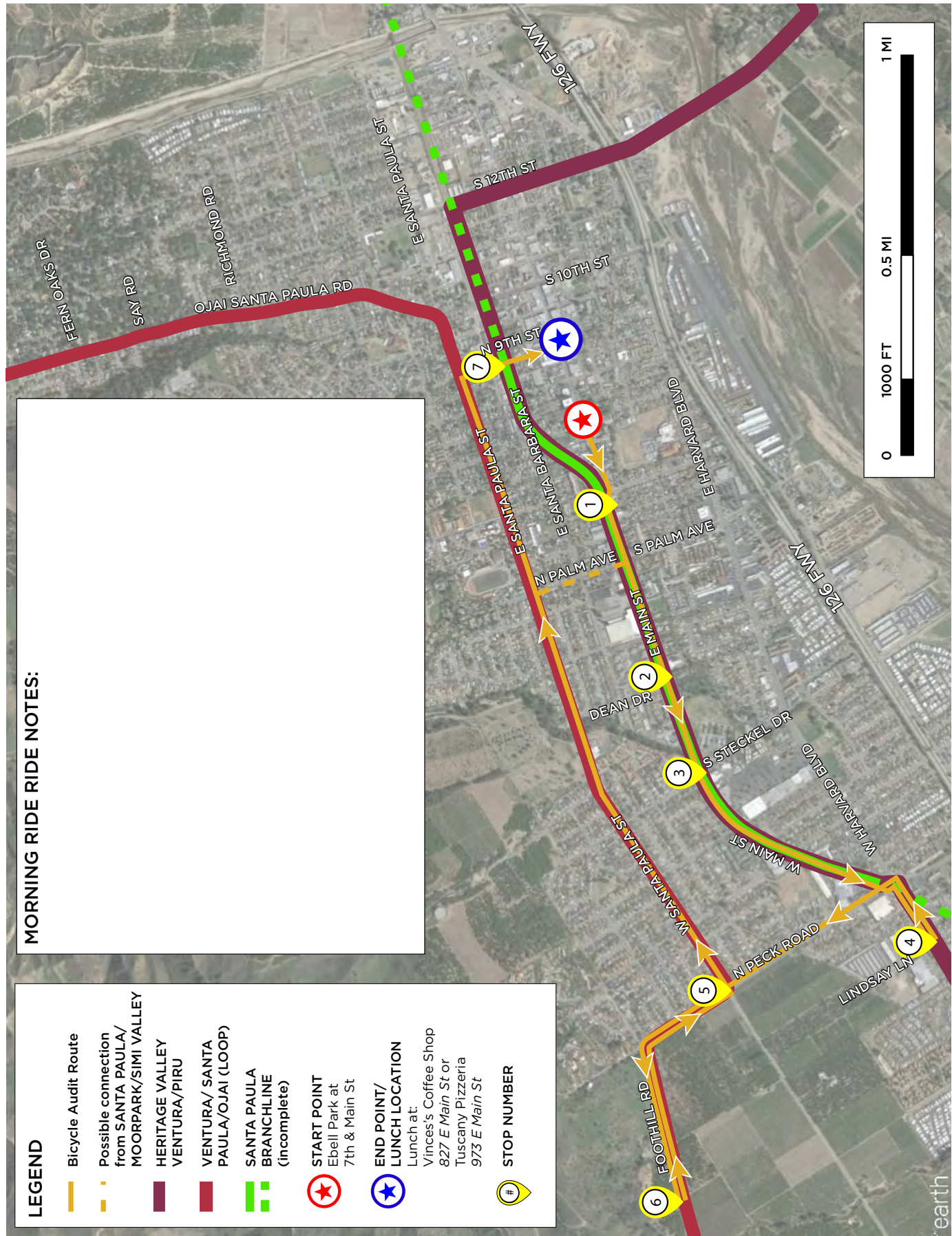
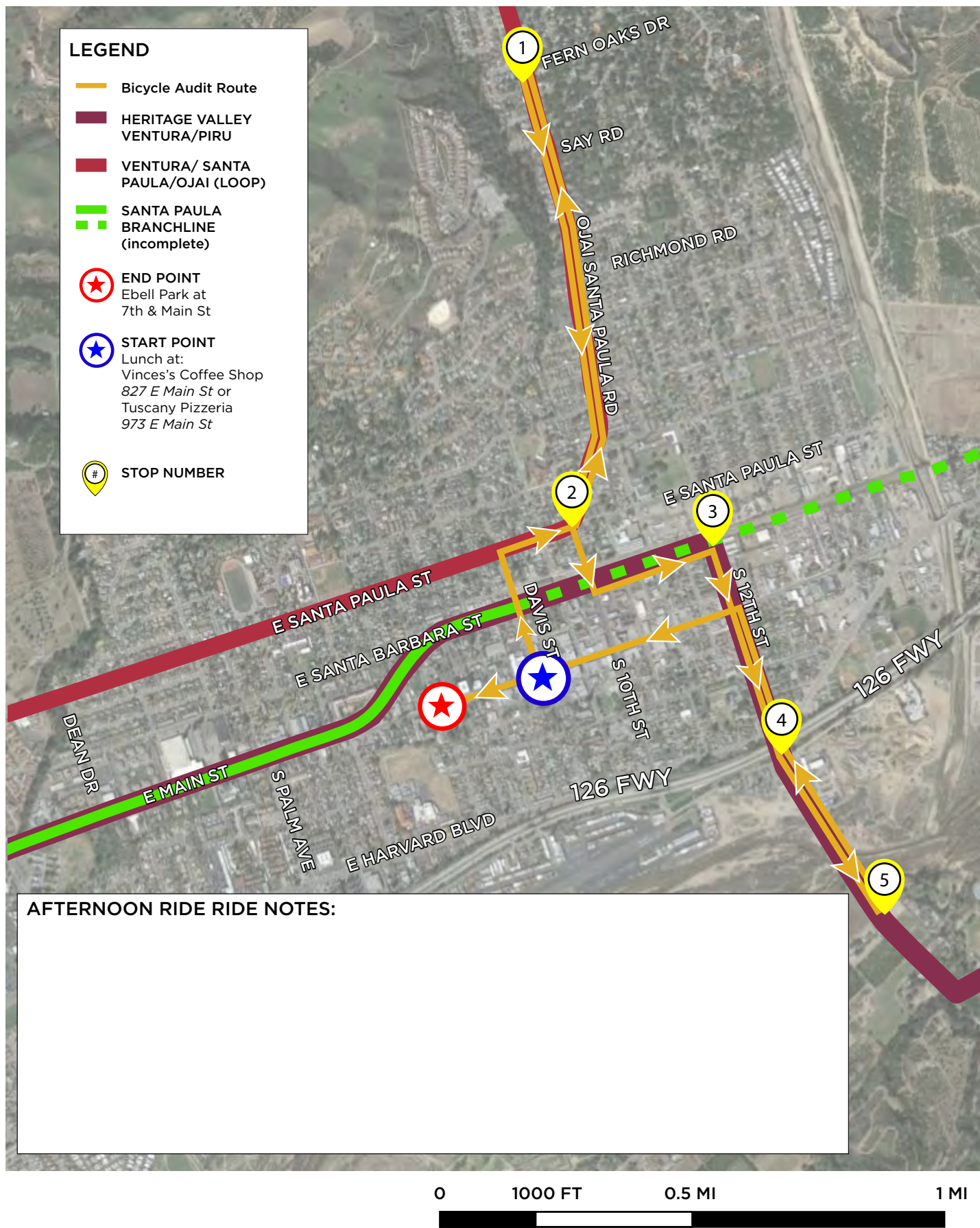


Figure B-6: Santa Paula Afternoon Ride Route



VENTURA-OXNARD-PORT HUENEME - APRIL 28, 2016

Morning Ride Notes

J Street

- Crime and safety-related concerns
- Existing bike lane
- Mostly residential
- School and Parks along the street

Ventura Road

- High traffic volume and high speeds
- Not a continuous bike lane - drops at certain segments of the road

Victoria Avenue

- High traffic volume and high speeds
- Not a continuous bike lane - drops at certain segments of the road

E Hueneme Road

- Southernmost connection between North Ventura and J Street
- Existing bike lane
- Preferred segment for Coast and Simi Valley to Port Hueneme Routes

Bard Street

- North Ventura and J Street connection
- Existing bike lane

Ventura Road

- Connection to Victoria Ave through 101 Freeway off-street path
Northbound: Easy to get into the path
Southbound: Absence of traffic light makes access complicated

Victoria Avenue

- Bike path on bridge to cross 101 Freeway needs resurfacing

Gonzales Road

- Existing bike lane

H Street

- Existing bike lane

- Converts into J Street south of Wooley Rd
- School and Parks along the street

Olivas Park Drive

- Existing bike lane
- Future connection to Johnson Drive

Perkin Avenue

- No bike facilities
- Area full of auto dealers

Auto Center Drive

- No bike facilities
- Area full of auto dealers
- Road turns into a freeway ramp
- Connection to Ventura Rd through 101 Freeway Off-street Path

Southbound: Easy to get into the path

Northbound: Absence of traffic light makes access complicated

Vineyard Ave

- Existing bike lane
- Area full of auto dealers

Figure B-7: Photos from the Ventura-Oxnard-Port Hueneme Bike Ride



Figure B-8: Ventura-Oxnard-Port Hueneme Morning Ride Route

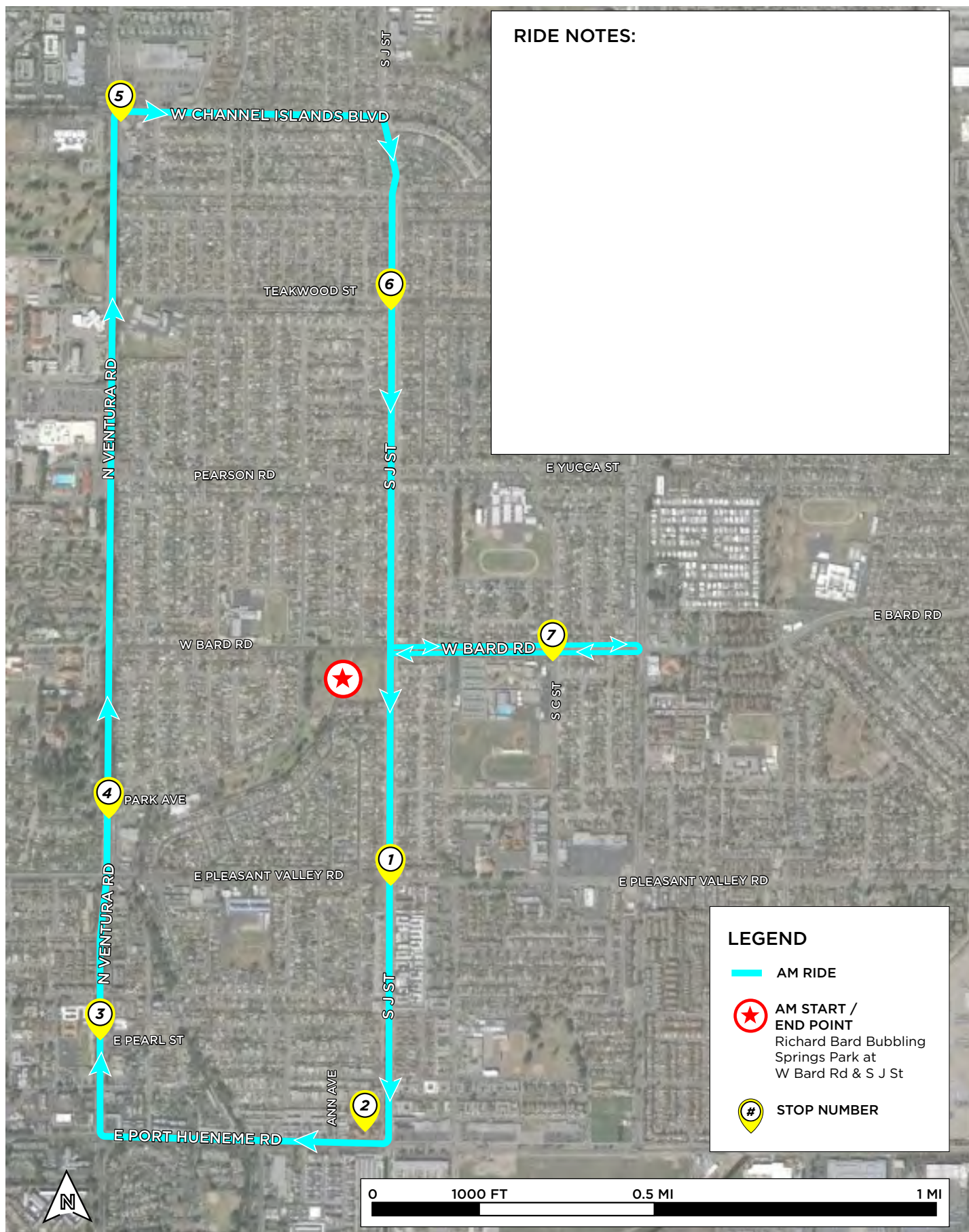


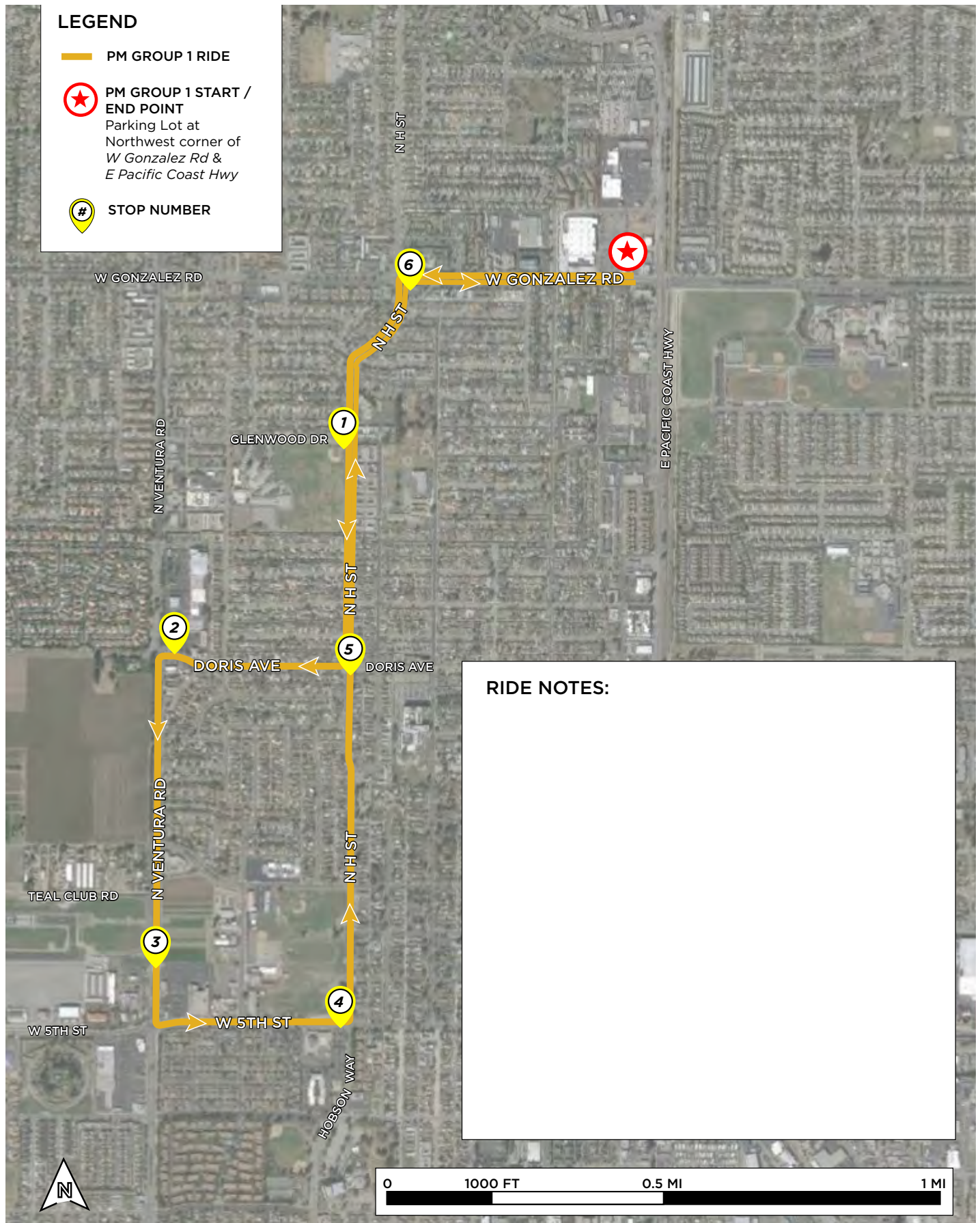
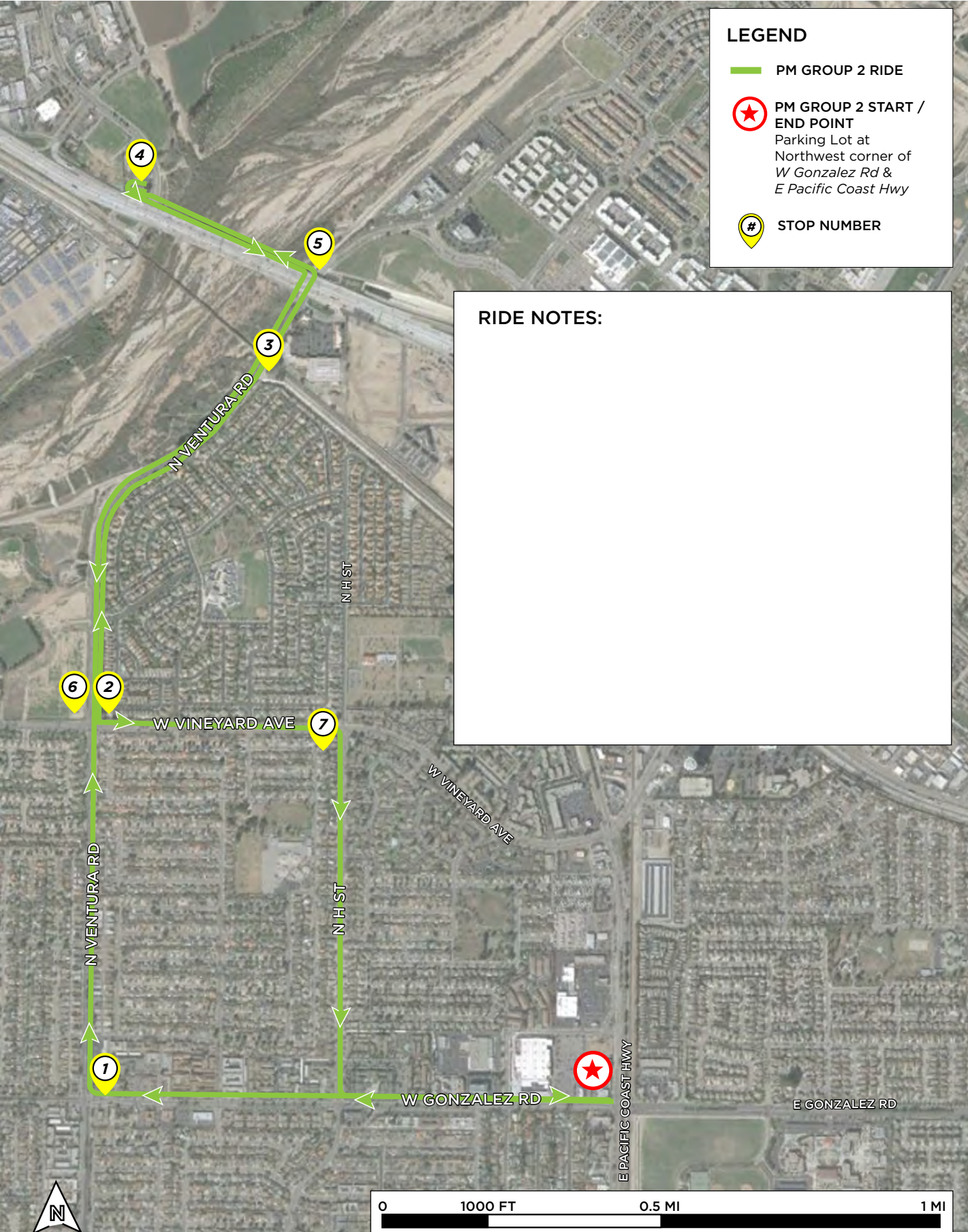
Figure B-9: Ventura-Oxnard-Port Hueneme Afternoon Ride Route 1

Figure B-10: Ventura-Oxnard-Port Hueneme Afternoon Ride Route 2



SIMI VALLEY - MAY 11, 2016

Ride Notes

Tierra Rejada Road

- Best option to Moorpark, but a little bit hilly
- Bike lane disappears but there is a wide paved shoulder
- Due to high speeds, some cyclists prefer to ride on the sidewalk after Levarancho Road
- Not recommended because there are several driveways and right turn lanes

Madera Road

- Preferred north-south connection between Camarillo to Simi Valley 2 and Simi Valley to Port Hueneme Routes
- Hilly alternative
- Lower traffic volume than the rest of the alternatives

Los Angeles Avenue

- Good east-west alternative until Erringer Road
- No bike facilities
- High speeds and traffic volume
- Not a good alternative for inexperienced cyclists
- East of Erringer is a good option to keep riding west - traffic volume remains high but there is a bike lane

Erringer Road

- Potential connector between Camarillo to Simi Valley 2 and Simi Valley to Port Hueneme Routes
- High traffic volume and not hilly

First Street

- Not a good alternative to connect Camarillo to Simi Valley 2 and Simi Valley to Port Hueneme Routes

Cochran Street

- Best route to ride through Simi Valley
- Lower traffic volume than Los Angeles Avenue
- Has bike lane

Royal Avenue

- Probably the best route for the Simi Valley – Port Hueneme Route
- No bike lane
- School traffic
- High volume traffic on rush hour
- Directing cyclists to Los Angeles Avenue is probably not the best idea because both roads have similar conditions and

Cochran Street is not an option because they are 1.5 miles away

Arroyo Simi Bike Path

- Scenic route
- Lack of wayfinding could be confusing
- Not a continuous ride. Every street crossing has sign trying to prevent middle street crossing
- Two paths, one old and one new - switching between both paths is required at certain points. The new path has a paved surface but suddenly ends and turns into gravel, while the old path has a bumpy surface
- Wayfinding needed to find the bike path in surrounding streets

Figure B-11: Photos from the Simi Valley Bike Ride

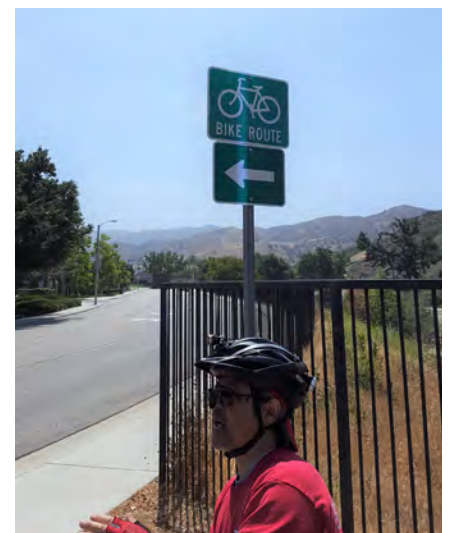
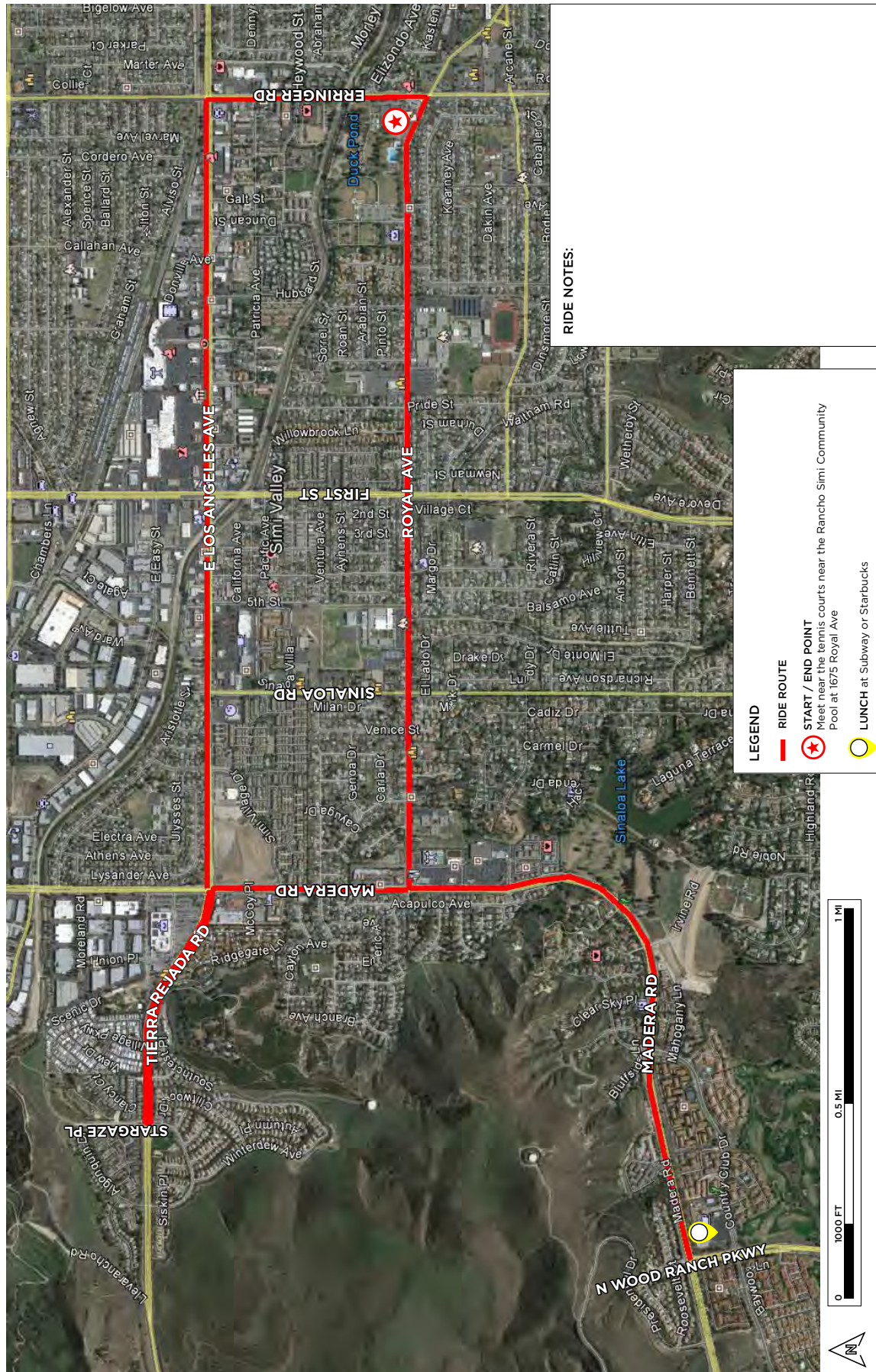


Figure B-12: Simi Valley Ride Route



CAMARILLO - MAY 12, 2016

Ride Notes

General Ride Notes

- Combine Camarillo to Simi Valley 2 and Camarillo to Coastal Routes when getting to Pleasant Valley Road
- No need to continue north on Las Posas Road when getting to Camarillo

Las Posas Road

- Local connection
- Lack of regional attractors or destinations
- Not a good reason to direct cyclists to Las Posas Road
- Sub-standard bike lane - goes from 2 feet to 5 feet throughout the road

South Las Posas Road

- Bike lane
- Challenging to navigate 101 Freeway ramps - bike lane disappears when approaching to the freeway
- High speed right turn lanes
- Southbound: Hard to turn left on Pleasant Valley Road
- Bike lane drops at intersection
- High speed automobile and truck traffic

Pleasant Valley Road

- No bike lane
- Gravel shoulder unsuitable for bicycle riding
- Low traffic volume
- High speed traffic

Dawson Road

- Preferred connection to train station
- Straighter than Village Commons Blvd
- Bike lane
- Low traffic volume
- High speed right turn on 101 freeway ramp
- Use of bridge is needed to get to the train station
- Train station needs signage

Mission Oaks Blvd

- Smooth connection to Santa Rosa Rd (Camarillo to Simi Valley 2 Route)

Adolfo Road

- Bike lane
- Low traffic volume
- Preferred alternative to connect Camarillo to Simi Valley 2 and Camarillo to Coastal Routes
- Connects to Camarillo Bike Path

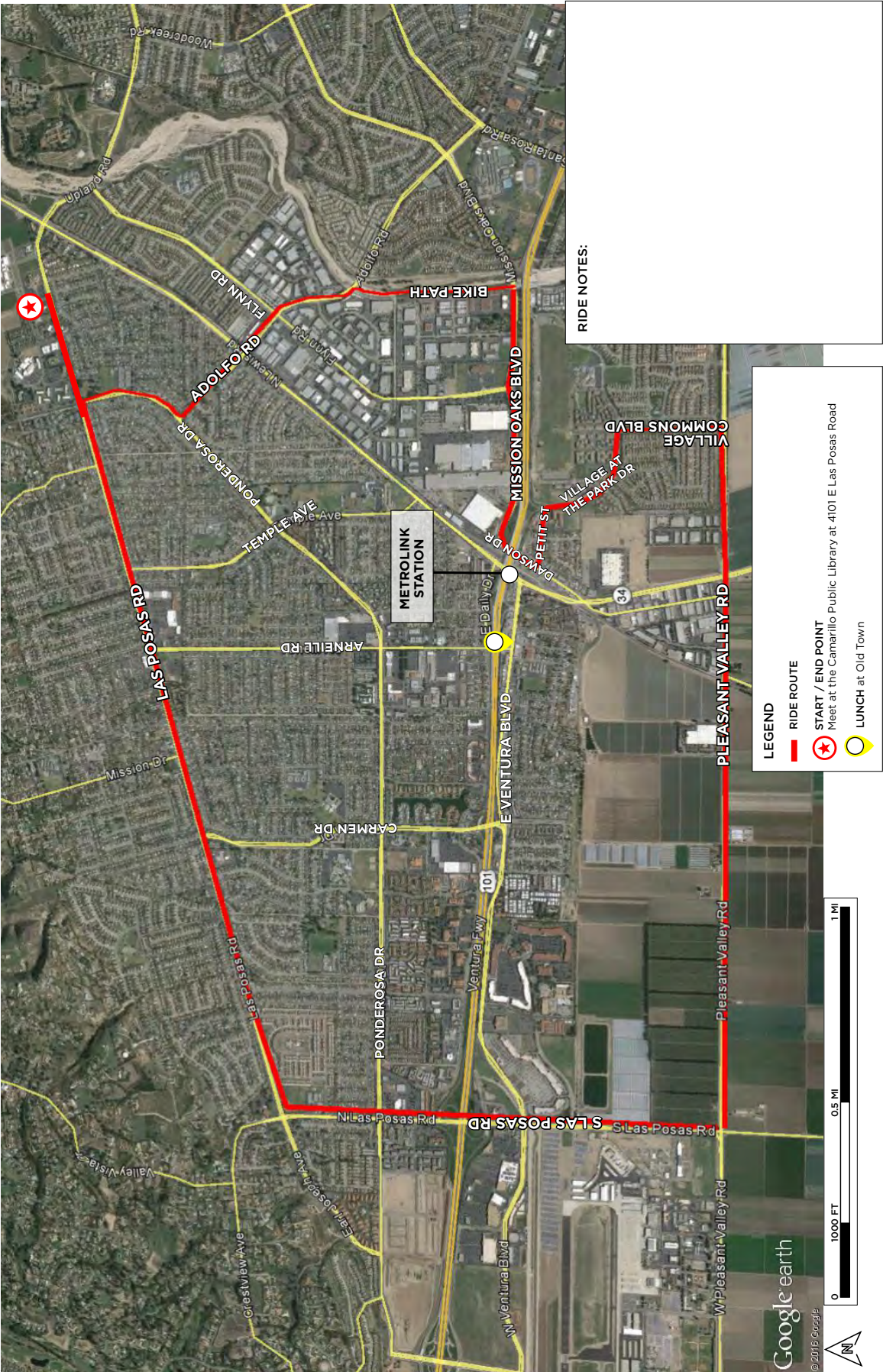
Ponderosa Drive

- Bike lane
- Low traffic volume
- Preferred alternative to connect Camarillo to Simi Valley 2 and Camarillo to Coastal Routes

Figure B-13: Photos from the Camarillo Bike Ride



Figure B-14: Camarillo Ride Route



COMMUNITY OUTREACH EVENTS

Staff attended community outreach events to gather public input to improve bicycling in Ventura County. Community members were invited to help design bicycle routes and wayfinding signage, comment on popular existing bicycle routes, and provide feedback on the cyclist experience and desired improvements to the regional bike path network.

Boards were provided at the events for users to vote on their favorite proposed wayfinding signage designs and comment and add to the proposed regional bike routes. Detailed information was provided on the project details and goals.



Figure B-15: Outreach Board 1

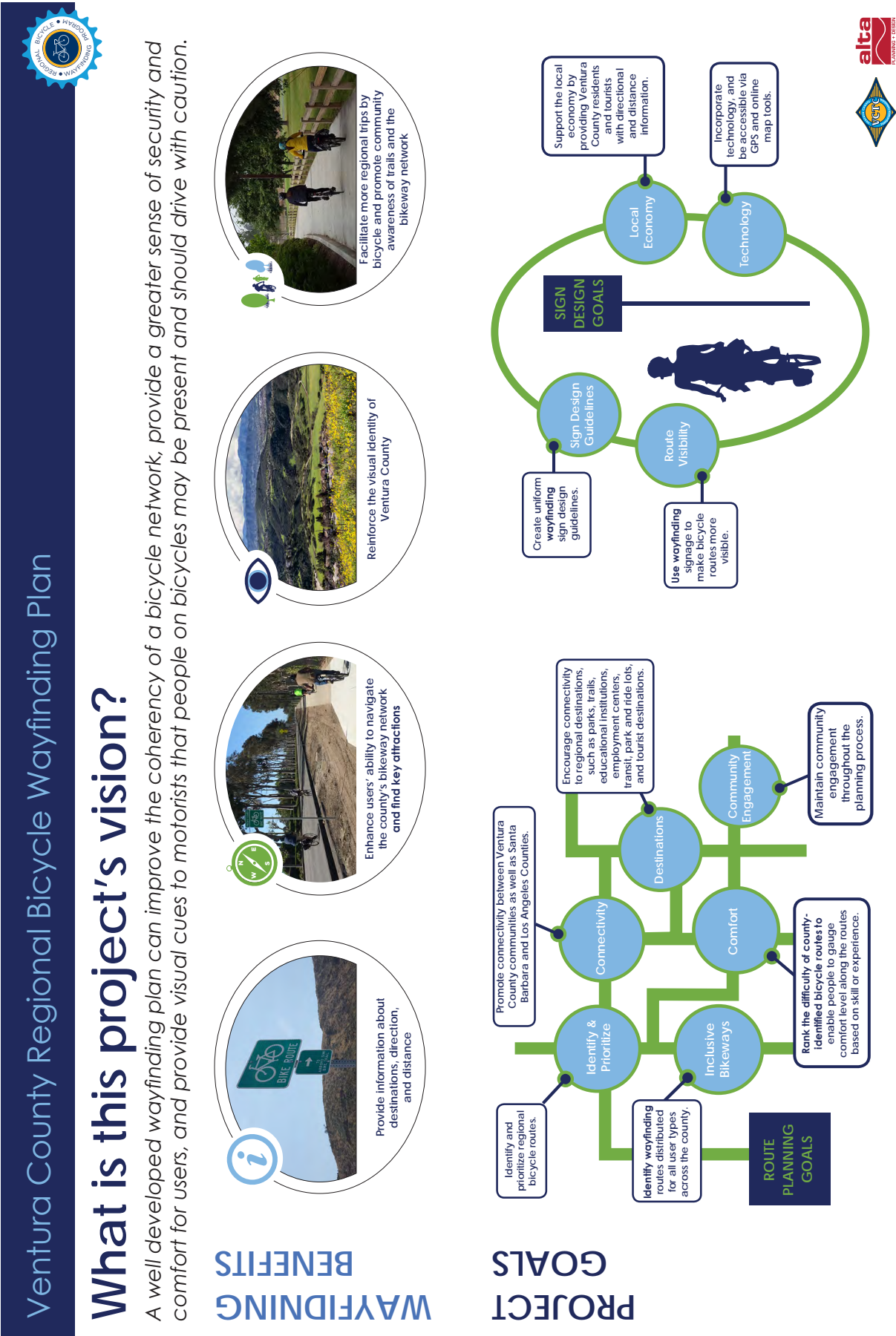
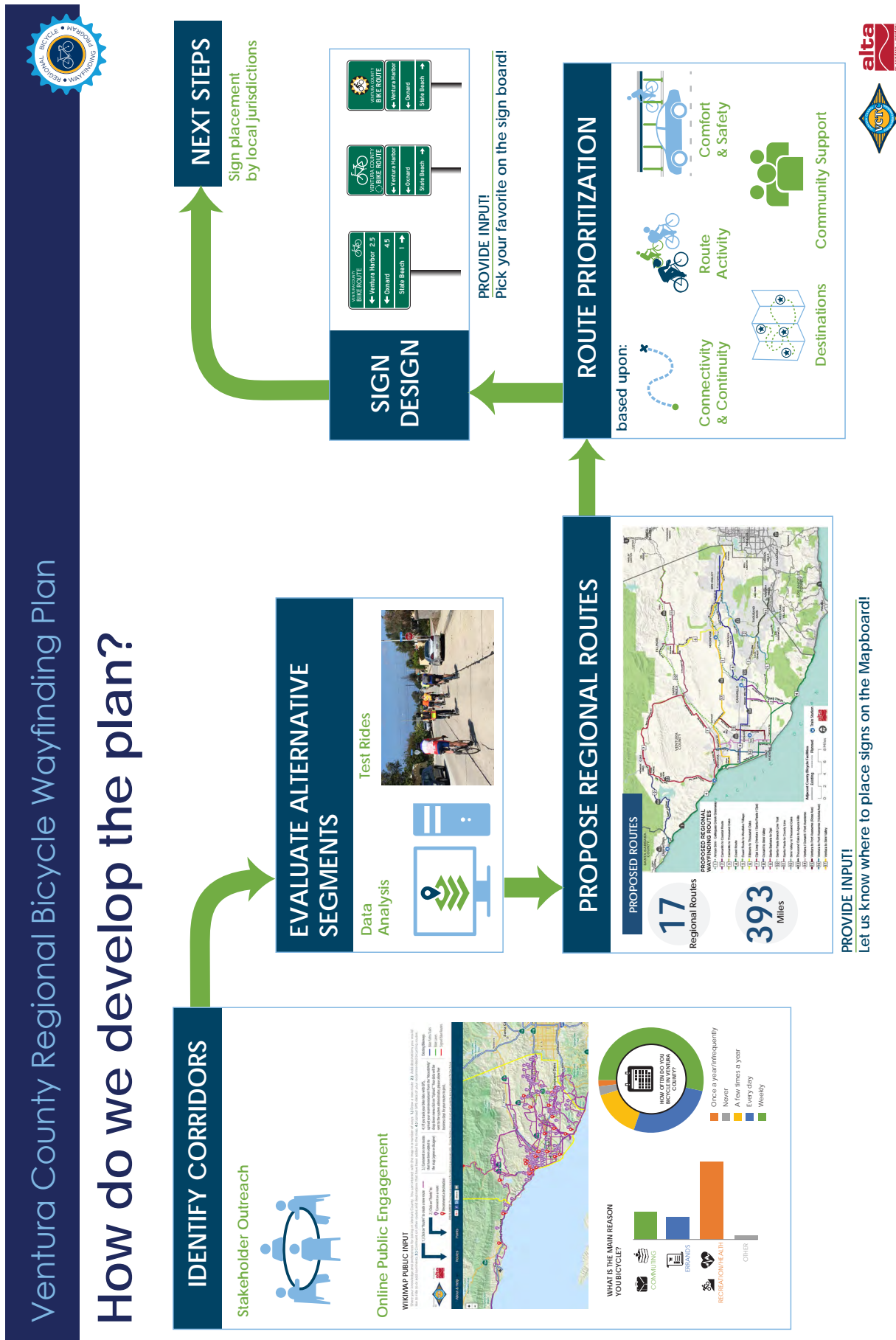


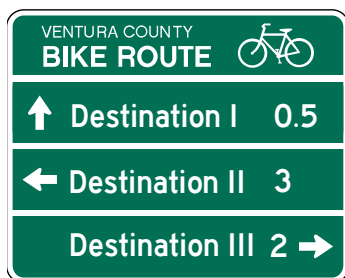
Figure B-16: Outreach Board 2



THOUSAND OAKS STREET FAIR-OCTOBER 16TH, 2016

Sign preference input was collected during the Thousand Oaks outreach event on October 16th from 9 AM to 4 PM. The booth had a total of 153 people vote on sign designs. There were 25 votes for option 1, 106 votes for option 2, and 22 votes for option 3.

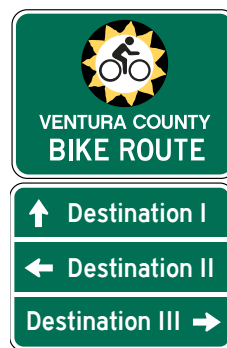
OPTION 1



OPTION 2

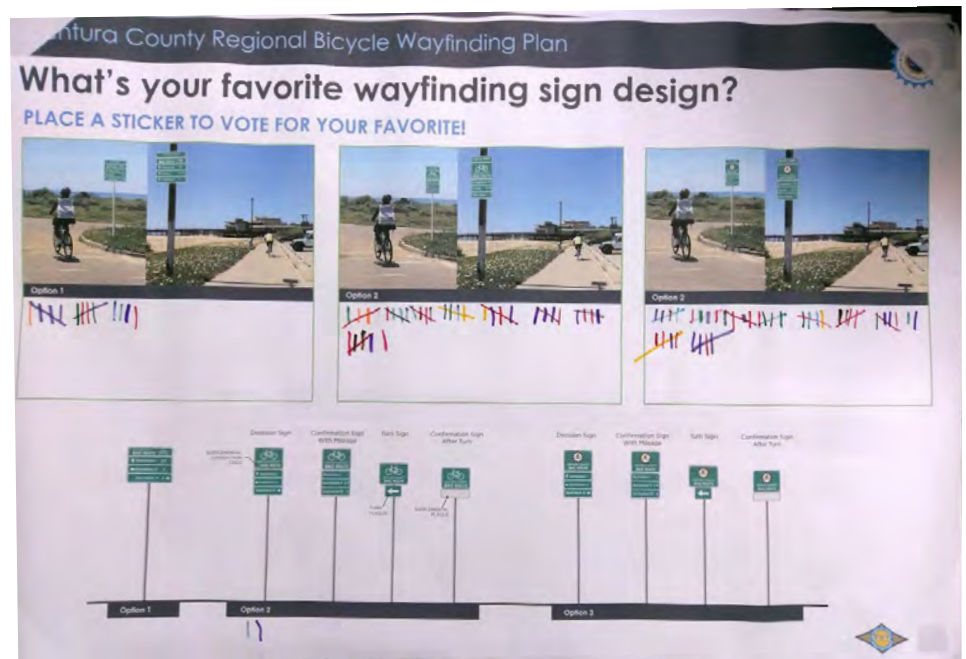


OPTION 3



CHANNEL ISLANDS FARMERS' MARKET-NOVEMBER 13, 2016

Sign preference input was collected during the Channel Islands Farmers' Market outreach event on October 16th between 10 AM and 2 PM. The booth had a total of 102 people vote on sign designs. There were 14 votes for option 1, 41 votes for option 2, and 47 votes for option 3.



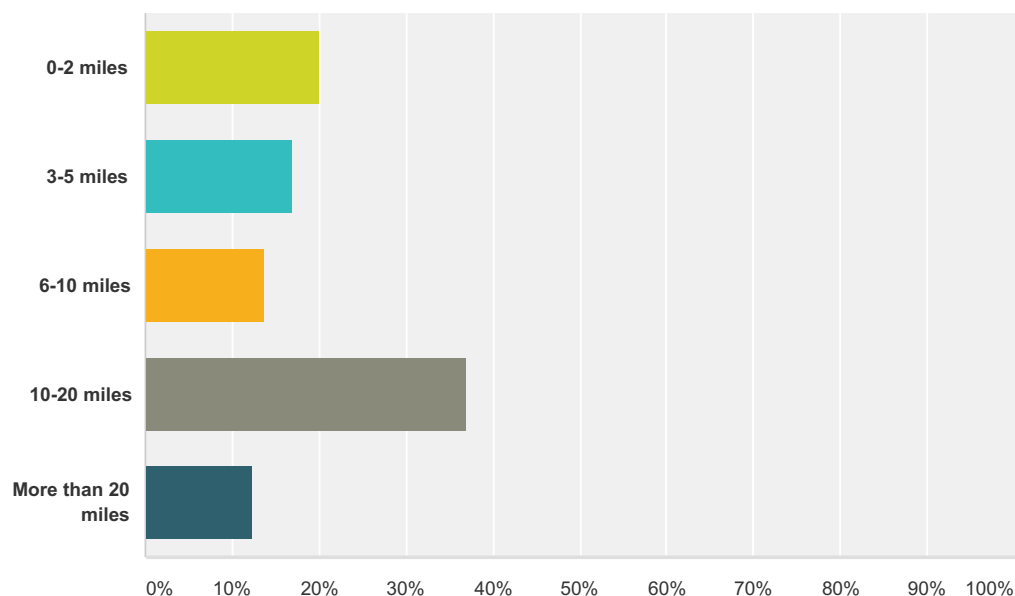
B-2 Online Survey Results

SURVEY MONKEY (2015)

Figure B-18: Survey Monkey 2015 Question 1

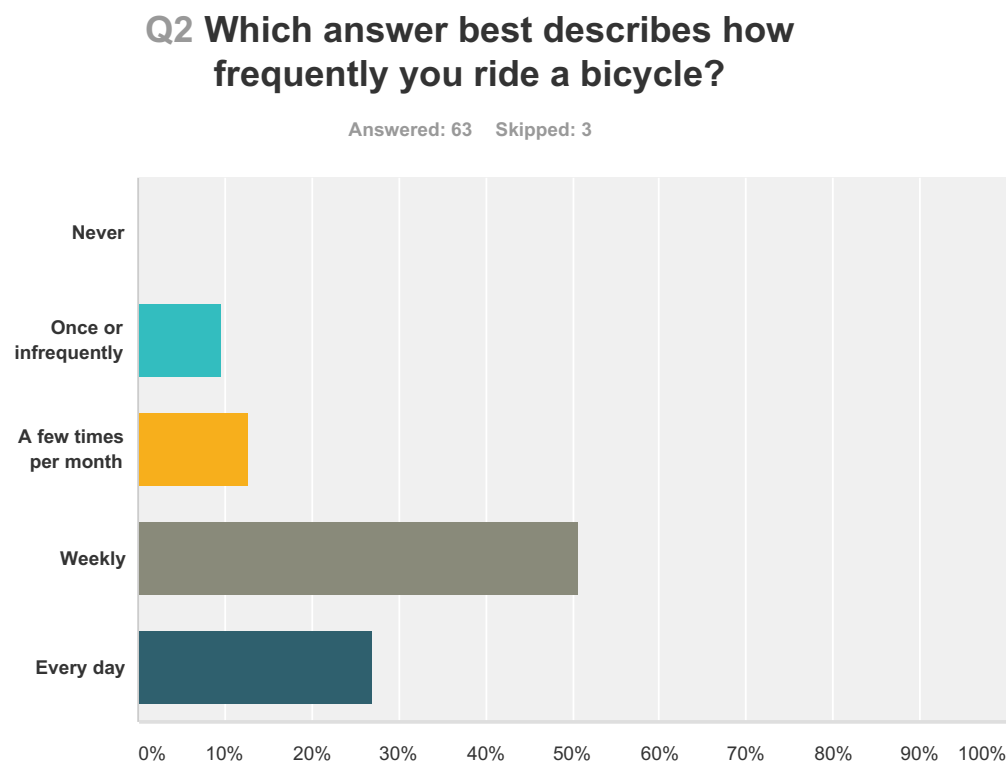
Q1 How far do you typically ride when using paths or trails (the off-street bicycle network)? (Indicate average distance one-way)

Answered: 65 Skipped: 1



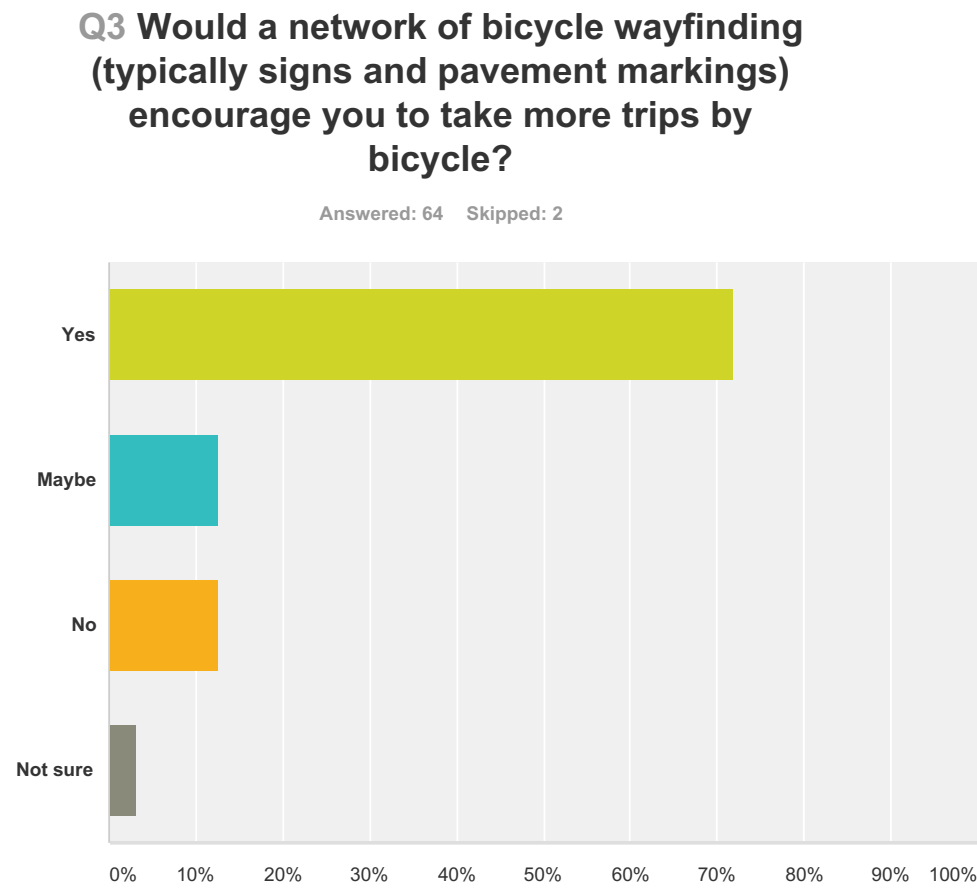
Answer Choices	Responses	
0-2 miles	20.00%	13
3-5 miles	16.92%	11
6-10 miles	13.85%	9
10-20 miles	36.92%	24
More than 20 miles	12.31%	8
Total		65

Figure B-19: Survey Monkey 2015 Question 2



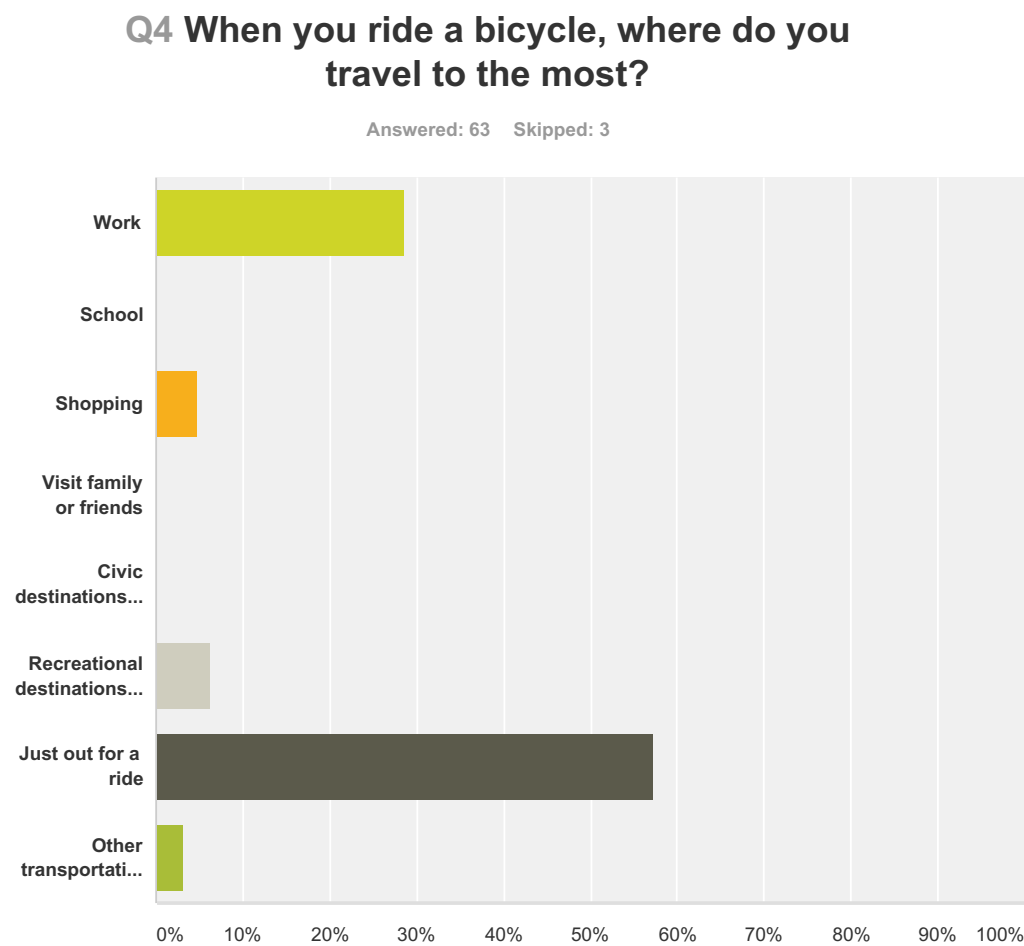
Answer Choices	Responses	
Never	0.00%	0
Once or infrequently	9.52%	6
A few times per month	12.70%	8
Weekly	50.79%	32
Every day	26.98%	17
Total		63

Figure B-20: Survey Monkey 2015 Question 3



Answer Choices	Responses	
Yes	71.88%	46
Maybe	12.50%	8
No	12.50%	8
Not sure	3.13%	2
Total		64

Figure B-21: Survey Monkey 2015 Question 4

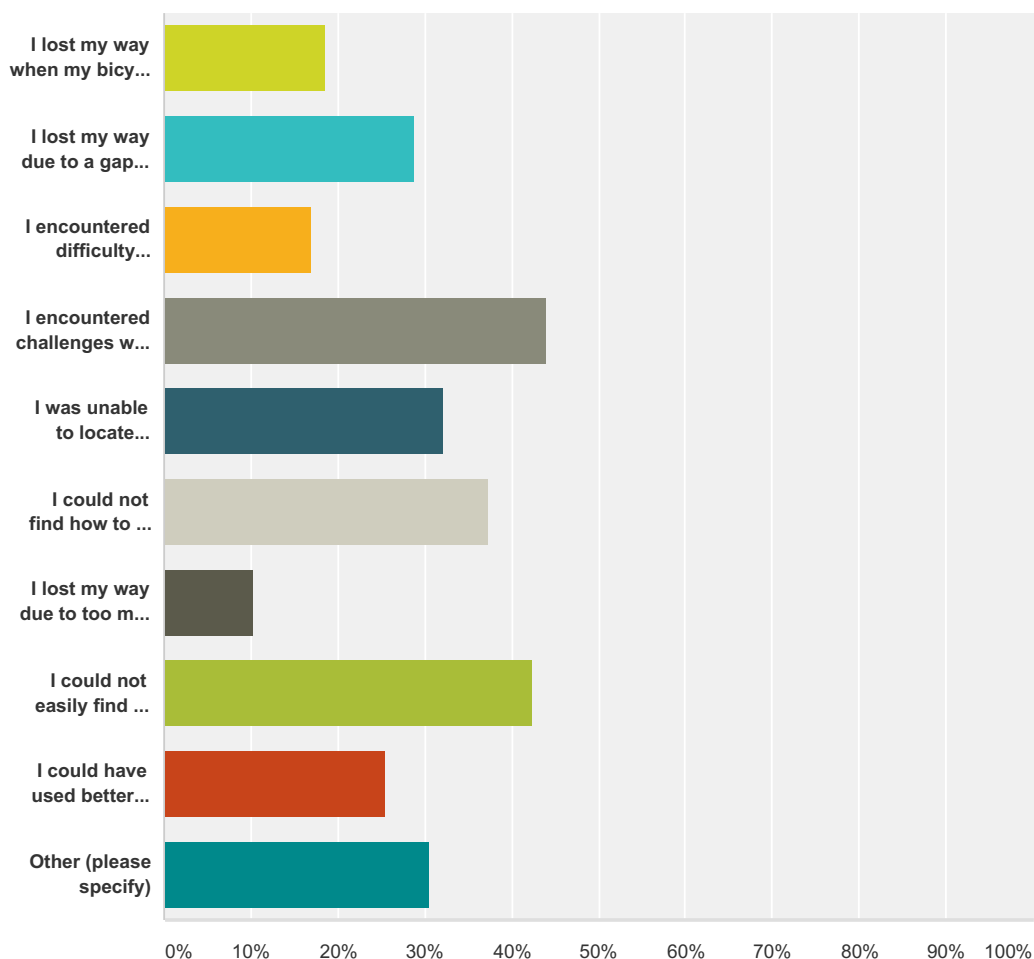


Answer Choices	Responses	
Work	28.57%	18
School	0.00%	0
Shopping	4.76%	3
Visit family or friends	0.00%	0
Civic destinations (museum, library)	0.00%	0
Recreational destinations (park, pool, community center)	6.35%	4
Just out for a ride	57.14%	36
Other transportation connection (please specify: i.e. bicycle to bus, van pool, airport)	3.17%	2
Total		63

Figure B-22: Survey Monkey 2015 Question 5

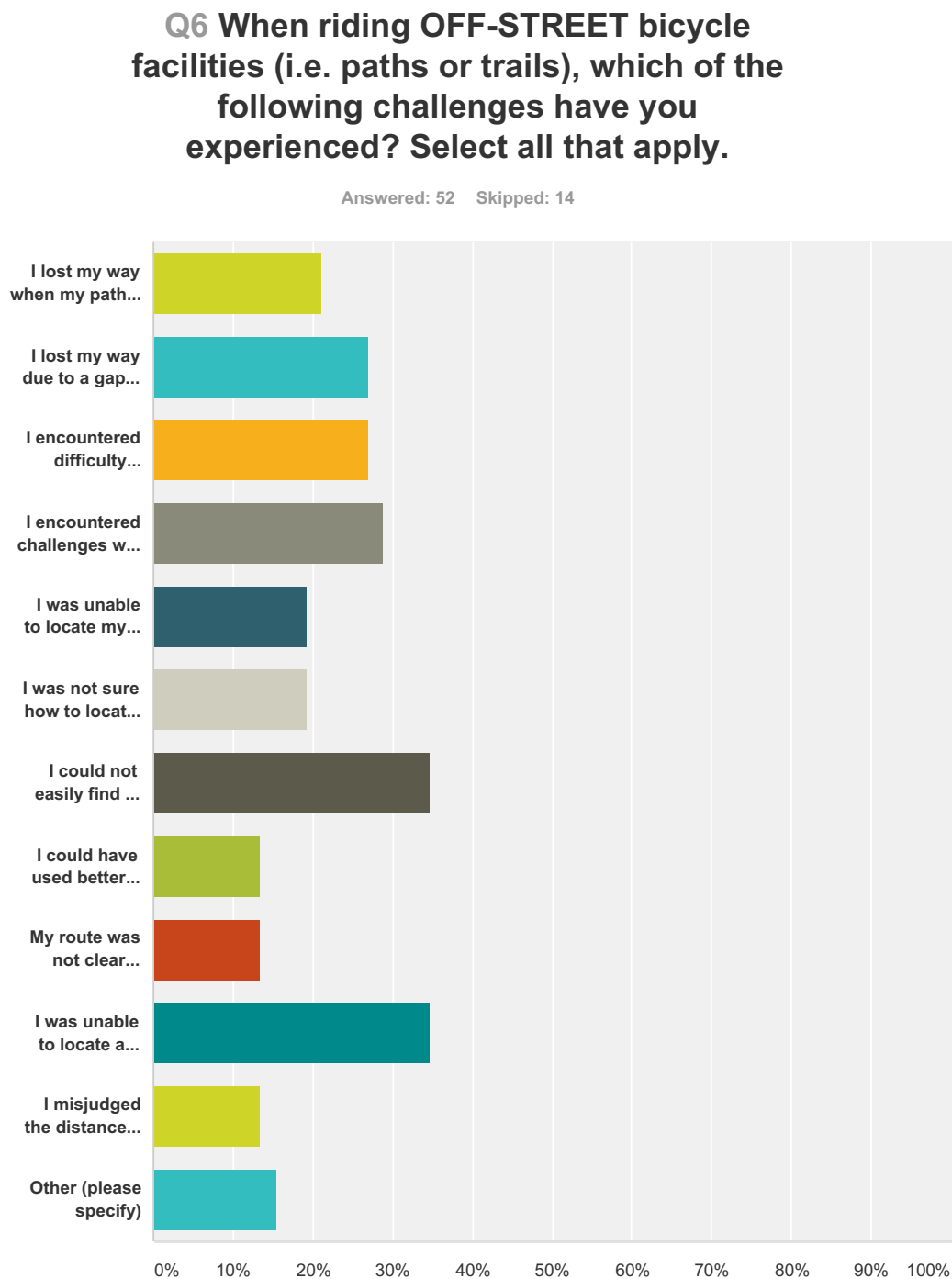
Q5 When riding ON-STREET bicycle facilities (i.e. bike lanes and shared lane markings) in Ventura County, which of the following challenges have you experienced? Select all that apply.

Answered: 59 Skipped: 7



Survey Monkey 2015 Question 5 continued

Answer Choices	Responses	
I lost my way when my bicycle facility terminated/ended.	18.64%	11
I lost my way due to a gap in the bicycle network.	28.81%	17
I encountered difficulty locating my destination from the on-street bicycle network.	16.95%	10
I encountered challenges when trying to explore an unfamiliar part of the County.	44.07%	26
I was unable to locate another on-street bicycle facility.	32.20%	19
I could not find how to get to an off-street path from the on-street bicycle network.	37.29%	22
I lost my way due to too many turns in my route.	10.17%	6
I could not easily find a place to safely lock my bicycle.	42.37%	25
I could have used better direction when my route was interrupted due to construction activity or other temporary closure.	25.42%	15
Other (please specify)	30.51%	18
Total Respondents: 59		

Figure B-23: Survey Monkey 2015 Question 6

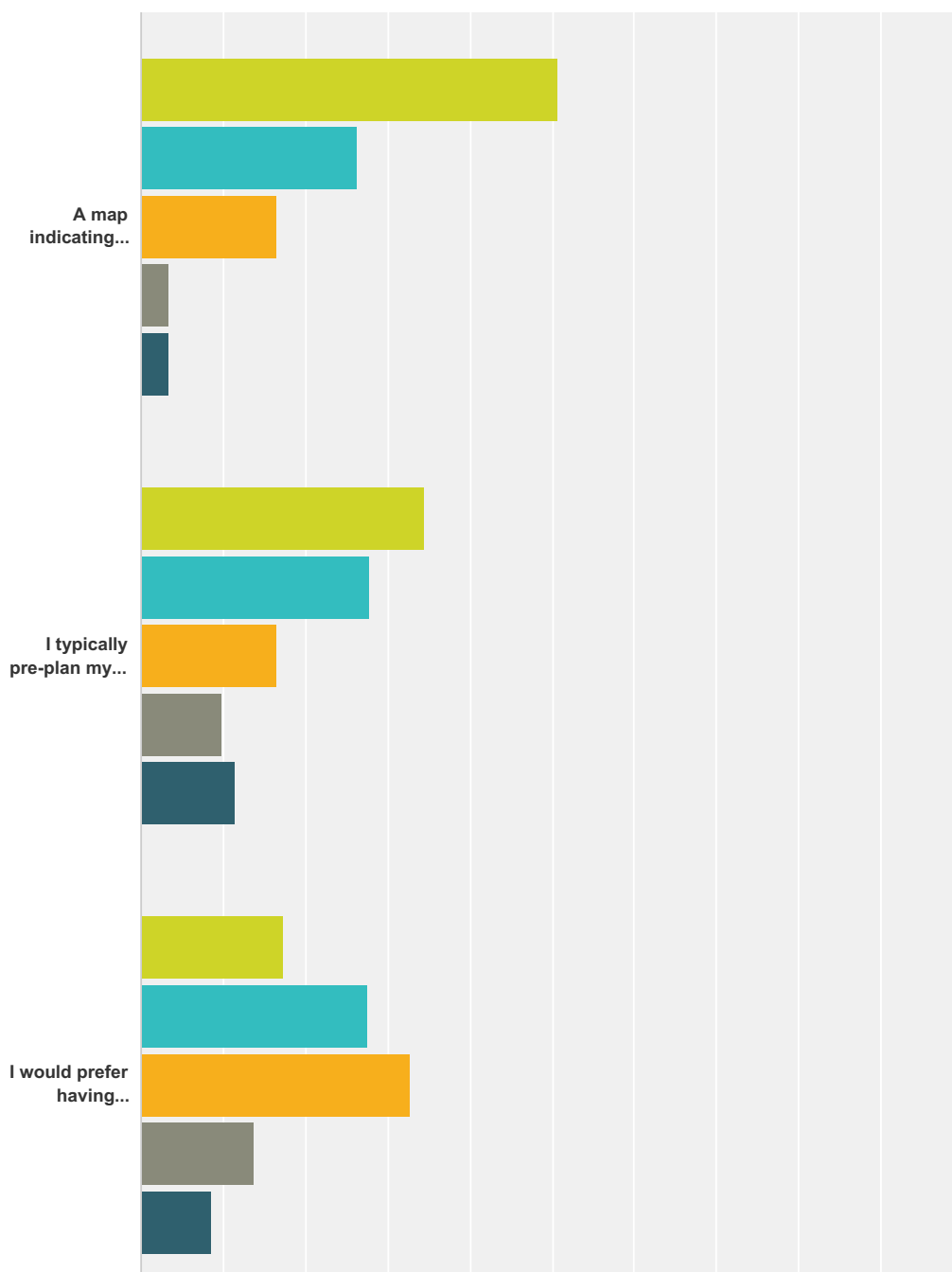
Survey Monkey 2015 Question 6 continued

Answer Choices	Responses	
I lost my way when my path terminated/ended.	21.15%	11
I lost my way due to a gap in the path network.	26.92%	14
I encountered difficulty locating my destination from the path.	26.92%	14
I encountered challenges when trying to explore an unfamiliar part of the path network.	28.85%	15
I was unable to locate my intended trailhead, trail access point, or parking.	19.23%	10
I was not sure how to locate an on-street bicycle facility from an off-street pathway.	19.23%	10
I could not easily find a place to safely lock my bicycle.	34.62%	18
I could have used better direction when my route was interrupted due to construction activity or other temporary closure.	13.46%	7
My route was not clear through a park or other area where more than one path was present.	13.46%	7
I was unable to locate a connecting path.	34.62%	18
I misjudged the distance I had traveled.	13.46%	7
Other (please specify)	15.38%	8
Total Respondents: 52		

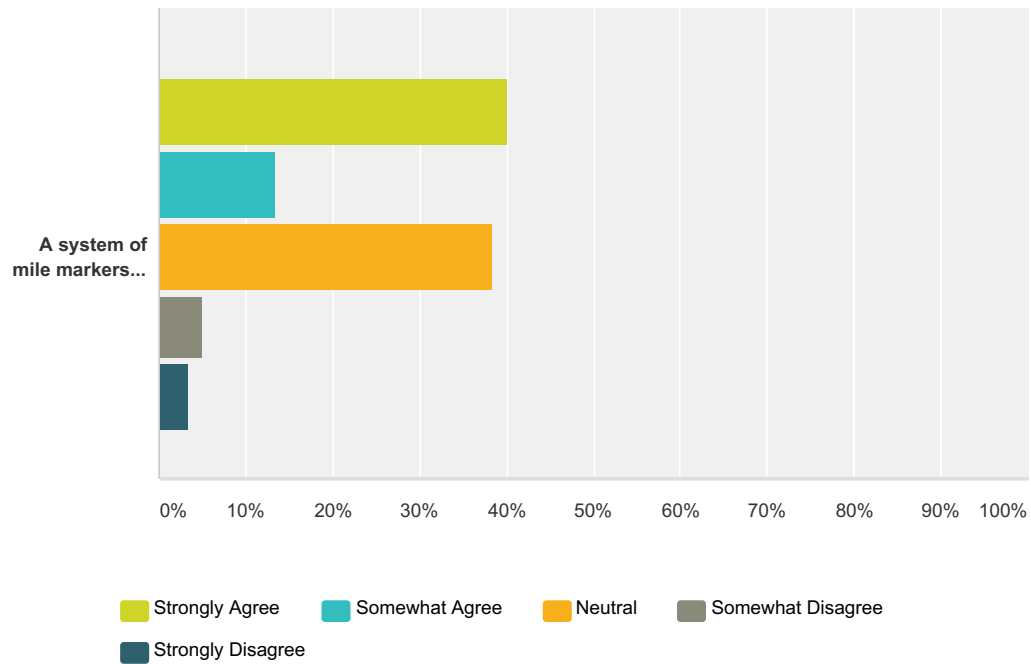
Figure B-24: Survey Monkey 2015 Question 7

Q7 Please rate your level of agreement with the following statements about existing bicycle facilities in Ventura County

Answered: 61 Skipped: 5



Survey Monkey 2015 Question 7 continued

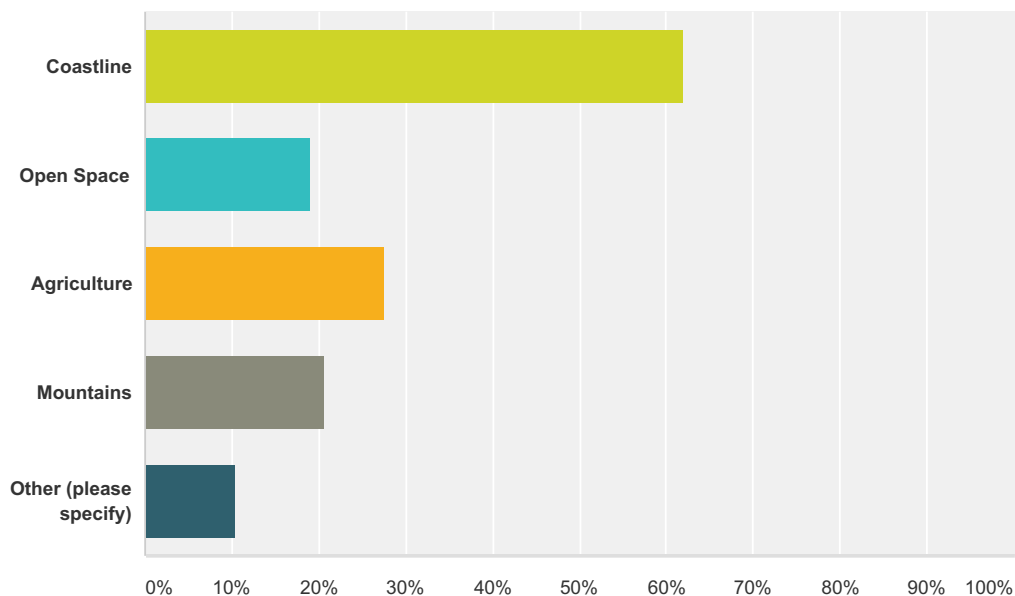


	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Total
A map indicating destinations accessible along and near the pathway network would help me discover new places to travel by bicycle.	50.82% 31	26.23% 16	16.39% 10	3.28% 2	3.28% 2	61
I typically pre-plan my route using web based information.	34.43% 21	27.87% 17	16.39% 10	9.84% 6	11.48% 7	61
I would prefer having wayfinding information on demand using a smartphone instead of other forms of information.	17.24% 10	27.59% 16	32.76% 19	13.79% 8	8.62% 5	58
A system of mile markers indicating travel distance would improve the pathway network.	40.00% 24	13.33% 8	38.33% 23	5.00% 3	3.33% 2	60

Figure B-25: Survey Monkey 2015 Question 8

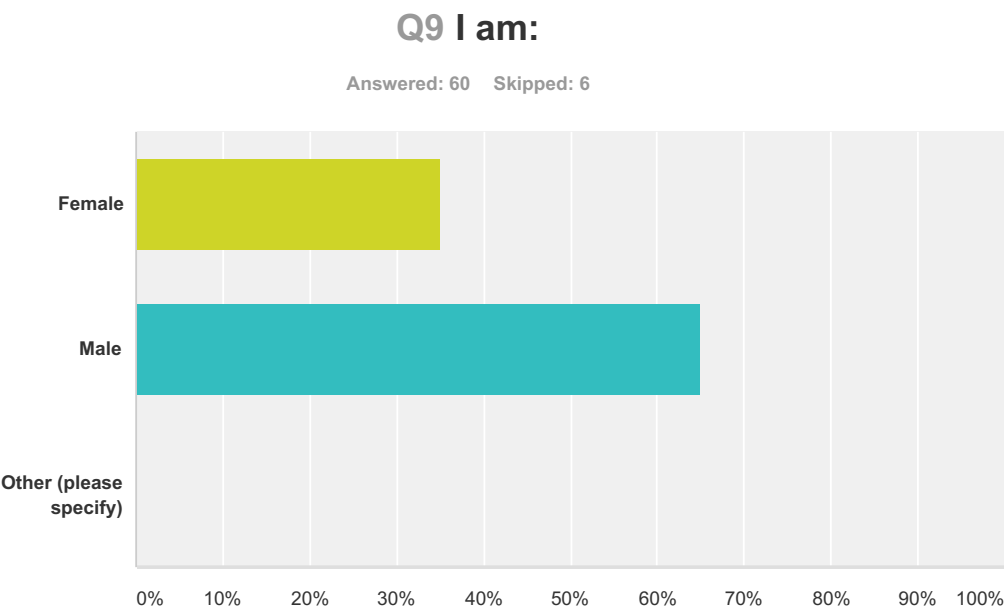
**Q8 Which theme or symbol is most uniquely
Ventura County and should be used to
represent the Ventura Regional Bicycle
Network?**

Answered: 58 Skipped: 8



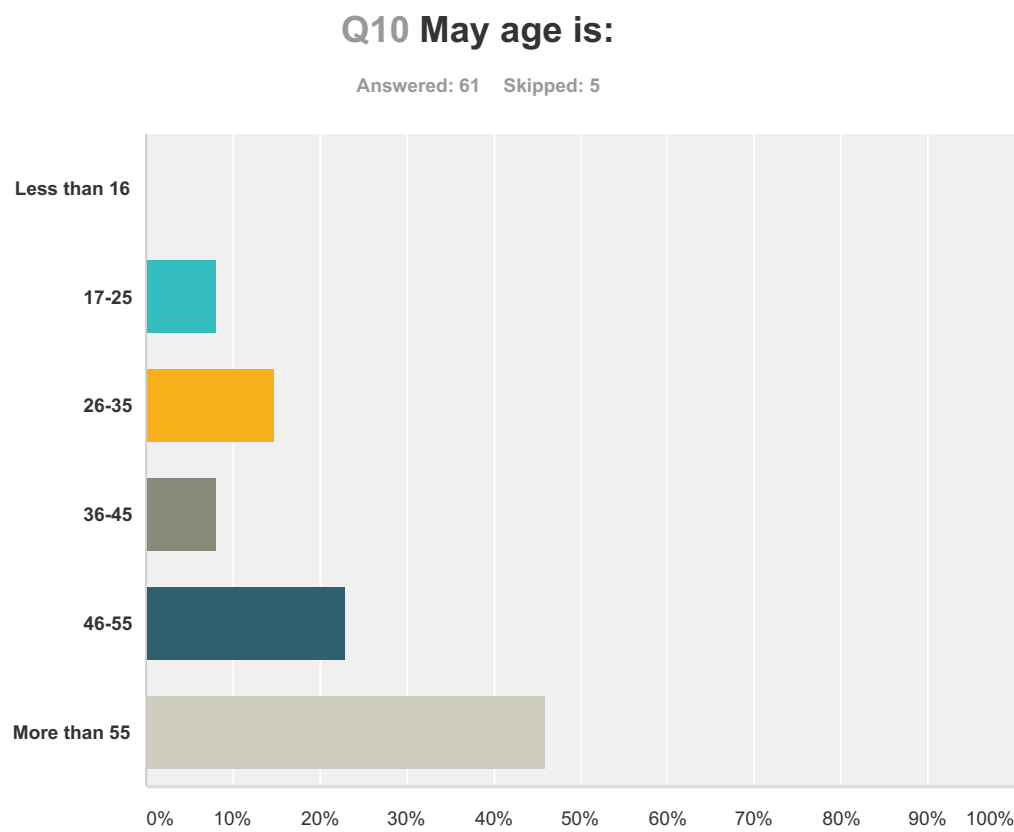
Answer Choices	Responses
Coastline	62.07% 36
Open Space	18.97% 11
Agriculture	27.59% 16
Mountains	20.69% 12
Other (please specify)	10.34% 6
Total Respondents: 58	

Figure B-26: Survey Monkey 2015 Question 9



Answer Choices	Responses	
Female	35.00%	21
Male	65.00%	39
Other (please specify)	0.00%	0
Total		60

Figure B-27: Survey Monkey 2015 Question 10



Answer Choices	Responses	
Less than 16	0.00%	0
17-25	8.20%	5
26-35	14.75%	9
36-45	8.20%	5
46-55	22.95%	14
More than 55	45.90%	28
Total		61

Figure B-28: Survey Monkey 2015 Question 11

Q11 What is the zipcode where you live?

Answered: 61 Skipped: 5

Figure B-29: Survey Monkey 2015 Question 12

**Q12 Please enter your email address below
if you would like to stay informed about the
VCTC Regional Bike Wayfinding Project.**

Answered: 35 Skipped: 31

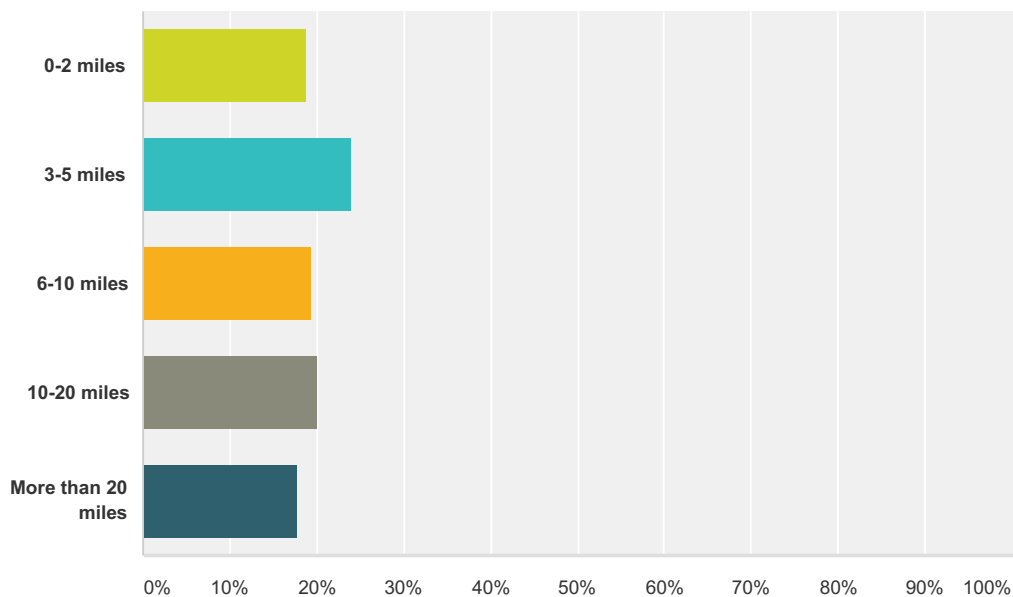
Answer Choices	Responses	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	35
Phone Number	0.00%	0

SURVEY MONKEY (2016)

Figure B-30: Survey Monkey 2016 Question 1

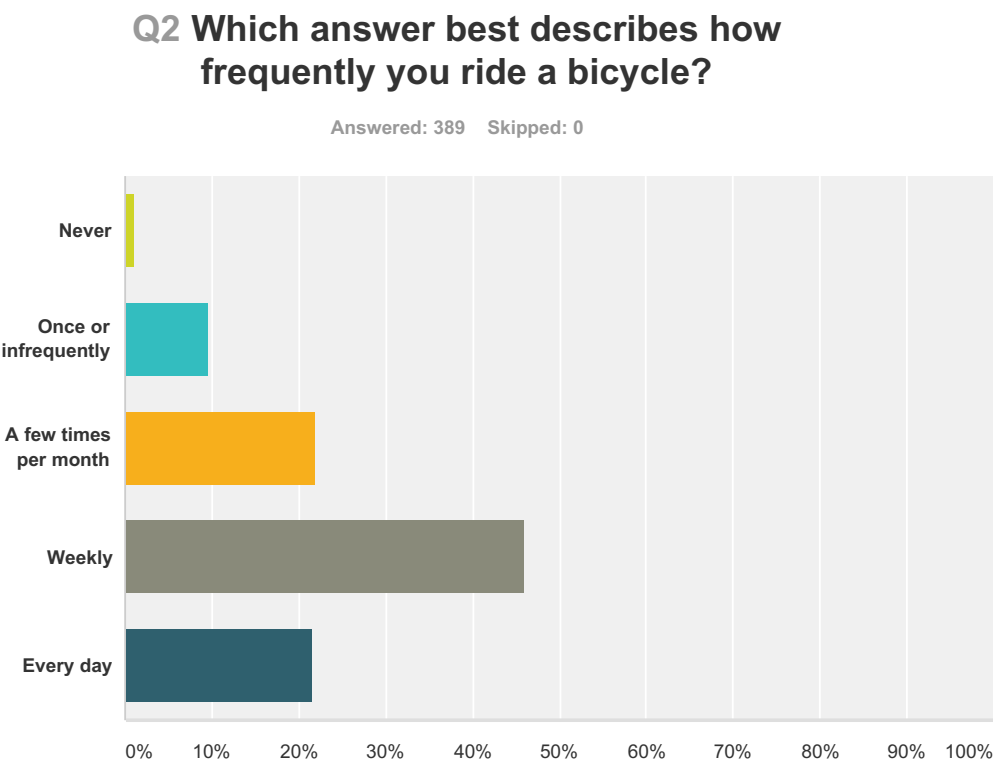
Q1 How far do you typically ride when using paths or trails (the off-street bicycle network)? (Indicate average distance one-way)

Answered: 388 Skipped: 1



Answer Choices	Responses
0-2 miles	18.81% 73
3-5 miles	23.97% 93
6-10 miles	19.33% 75
10-20 miles	20.10% 78
More than 20 miles	17.78% 69
Total	388

Figure B-31: Survey Monkey 2016 Question 2

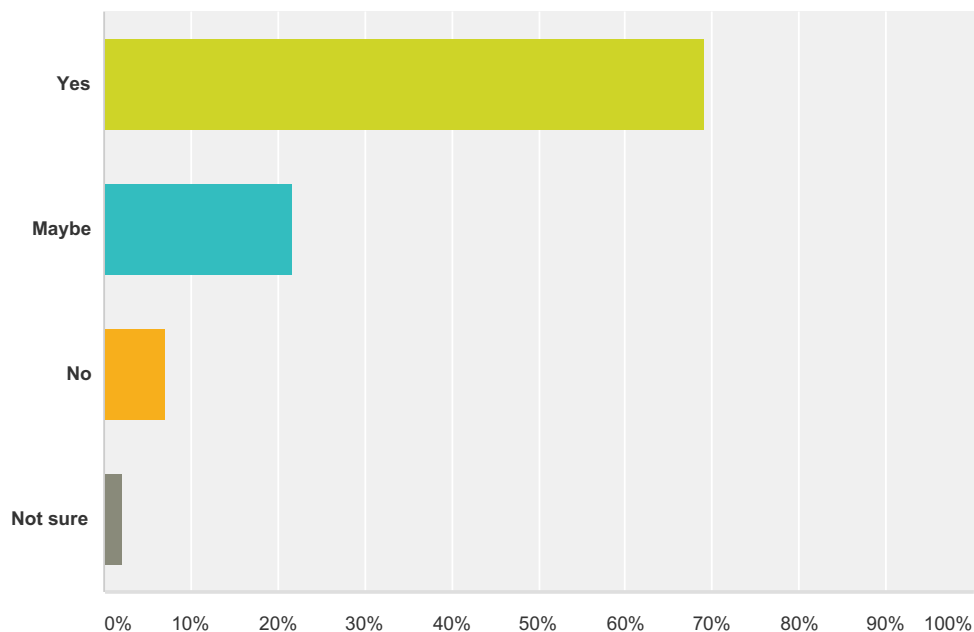


Answer Choices	Responses
Never	1.03%4
Once or infrequently	9.51%37
A few times per month	21.85%85
Weekly	46.02%179
Every day	21.59%84
Total	389

Figure B-32: Survey Monkey 2016 Question 3

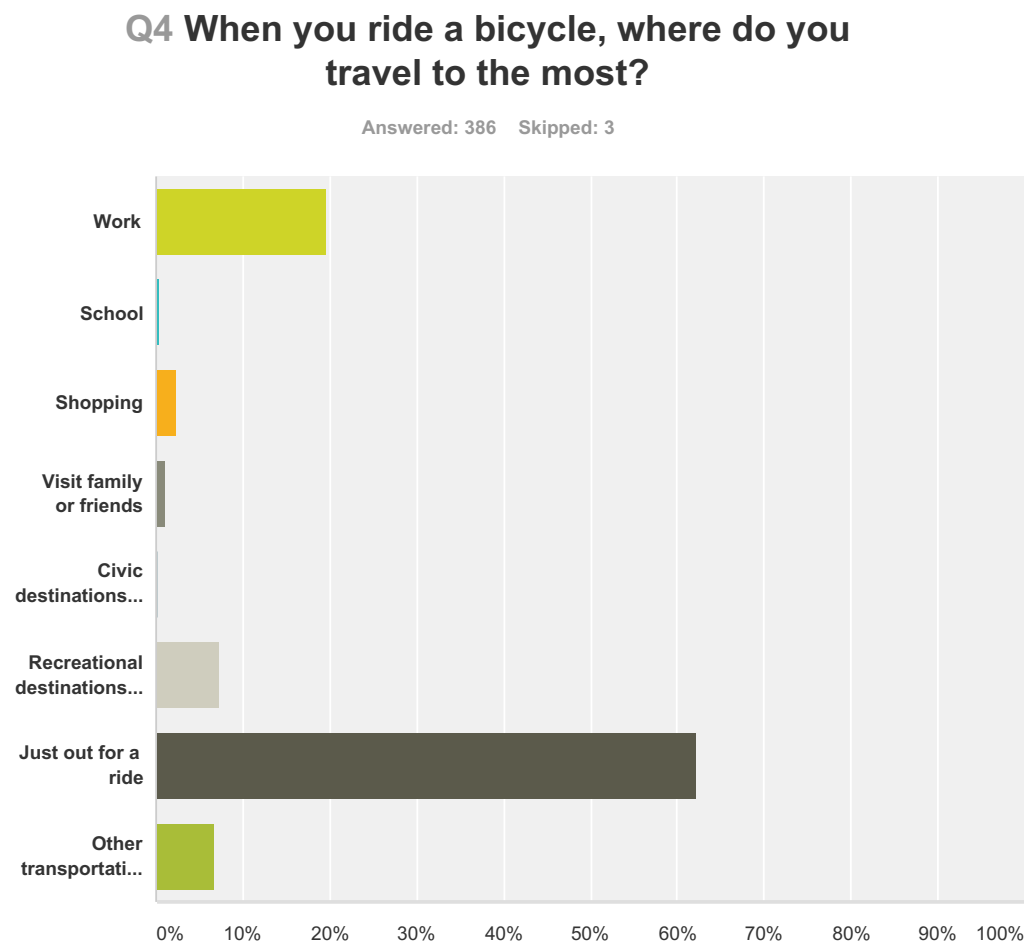
**Q3 Would a network of bicycle wayfinding
(typically signs and pavement markings)
encourage you to take more trips by
bicycle?**

Answered: 386 Skipped: 3



Answer Choices	Responses	
Yes	69.17%	267
Maybe	21.76%	84
No	6.99%	27
Not sure	2.07%	8
Total		386

Figure B-33: Survey Monkey 2016 Question 4

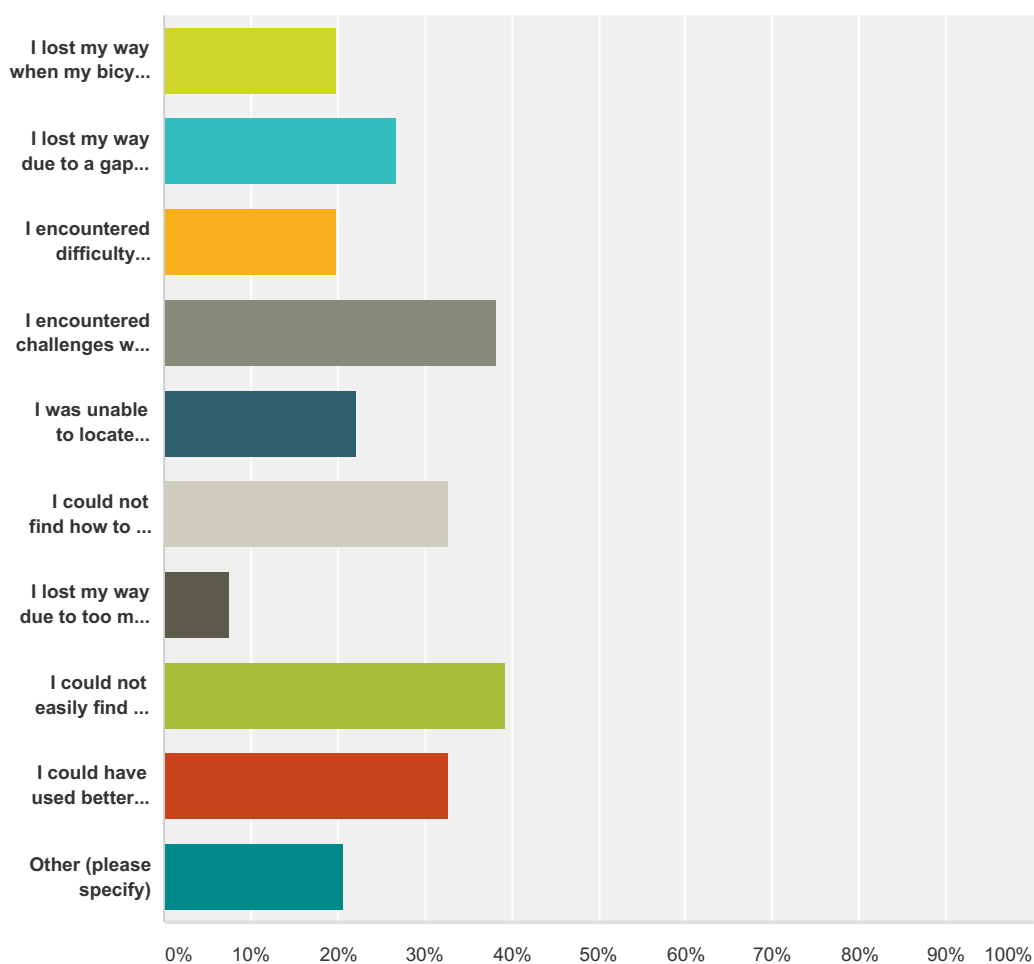


Answer Choices	Responses	
Work	19.69%	76
School	0.52%	2
Shopping	2.33%	9
Visit family or friends	1.04%	4
Civic destinations (museum, library)	0.26%	1
Recreational destinations (park, pool, community center)	7.25%	28
Just out for a ride	62.18%	240
Other transportation connection (please specify: i.e. bicycle to bus, van pool, airport)	6.74%	26
Total		386

Figure B-34: Survey Monkey 2016 Question 5

Q5 When riding ON-STREET bicycle facilities (i.e. bike lanes and shared lane markings) in Ventura County, which of the following challenges have you experienced? Select all that apply.

Answered: 329 Skipped: 60



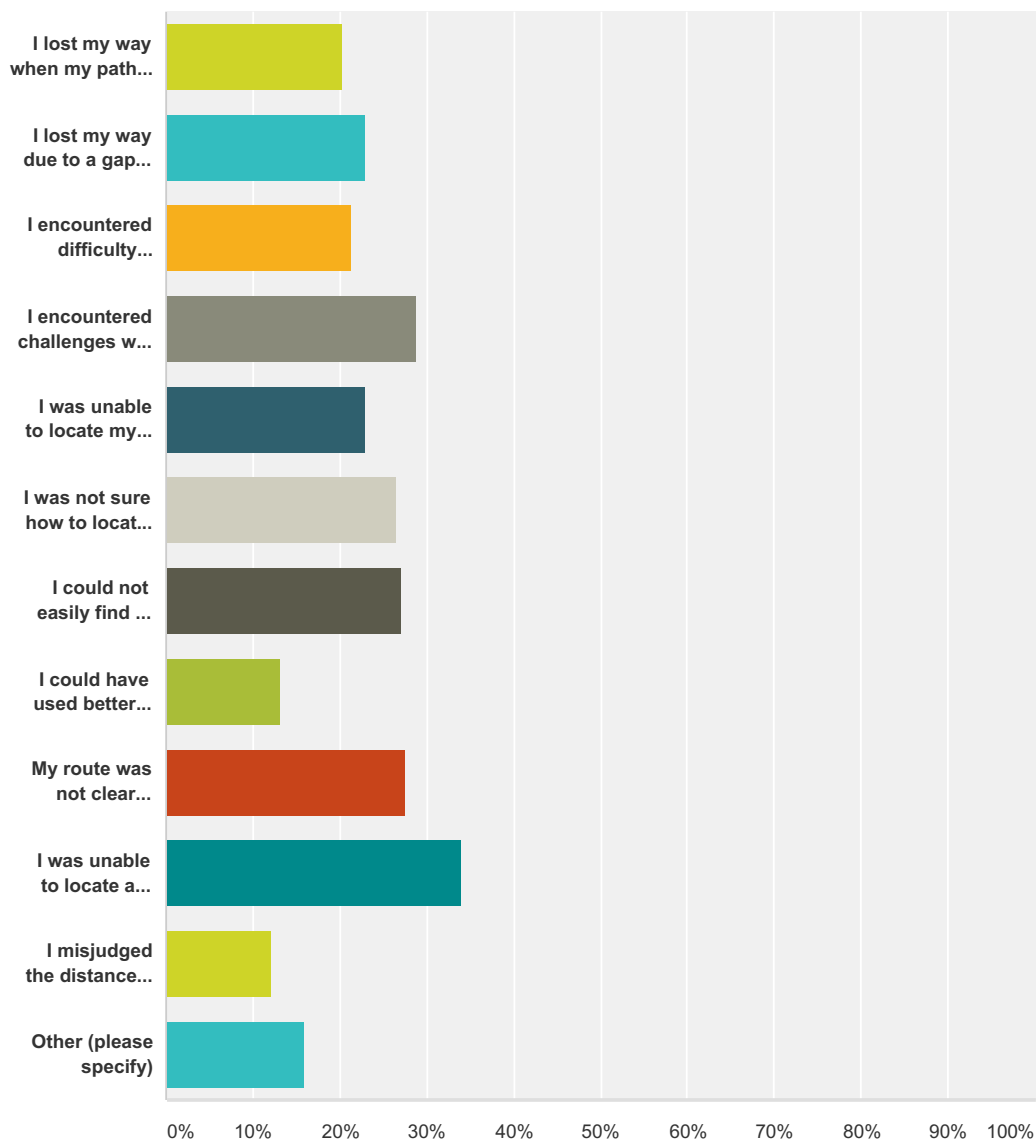
Survey Monkey 2016 Question 5 continued

Answer Choices	Responses	
I lost my way when my bicycle facility terminated/ended.	19.76%	65
I lost my way due to a gap in the bicycle network.	26.75%	88
I encountered difficulty locating my destination from the on-street bicycle network.	19.76%	65
I encountered challenges when trying to explore an unfamiliar part of the County.	38.30%	126
I was unable to locate another on-street bicycle facility.	22.19%	73
I could not find how to get to an off-street path from the on-street bicycle network.	32.83%	108
I lost my way due to too many turns in my route.	7.60%	25
I could not easily find a place to safely lock my bicycle.	39.21%	129
I could have used better direction when my route was interrupted due to construction activity or other temporary closure.	32.83%	108
Other (please specify)	20.67%	68
Total Respondents: 329		

Figure B-35: Survey Monkey 2016 Question 6

Q6 When riding OFF-STREET bicycle facilities (i.e. paths or trails), which of the following challenges have you experienced? Select all that apply.

Answered: 291 Skipped: 98



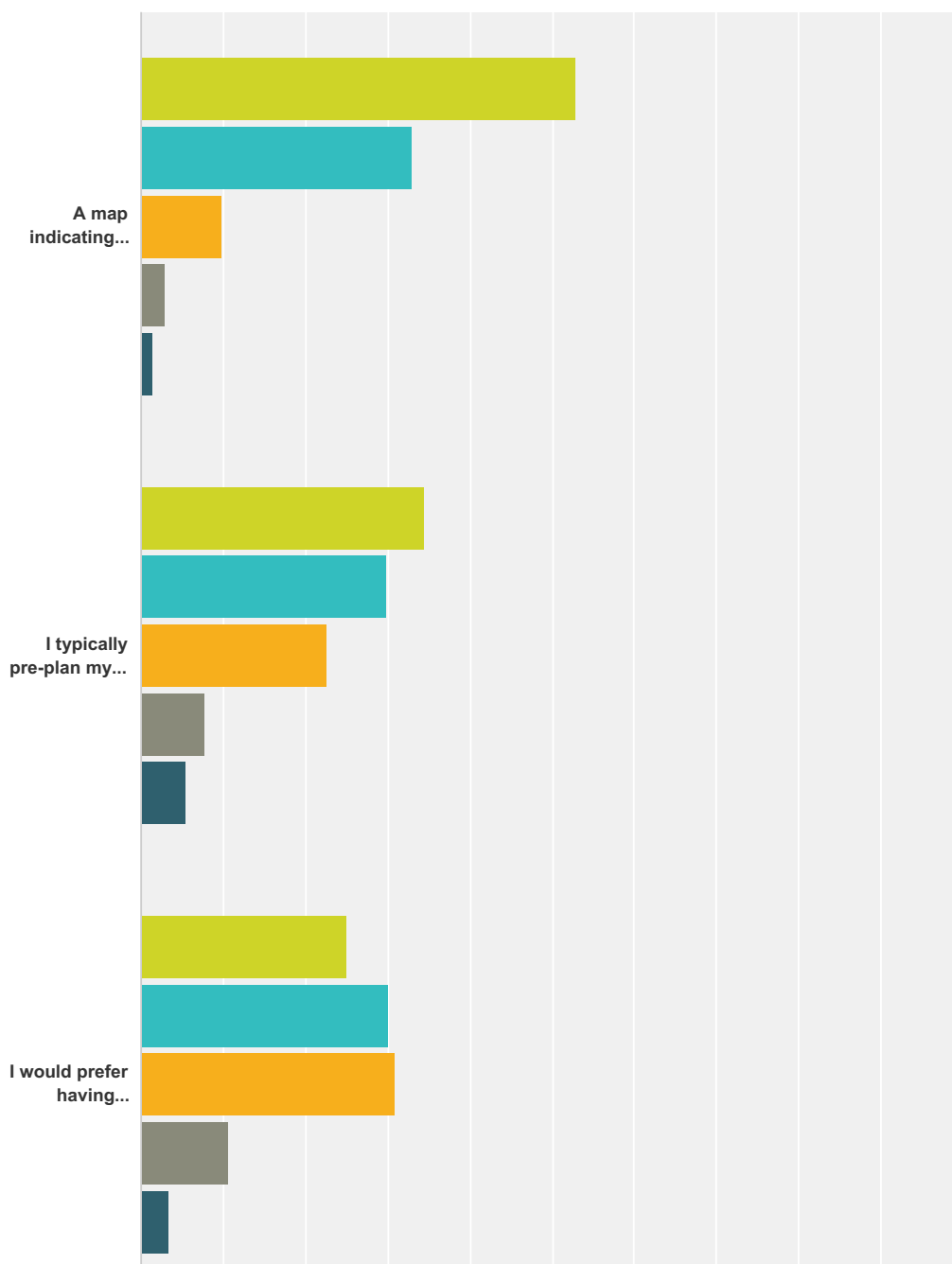
Survey Monkey 2016 Question 6 continued

Answer Choices	Responses	
I lost my way when my path terminated/ended.	20.27%	59
I lost my way due to a gap in the path network.	23.02%	67
I encountered difficulty locating my destination from the path.	21.31%	62
I encountered challenges when trying to explore an unfamiliar part of the path network.	28.87%	84
I was unable to locate my intended trailhead, trail access point, or parking.	23.02%	67
I was not sure how to locate an on-street bicycle facility from an off-street pathway.	26.46%	77
I could not easily find a place to safely lock my bicycle.	27.15%	79
I could have used better direction when my route was interrupted due to construction activity or other temporary closure.	13.06%	38
My route was not clear through a park or other area where more than one path was present.	27.49%	80
I was unable to locate a connecting path.	34.02%	99
I misjudged the distance I had traveled.	12.03%	35
Other (please specify)	15.81%	46
Total Respondents: 291		

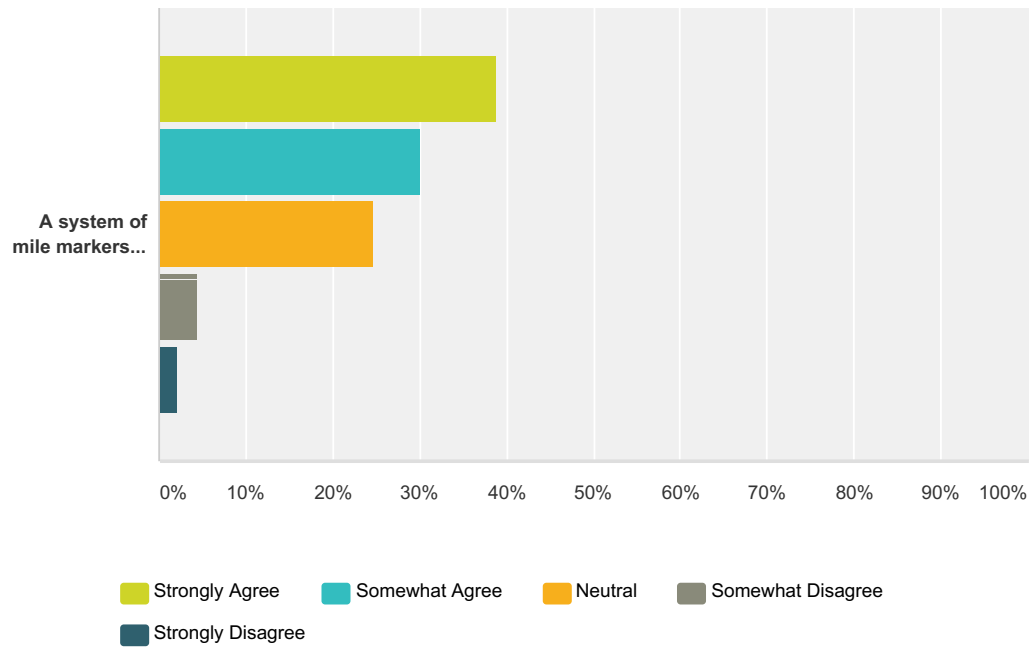
Figure B-36: Survey Monkey 2016 Question 7

Q7 Please rate your level of agreement with the following statements about existing bicycle facilities in Ventura County

Answered: 337 Skipped: 52

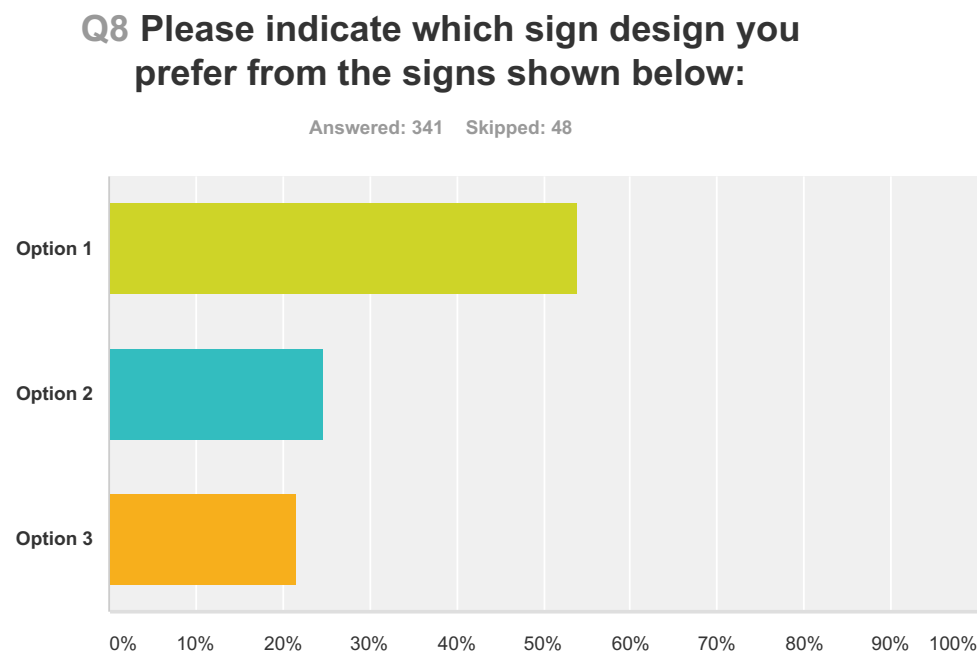


Survey Monkey 2016 Question 7 continued



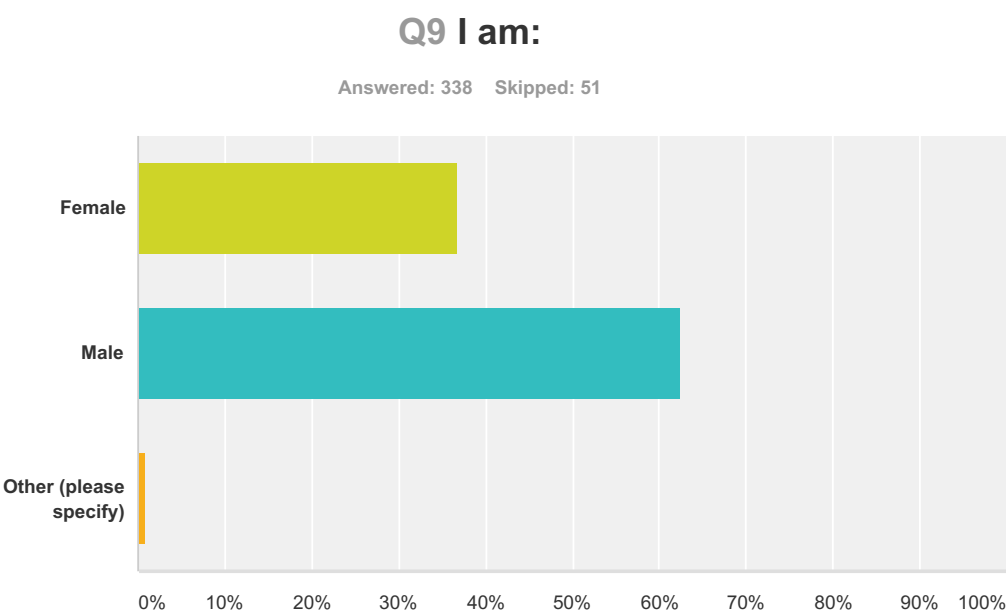
	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree	Total
A map indicating destinations accessible along and near the pathway network would help me discover new places to travel by bicycle.	52.82% 178	32.94% 111	9.79% 33	2.97% 10	1.48% 5	337
I typically pre-plan my route using web based information.	34.52% 116	29.76% 100	22.62% 76	7.74% 26	5.36% 18	336
I would prefer having wayfinding information on demand using a smartphone instead of other forms of information.	25.00% 84	30.06% 101	30.95% 104	10.71% 36	3.27% 11	336
A system of mile markers indicating travel distance would improve the pathway network.	38.87% 131	29.97% 101	24.63% 83	4.45% 15	2.08% 7	337

Figure B-37: Survey Monkey 2016 Question 8



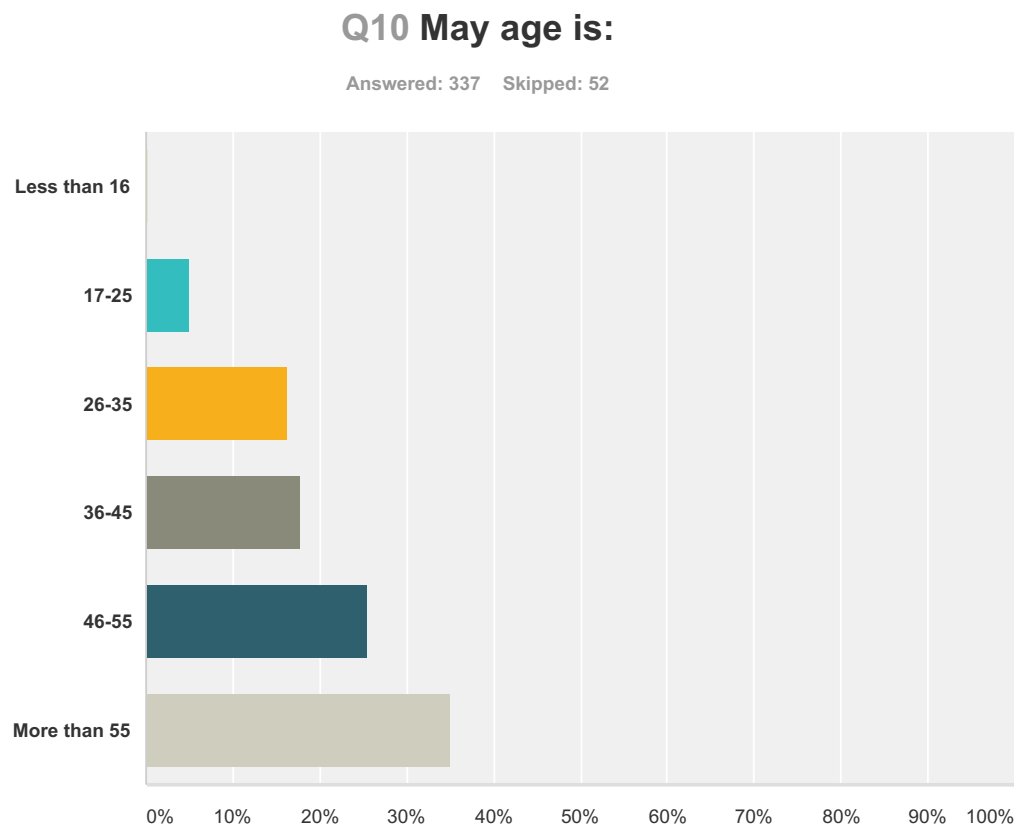
Answer Choices	Responses	
Option 1	53.96%	184
Option 2	24.63%	84
Option 3	21.41%	73
Total		341

Figure B-38: Survey Monkey 2016 Question 9



Answer Choices	Responses	
Female	36.69%	124
Male	62.43%	211
Other (please specify)	0.89%	3
Total		338

Figure B-39: Survey Monkey 2016 Question 10



Answer Choices	Responses
Less than 16	0.30%1
17-25	5.04%17
26-35	16.32%55
36-45	17.80%60
46-55	25.52%86
More than 55	35.01%118
Total	337

Figure B-40: Survey Monkey 2016 Question 11

Q11 What is the zipcode where you live?
Answered: 337 Skipped: 52

Figure B-41: Survey Monkey 2016 Question 12

**Q12 Please enter your email address below
if you would like to stay informed about the
VCTC Regional Bike Wayfinding Project.**
Answered: 149 Skipped: 240

Answer Choices	Responses	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	149
Phone Number	0.00%	0

C: REGIONAL DESTINATIONS

This appendix contains the proposed regional destinations. The tables on the following pages provide information about priority signing distances (Tier), Name of destinations, destination category, destination sub category, signed name, and the number of lines.

ABBREVIATIONS

When placing destination names on signs, the use of abbreviations should be kept to a minimum whenever possible. When insufficient space is available for full wording, abbreviations may be used.

CA MUTCD accepted abbreviations are included in the table below. Unless necessary to avoid confusion, periods, commas, apostrophes, question marks, ampersands, and other punctuation marks or characters that are not letters or numerals should not be used in any abbreviation.

Table C-5: CA MUTCD Approved Abbreviations

Word Message	Abbreviation
Alternate	ALT
Avenue	AVE
Bicycle	BIKE
Boulevard	BLVD
Bridge	BR
Center	CRT
Circle	CIR
Court	CT
Crossing	X-ING
Drive	DR
East	E
Hospital	HOSP
Information	INFO
International	INTL
Junction	JCT
Mile(s)	MI
Miles Per Hour	MPH

Word Message	Abbreviation
Minutes(s)	MIN
Mount	MT
Mountain	MTN
National	NATL
North	N
Parkway	PKWY
Pedestrian	PED
Place	PL
Road	RD
Saint	ST
South	S
Street	ST
Telephone	PHONE
Terrace	TER
Trail	TR
West	W

TIER	Actual Name	Category	Sub Category	Signed Name	# of Lines
1	Agoura Hills	City	Adjacent	Agoura Hills	1
1	Carpinteria	City	Adjacent	Carpinteria	1
1	Malibu	City	Adjacent	Malibu	1
1	Santa Clarita	City	Adjacent	Santa Clarita	1
1	Westlake Village	City	Adjacent	Westlake Village	2
1	Camarillo	City	Ventura County	Camarillo	1
1	Fillmore	City	Ventura County	Fillmore	1
1	Moorpark	City	Ventura County	Moorpark	1
1	Ojai	City	Ventura County	Ojai	1
1	Oxnard	City	Ventura County	Oxnard	1
1	Piru	City	Ventura County	Piru	1
1	Port Hueneme	City	Ventura County	Pt Hueneme	1
1	Santa Paula	City	Ventura County	Santa Paula	1
1	Simi Valley	City	Ventura County	Simi Valley	1
1	Thousand Oaks	City	Ventura County	Thousand Oaks	2
1	Ventura	City	Ventura County	Ventura	1
1	Los Angeles County	County	Adjacent	Los Angeles County	2
1	Santa Barbara County	County	Adjacent	Santa Barbara County	2
1	Bell Canyon	Unincorporated community	Ventura County	Bell Canyon	1
1	Casa Conejo	Unincorporated community	Ventura County	Casa Conejo	1
1	El Rio	Unincorporated community	Ventura County	El Rio	1
1	Lake Sherwood	Unincorporated community	Ventura County	Lake Sherwood	2
1	Meiners Oaks	Unincorporated community	Ventura County	Meiners Oaks	1
1	Mira Monte	Unincorporated community	Ventura County	Mira Monte	1
1	Oak Park	Unincorporated community	Ventura County	Oak Park	1

TIER	Actual Name	Category	Sub Category	Signed Name	# of Lines
1	Oak View	Unincorporated community	Ventura County	Oak View	1
1	Santa Rosa Valley	Unincorporated community	Ventura County	Santa Rosa Valley	2
1	Santa Susana	Unincorporated community	Ventura County	Santa Susana	1
1	Saticoy	Unincorporated community	Ventura County	Saticoy	1
1	Somis	Unincorporated community	Ventura County	Somis	1
2	Emma Wood State Beach	Beach	State Beach	Emma Wood State Beach	2
2	McGrath State Beach	Beach	State Beach	McGrath State Beach	2
2	San Buenaventura State Beach	Beach	State Beach	San Buenaventura State Beach	3
2	Carpinteria State Beach	Beach	State Beach-Adjacent	Carpinteria State Beach	2
2	Sycamore Cove Beach	Beach	State Park	Sycamore Cove Beach	2
2	Downtown Carpinteria	Commercial Center	Downtown	Downtown Carpinteria	2
2	Downtown Oxnard	Commercial Center	Downtown	Downtown Oxnard	2
2	Downtown Ventura	Commercial Center	Downtown	Downtown Ventura	2
3	Ojai Village	Commercial Center	Downtown	Ojai Village	1
2	Channel Islands Harbor	Harbor		Channel Islands HBR	2
2	Ventura Harbor	Harbor		Ventura HBR	1
2	Olivas Adobe Historical Park	Park	Historical Place/ State Historic Landmark	Olivas Adobe	1
2	Camp Comfort Park	Park	Regional Park	Camp Comfort	1
2	Dennison Park	Park	Regional Park	Dennison Prk	1
2	Foster Park	Park	Regional Park	Foster Prk	1
2	Happy Camp Canyon Park	Park	Regional Park	Happy Camp Canyon Park	2
2	Oak Park	Park	Regional Park	Oak Park	1

TIER	Actual Name	Category	Sub Category	Signed Name	# of Lines
2	Santa Rosa Valley Park	Park	Regional Park	Santa Rosa Valley Park	2
2	Soule Golf Course	Park	Regional Park	Golf Course	1
2	Soule Park	Park	Regional Park	Soule Park	1
2	Steckel Park	Park	Regional Park	Steckel Park	1
2	Tapo Canyon Park	Park	Regional Park	Tapo Cyn Prk	1
2	Toland Park	Park	Regional Park	Toland Park	1
2	Point Mugu State Park	Park	State Park	Pt Mugu S.P.	1
2	Carpinteria City Beach	Park		Carpinteria City Beach	2
2	Coast Route	Trail	Regional	Coast Route	1
2	Ojai Valley Trail	Trail	Regional	Ojai Valley Trail	2
2	Santa Paula Branchline	Trail	Regional	Santa Paula Branchline	2
2	Simi Valley Greenway	Trail	Regional	Simi Valley Greenway	2
2	Amtrak Carpinteria Station	Transit Station	Adjacent	Amtrak Stn	1
2	Amtrak Santa Barbara Station	Transit Station	Adjacent	Amtrak Stn	1
2	Vista Bus Carpinteria Stop	Transit Station	Adjacent	Vista Bus Stop	1
2	Camarillo Metrolink/Amtrack Station	Transit Station	Ventura County	Amtrak/Metro	1
2	Moorpark Metrolink/Amtrack Station	Transit Station	Ventura County	Amtrak/Metro	1
2	Oxnard Amtrak/Metrolink Station	Transit Station	Ventura County	Amtrak/Metro	1
2	Ventura Amtrak Station	Transit Station	Ventura County	Amtrak Stn	1
3	Mandalay County Park	Beach	County Beach	Mandalay Prk	1
3	Faria Beach Park	Beach	County Park	Faria Beach	1
3	Hobson Beach Park	Beach	County Park	Hobson Beach	1
3	Rincon Beach Park	Beach	County Park	Rincon Beach	1
3	Oxnard Beach Park	Beach	Local	Oxnard Beach	1
3	Mondos Beach	Beach	Local Beach	Mondos Bch	1

TIER	Actual Name	Category	Sub Category	Signed Name	# of Lines
3	Port Hueneme Beach	Beach	Local Beach/Park	PT Hueneme	1
3	Surfers Point Park	Beach	Local Park	Surfers Pt Bch	1
3	Brooks Institute	College/University	Private	Brooks Inst.	1
3	CA Lutheran University	College/University	Private	CA Luth Univ	1
3	Thomas Aquinas College	College/University	Private	Thomas Aquinas Col	2
3	California State University Channel Islands	College/University	Public	CSUCI	1
3	Moorpark College	College/University	Public	Moorpark Col	1
3	Oxnard College	College/University	Public	Oxnard Col	1
3	Ventura Adult and Continuing Ed	College/University	Public	Ventura Continuing Ed	2
3	Ventura College	College/University	Public	Ventura Col	1
3	Ventura Farmers Market	Commercial Center	Market	Farmers Mrkt	1
3	Esplanade Mall	Commercial Center	Shopping / Mall	The Esplanade	1
3	Esplanade Shopping Center	Commercial Center	Shopping / Mall	Esplanade S.C.	1
3	North Ranch Mall Shopping Center	Commercial Center	Shopping / Mall	No Ranch Mall	1
3	Pacific View Mall	Commercial Center	Shopping / Mall	Pac View Mall	1
3	Simi Valley Town Center	Commercial Center	Shopping / Mall	Simi Val Ctr	1
3	The Collection	Commercial Center	Shopping / Mall	The Collection	1
3	The Collection Riverpark	Commercial Center	Shopping / Mall	Collection RP	1
3	The Oaks Shopping Center	Commercial Center	Shopping / Mall	Oaks Shop Ctr	1
3	Conejo Valley Botanic Garden	Cultural	Local	Conejo Gdn	1
3	Agriculture Museum	Cultural		Agric Museum	1
3	Aviation Museum Santa Paula	Cultural		AMSP	1
3	Camarillo Airport	Cultural		Camarillo Arpt	1
3	Carnegie Art Museum	Cultural		Art Museum	1

TIER	Actual Name	Category	Sub Category	Signed Name	# of Lines
3	Channel Islands Maritime Museum	Cultural		Maritime Mus	1
3	Museum of Ventura County	Cultural		Ventura Mus	1
3	Ocean Ave Pier	Cultural		Pier	1
3	Reagan Foundation Library/Museum	Cultural		Reagan Lib	1
3	Santa Paula Art Museum	Cultural		Art Museum	1
3	Simi Valley Cultural Arts Center	Cultural		Cultural Arts	1
3	The Murphy Auto Museum	Cultural		Auto Museum	1
3	Thousand Oaks Civic Arts Plaza	Cultural		T.O. Civic Arts	1
3	Ventura County Fairgrounds	Cultural		Fairgrounds	1
3	Ventura Pier	Cultural		Ventura Pier	1
3	Community Memorial Hospital	Employment Center	Medical Facility	Mem. Hosp.	1
3	Ventura County Hospital Complex	Employment Center	Medical Facility	VC Hospital	1
3	Amgen Campus	Employment Center		Amgen	1
3	Naval Construction Battalion Center Port Hueneme	Employment Center		Naval Center	1
3	Ventura County Government Center	Employment Center		Govrnmt Ctr	1
3	Borchard Park	Park	Community Park	Borchard Park	1
3	Dos Vientos Ranch Park	Park	Community Park	Dos Vientos Ranch Park	2
3	Lake Casitas Recreation Area	Park	Community Park	Lake Casitas Rec Area	2
3	Plaza Park	Park	Community Park	Plaza Park	1
3	Arroyo Conejo Open Space	Park	Local	Arroyo Conejo	1
3	Sespe Gorge	Park		Sespe Gorge	1
3	Ventura Community Park	Park		Ventura Park	1
3	Calleguas Creek Bike Path	Trail	Local Trails	Calleguas Crk	1

D: WAYFINDING SIGN CONCEPT DEVELOPMENT

D-1 Sign Concept Design Overview

Venutra County wayfinding sign concepts were developed through outreach to jurisdictions and the public, and multiple meetings with the Transportation Technical Advisory Committee (TTAC) and TTAC Subcommittee.

The process began with outreach to determine the unique needs of each jurisdiction. From these results, discussed in more detail below, four initial sign design concepts were developed (Figure D-3, Figure D-4, Figure D-5, and Figure D-6). Gateway signage (Figure D-7) was also developed to supplement any of the four initial concepts.

These four sign design concepts were then presented to the TTAC Subcommittee, as well as to the public at two outreach events. In October and December 2016, the concepts were presented at the Thousand Oaks Street Fair and the Channel Islands Farmers' Market, respectively. Additionally, surveys, online mapping, and bicycle audits were conducted throughout the sign development process. More information about community outreach is detailed in Appendix C.

Following public outreach and further discussion with the TTAC and TTAC Subcommittee, the wayfinding sign designs were refined to three concepts (Figures A-8 to A-11). The final sign design concept was then determined by the Ventura County Transportation Commision Board.





Figure D-1: VCTC TTAC sign preferences on the MUTCD spectrum.

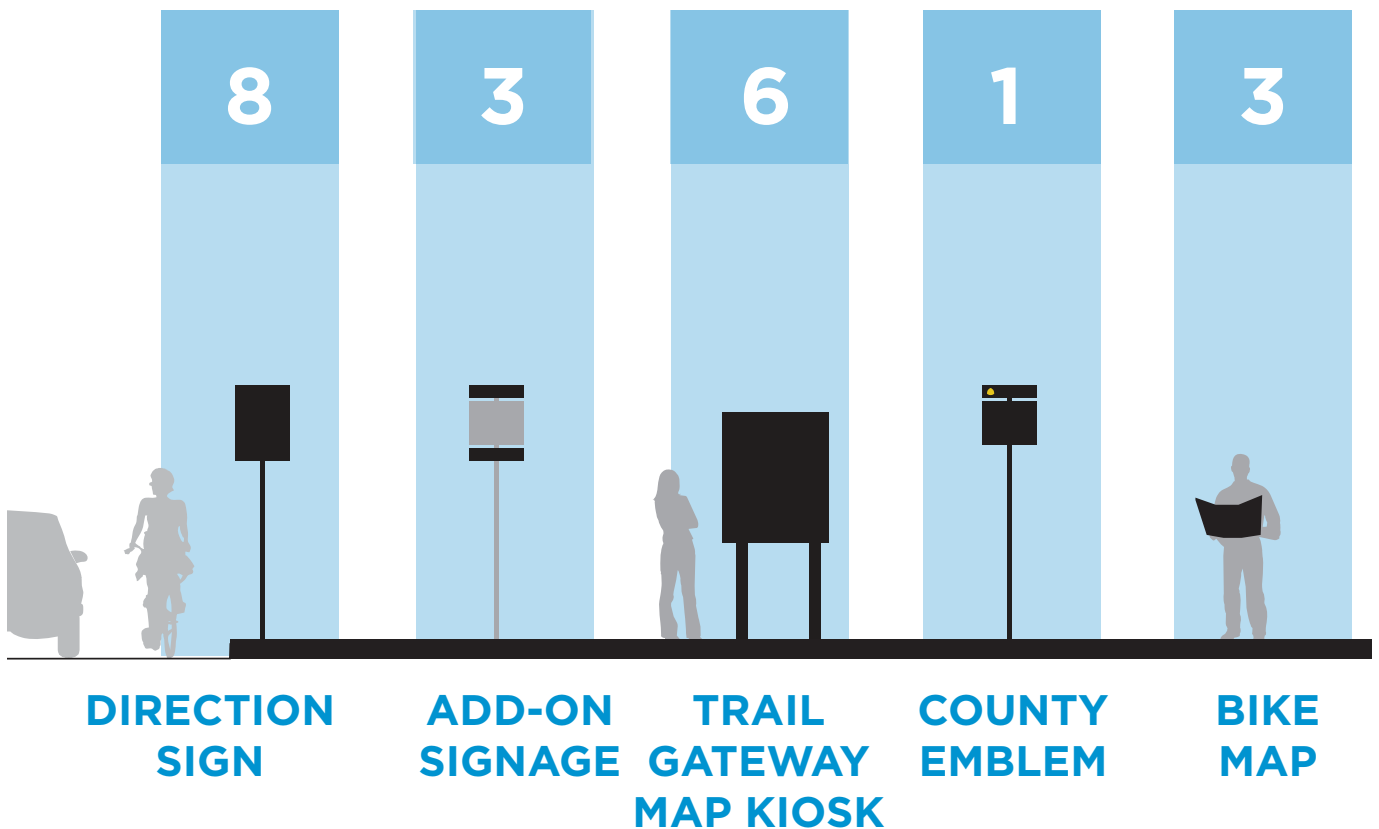


Figure D-2: VCTC TTAC preferences regarding wayfinding sign types.

D-2: Phase 1 Sign Design Concepts

JURISDICTION COORDINATION OUTREACH

In order to determine the varied needs of each individual jurisdiction, a survey on wayfinding design standards and guidance was sent to the VCTC Transportation Technical Advisory Committee (TTAC) members. Results were used to determine the creative direction and wayfinding family specifics of the project.

Survey questions requested each jurisdiction to comment and include specific graphic and policy information on:

- Existing sign standards or design guidelines for regional bikeways and local bicycle wayfinding
- Existing logo or seal that would be needed or wanted on signage
- Existing policies or programming for installation or maintaining bicycle wayfinding signs
- If an in-house shop is used by the jurisdiction
- Where the jurisdiction fell on the MUTCD Guide Sign Spectrum on the following page.
- Which elements are most important (Trailhead gateway map kiosk, bike map, direction signs, add-on signage or emblems, or any others that weren't listed).

SURVEY RESULTS

Participants

The survey was completed by 9 respondents from the TTAC. These included representatives from the cities of Fillmore, Ojai, Santa Paula, Thousand Oaks, Camarillo, Ventura, Ventura County and VCTC.

Existing Standards

A majority of respondents stated that there were not currently local sign standards that regional bike signs need to follow nor design guidelines for bicycle wayfinding, though the majority did have existing bikeway signs. Though not in the majority, other responses included the use of CA MUTCD Standards, the desire or need for the jurisdiction's logo or city seal on signage, and current policies or programs for installing new bicycle wayfinding signage as well as maintenance of wayfinding signs.

Wayfinding Signage Preference

When asked to vote for a sign design preference along the MUTCD Spectrum from Standard Bicycle Guide Signs to more customized Community Wayfinding signs, respondents were split, as shown in Figure D-1.

The survey also asked preferences of wayfinding elements to be included in the plan. Almost unanimous support for direction signs and significant support for map kiosks. Responses are in Figure D-2.

Other notable responses were a desire for multiple county uniformity in wayfinding signage and the development of a bikeway app or other digital mapping element.

From these responses, four initial sign design concepts were developed (Figures A-3 to A-6).

Figure D-3: Phase 1 Sign Design Concept 1

CONCEPT 1: MODIFIED MUTCD

Modified bike guide signs include Ventura County name and space for jurisdictional logos. Maintains MUTCD Standard colors.

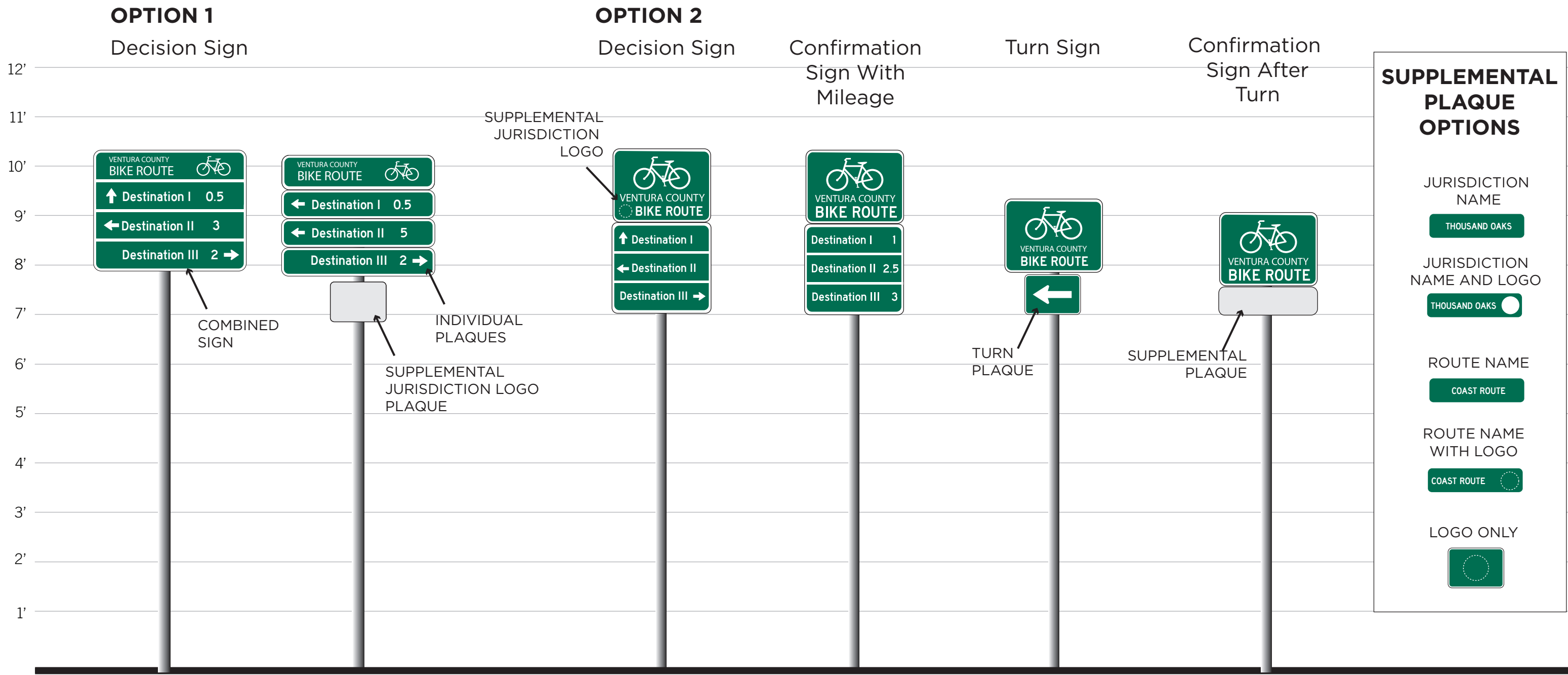


Figure D-4: Phase 1 Sign Design Concept 2

CONCEPT 2: ENHANED MUTCD

Provides user with distance and minutes to destination in conjunction with directional informationinformation as well as directions and trail or city confirmation. Maintains MUTCD Standard colors.

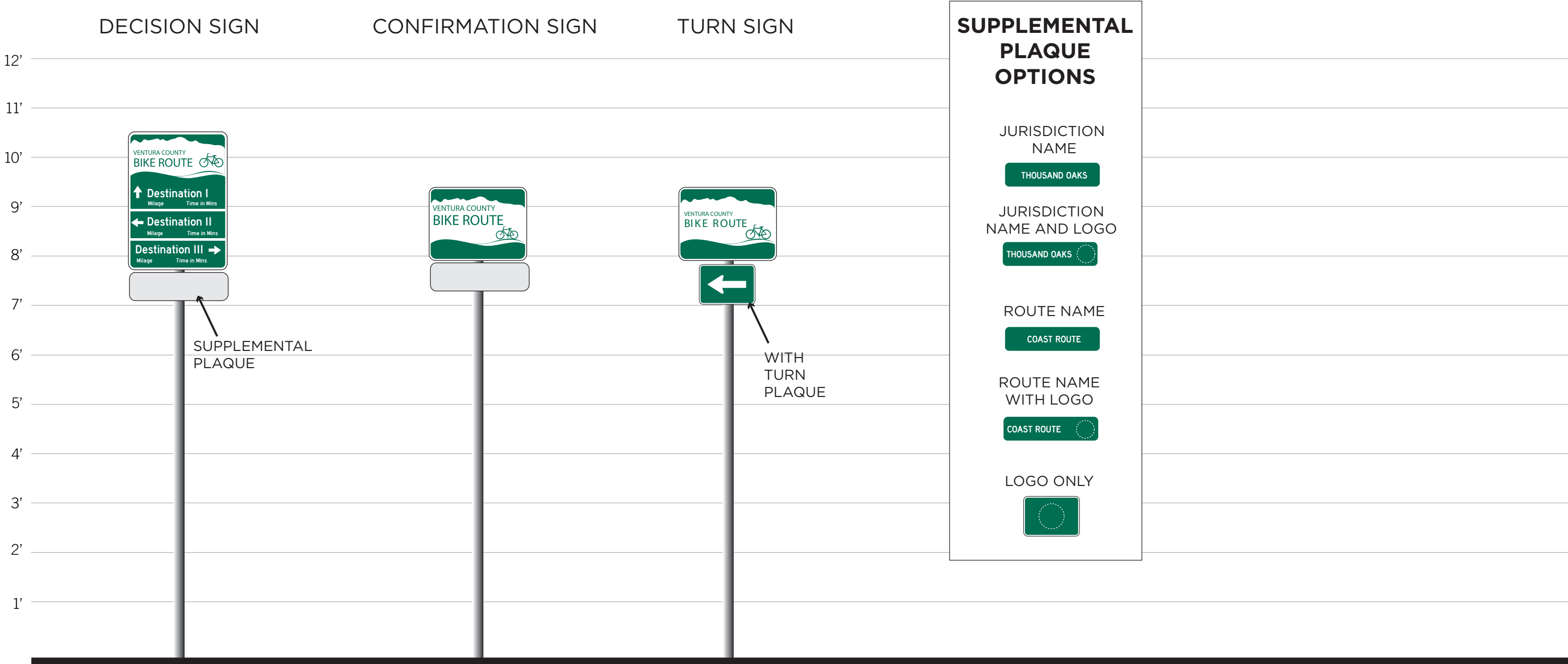


Figure D-5: Phase 1 Sign Design Concept 3

CONCEPT 3: FLEXIBLE DESIGN

Based on South Santa Barbara County bike wayfinding signs. Can be modified to be in compliance with MUTCD Community Wayfinding standards.



Figure D-6: Phase 1 Sign Design Concept 4

CONCEPT 4: VENTURA COUNTY BIKE ROUTE SIGN TOPPERS

Unique sign topper provides bike route branding with option to modify and create unique branding for each jurisdiction.

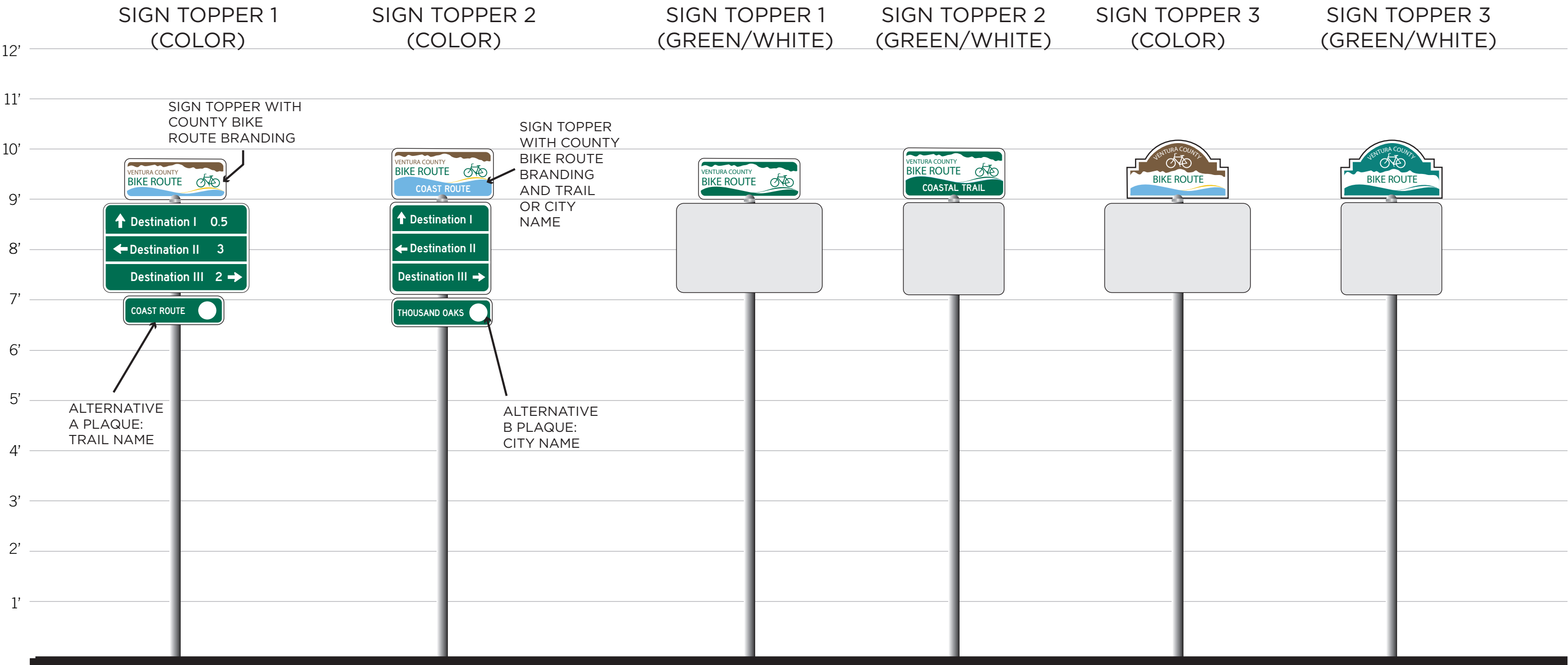
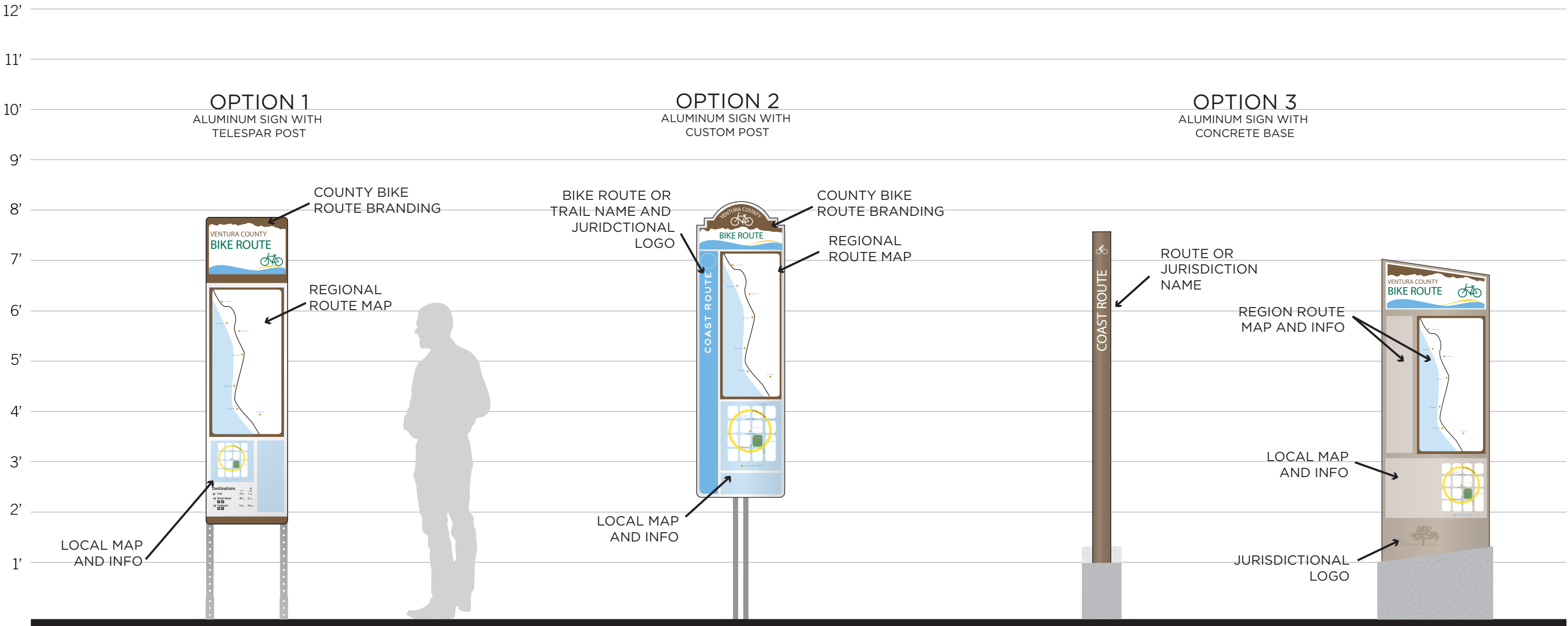


Figure D-7: Phase 1 Gateway Sign Design Concept

GATEWAY SIGNAGE OPTIONS



D-3: Phase 2 Sign Design Concepts

Figure D-8: Phase 2 Sign Design Concept 1

CONCEPT 1: COMBINED DISTANCE & MILAGE
Modified bike guide signs include Ventura County name.
Maintains MUTCD Standard colors.

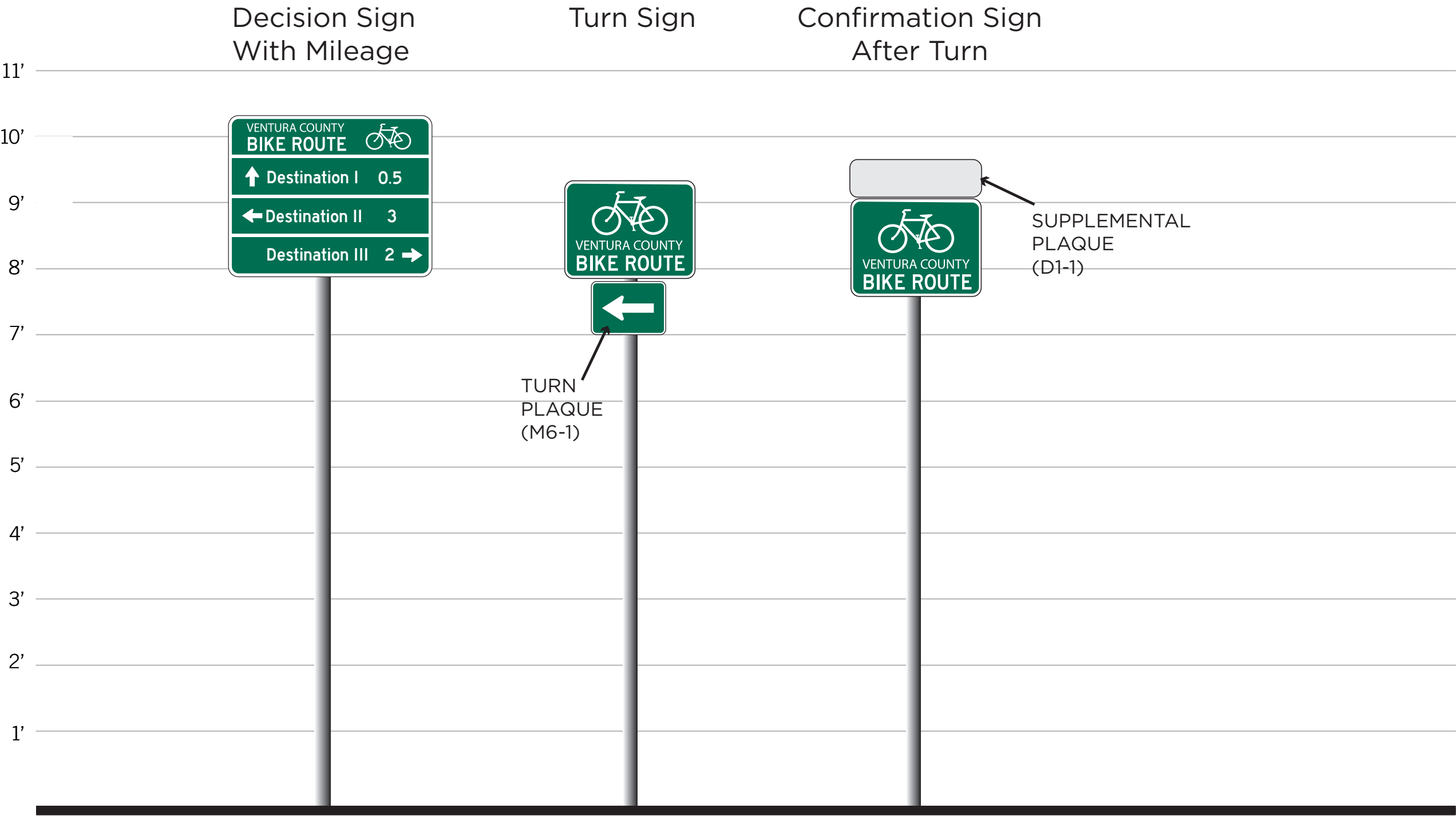


Figure D-9: Phase 2 Sign Design Concept 2

CONCEPT 2: MODIFIED MUTCD

Modified (D11-1) bike guide signs include Ventura County name.
Decision signs (with arrows) separate plaques from confirmation sign (with milage).
Maintains MUTCD Standard colors.

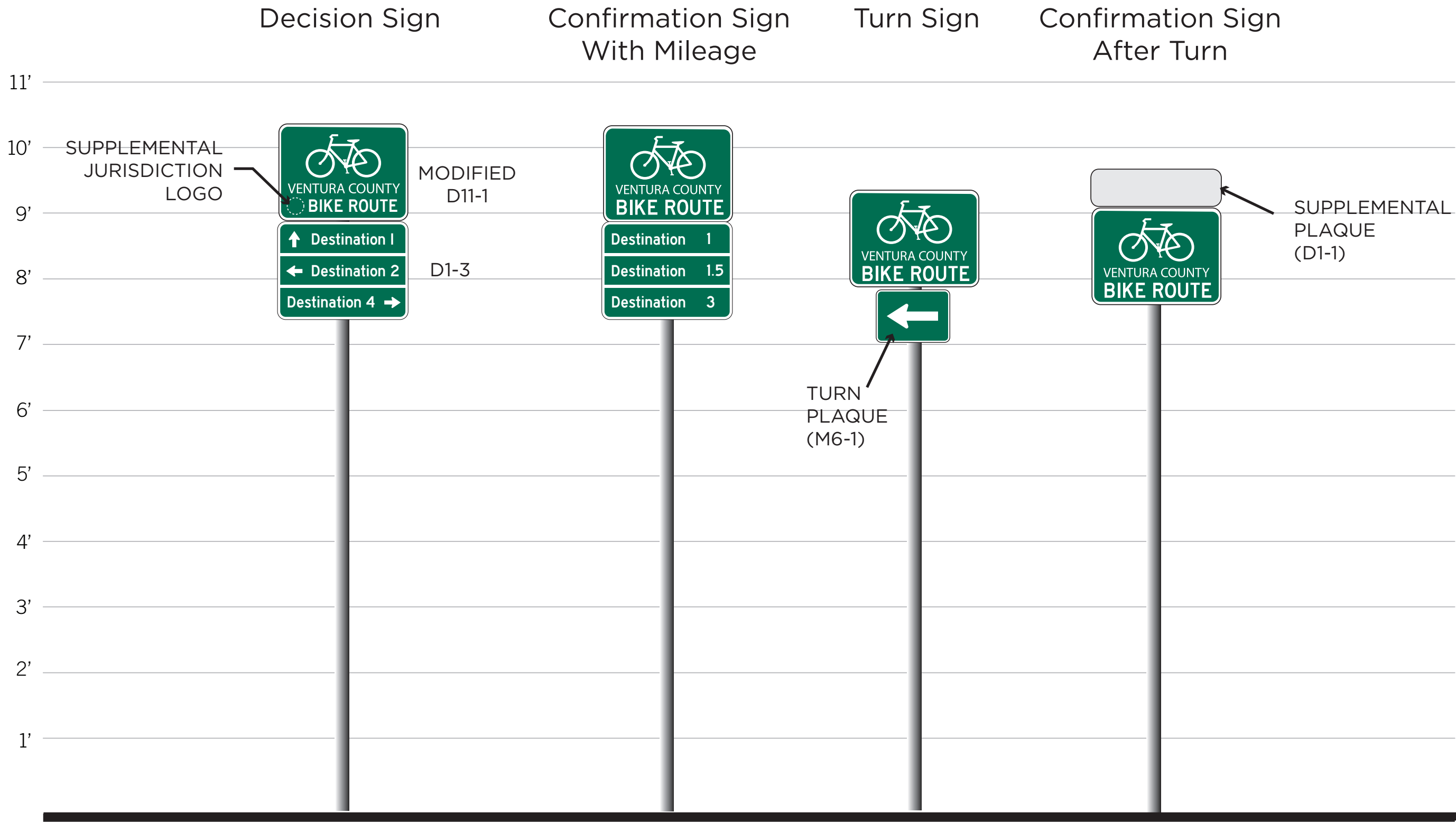


Figure D-10: Phase 2 Sign Design Concept 3A

CONCEPT 3A: SUNBURST - COLOR

Modified (D11-1) bike guide signs include sunburst bike logo based on South Santa Barbara County bike wayfinding sign
Decision signs (with arrows) separate plaques from confirmation sign (with mileage).
3 color logo.

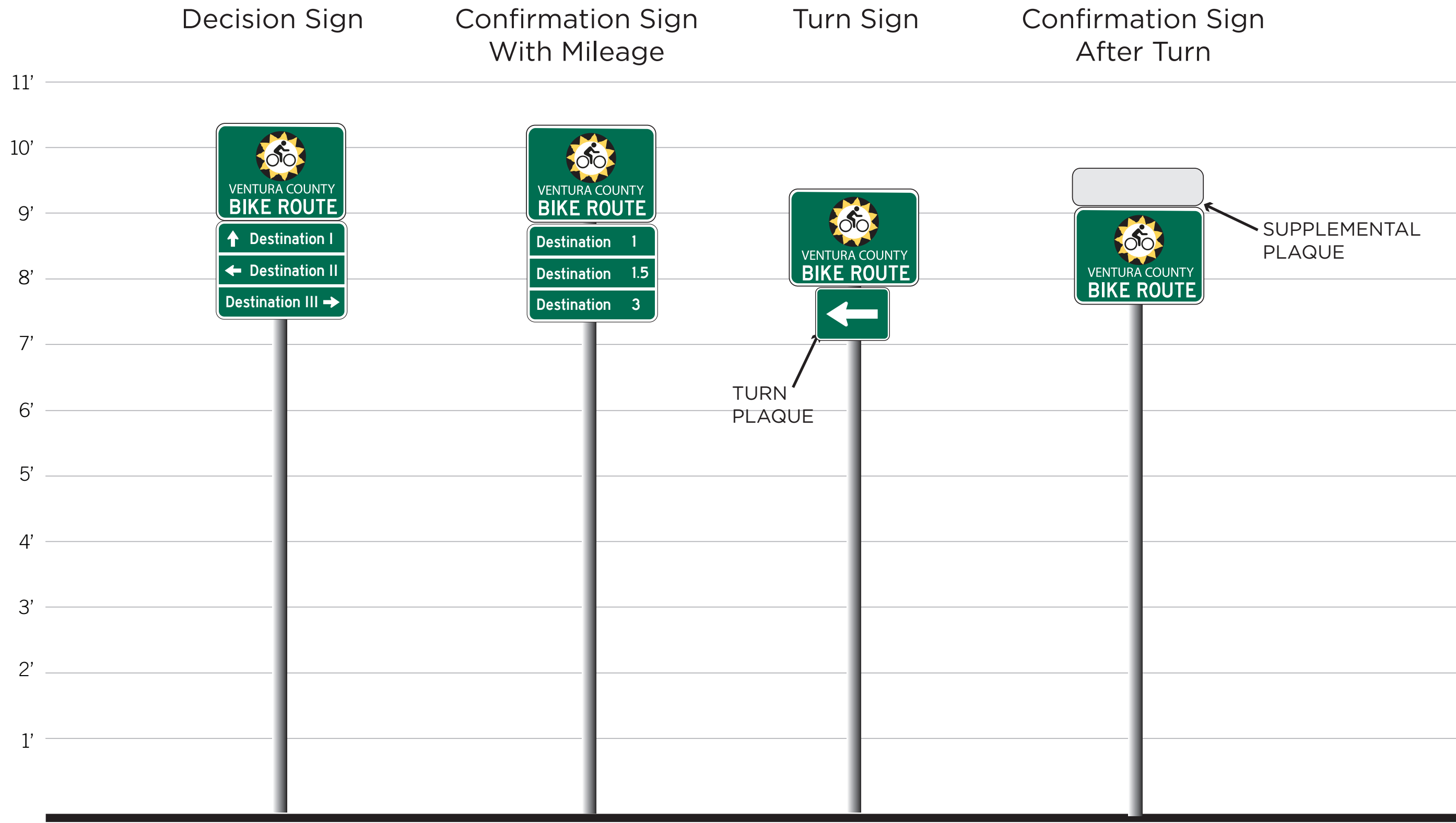
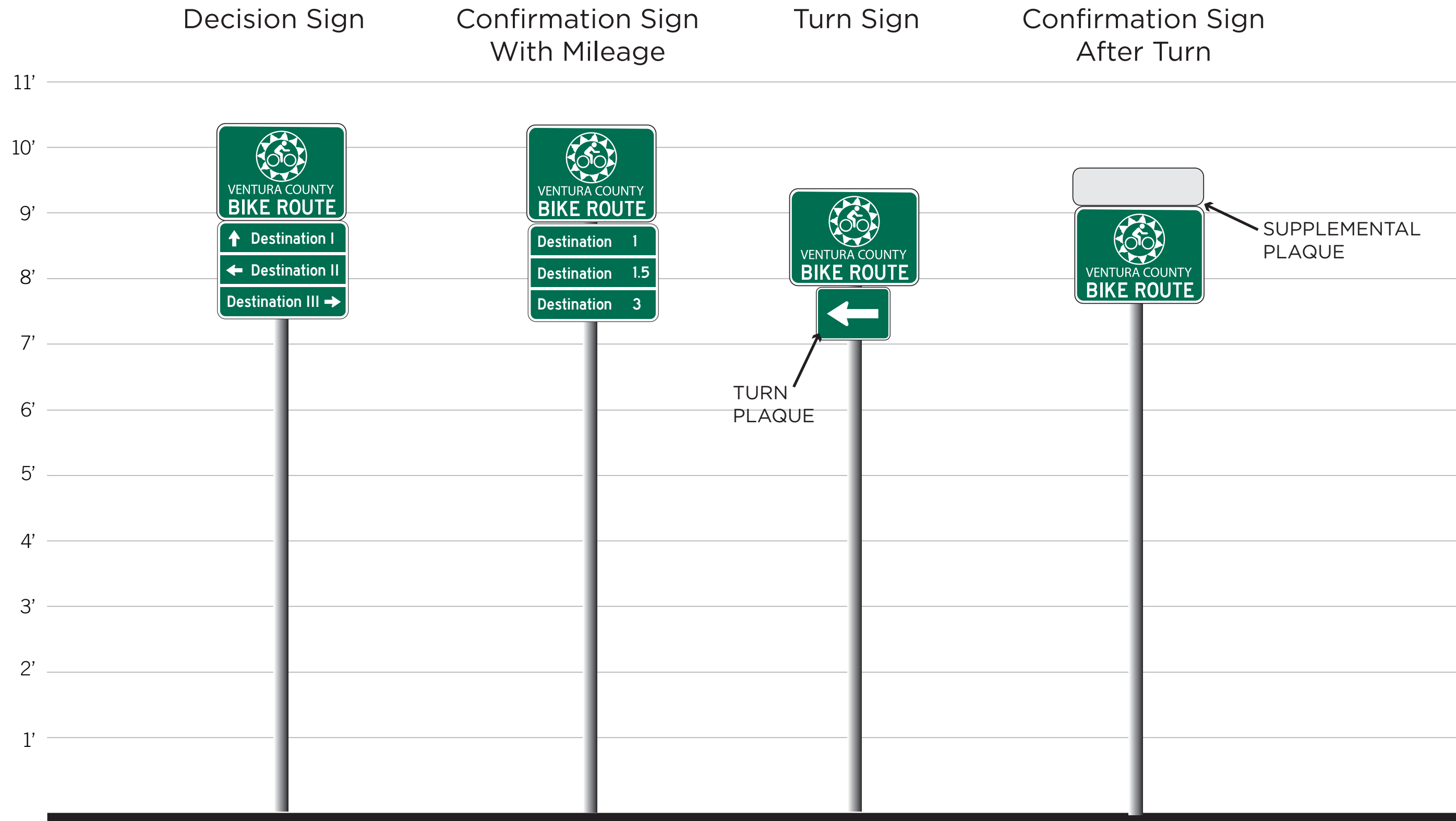


Figure D-11: Phase 2 Sign Design Concept 3B

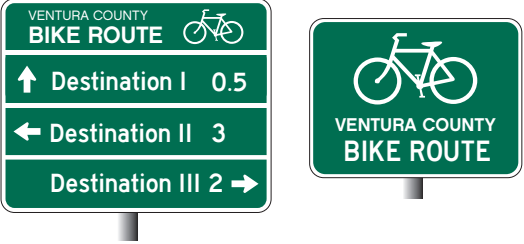

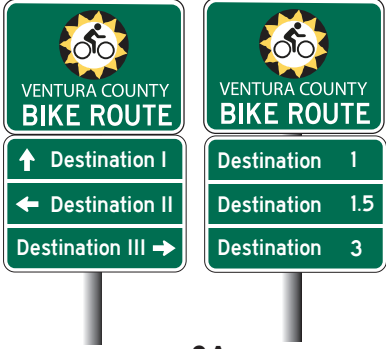
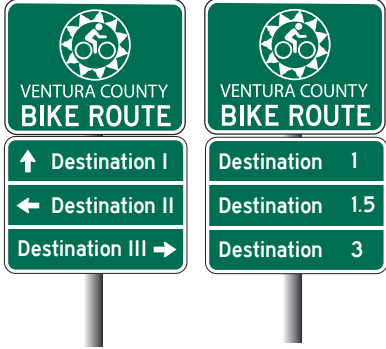
CONCEPT 3B: SUNBURST - GREEN & WHITE

Modified (D11-1) bike guide signs include sunburst bike logo based on South Santa Barbara County bike wayfinding sign
Decision signs (with arrows) separate plaques from confirmation sign (with milage).
Maintains MUTCD Standard colors.



ESTIMATED SIGN COSTS

Table D-4: Estimated Sign Costs Per 4-Way Intersection

CONCEPT	SIGN COST	WITH NEW POSTS
 <p>1A & 2A</p>	<p>4 SIGNS AT \$300 EACH + 4 SIGNS AT \$200 EACH =</p> <p>\$2,000</p>	<p>\$4,200</p>
 <p>2A</p>	<p>8 SIGNS AT \$450 EACH =</p> <p>\$3,600</p>	<p>\$5,800</p>
 <p>3A</p>	<p>8 SIGNS AT \$505 EACH =</p> <p>\$4,040</p>	<p>\$6,240</p>
 <p>3B</p>	<p>8 SIGNS AT \$460 EACH =</p> <p>\$3,680</p>	<p>\$5,880</p>

E: ADDITIONAL WAYFINDING TECHNICAL GUIDANCE

INTRODUCTION

This appendix provides additional technical guidance and best practices associated with a bicycle wayfinding system plan to supplement Section 1.4.

ACCESSIBILITY STANDARDS

As wayfinding systems often relate to accessible routes or pedestrian circulation, it is important to consider technical guidance from the Americans with Disability Act (ADA) so that signs and other elements do not impede travel or create unsafe situations for pedestrians and/or those with disabilities. The Architectural and Transportation Barriers Compliance Board provides guidance for accessible design for the built environment. Standards which should be considered when designing and placing wayfinding signs include recommendations of vertical clearance, post mounted objects, protruding objects, required clear widths, and signs on shared use paths. Figure E-2 provides guidelines for clearances for signs providing universal access, while Figure E-1 to the left shows guidelines for post-mounted signs.

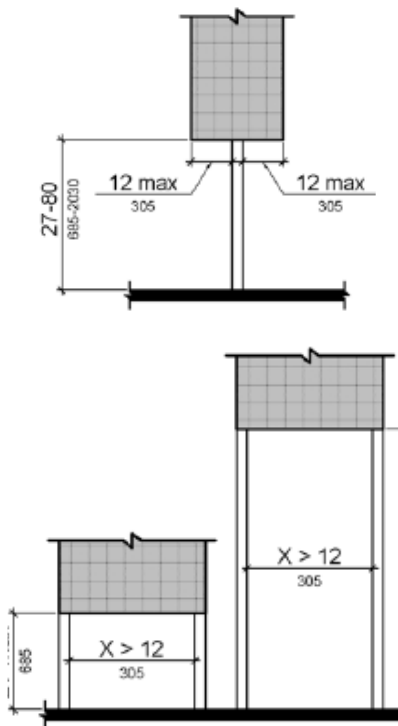


Figure E-1: Minimum Clearance for Post-Mounted Objects Diagram.

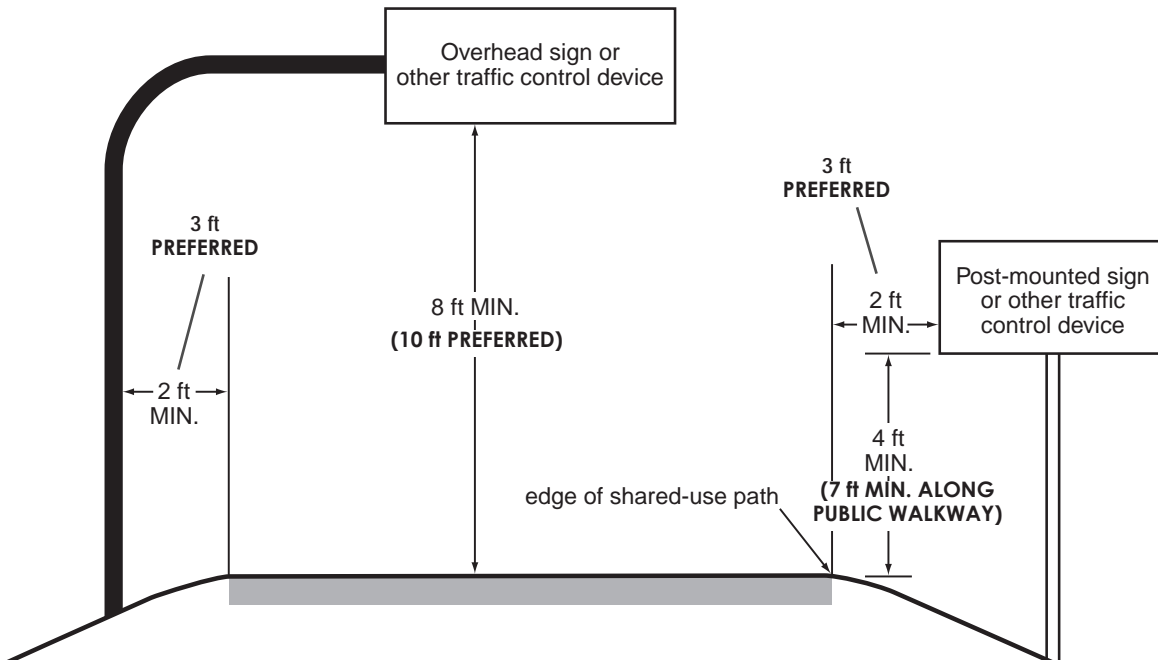


Figure E-2: Minimum Clearances on Shared-use Paths per (Caltrans Highway Design Manual Chapter 1000) AASHTO.

WAYFINDING SIGN PLACEMENT GUIDANCE

The Guide for the Development of Bicycle Facilities by the American Association of State Highway Transportation Officials, or AASHTO, provides information on the physical infrastructure needed to support bicycling facilities. The AASHTO guide largely defers to Part 9 of the California Manual on Uniform Traffic Control Devices, or CA MUTCD (discussed in Section 1.4) for basic guidelines related to the design of bicycle wayfinding systems.

ADDITIONAL INFORMATION FROM AASHTO REGARDING WAYFINDING:

- Many communities find that a wayfinding system for bicycles is a component of a bikeway network that enhances other encouragement efforts because it provides a visible invitation to new bike riders, while also encouraging current bikers to explore new destinations
- Bicycle wayfinding signs should supplement other infrastructure improvements so that conditions are favorable for biking, as signs alone do not improve safety or rider comfort
- Guide signs may be used to designate continuous routes that may be composed of a variety of facility types and settings
- Wayfinding guidance may be used to provide connectivity between two or more major bike facilities, such as a street with bike lanes and a shared use path
- Wayfinding may be used to provide guidance and continuity in a gap between existing sections of a bikeway, such as a bike lane or shared use path
- Road/path name signs should be placed at all path-roadway crossings to help users track their locations
- Reference location signs (mile markers) assist path users in estimating their progress, provide a means for identifying the location of emergency incidents, and are beneficial during maintenance activities
- On a shared use path, obstacles, including signs, shall be placed no closer than 24 inches from the near edge of the travel way and no more than 6 feet away. For pole mounted signs, the lowest edge of the sign shall be 4 feet above the existing ground plane

WAYFINDING TECHNOLOGIES

A number of wayfinding technologies exist to assist people riding bikes in finding and arriving at destinations. These are summarized in the following sections.

QR CODES

Quick response codes, called QR codes, are a smartphone technology that dynamically connect mobile users with digital content by taking a picture of a two-dimensional square bar code. These QR tags can link to websites or custom developed apps to be used without internet connection. Information can include destinations, maps, walking tours, local information, and social media-compatible experiences.

QR codes do have issues, including their ability to be manipulated or replaced with an overlay sticker. This can result in users being

GOALS MET

Sign Design

- 9 Local Economy
- 10 Technology

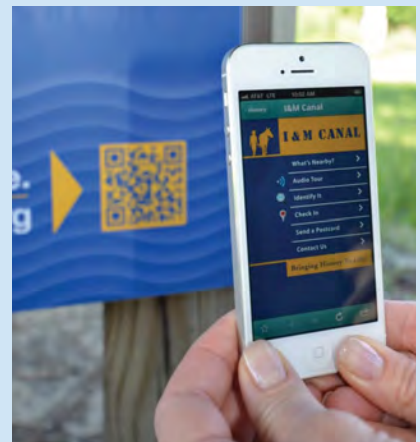
CASE STUDY:

ILLINOIS & MICHIGAN WAYFINDING PROGRAM

The Illinois & Michigan (I&M) Wayfinding Program includes 61 miles of shared use trails along the original 96-mile I&M Canal. A quality visitor experience was built around the combination of technology and accessible design. The 300 sign panels along the network each include a unique QR code that links visitors to information relevant to their specific location.

INFORMATION ASSOCIATED WITH THE QR CODES INCLUDES:

- Information on surrounding amenities
- Auditory narration of the history along the corridor
- Ability for users to ask questions and identify local flora and fauna
- Ability to connect users to friends through links to social media outlets and to send postcards from the trail to friends with personalized messages
- Encouragement for users to connect with agency staff regarding safety issues along the trail





The wayfinding scheme in Brighton and Hove has a united visual language between an app, walking map, and wayfinding signs.

directed to nefarious websites instead of the intended connection. Alternatives to QR codes include providing the direct website or a text message number to provide short messages on locations, often used by transit agencies to provide information specific to certain transit stops, or clickable links in the text reply.

QR tags along Ventura County's trails could provide similar dynamic interpretive information, provide fitness information and emergency contact information. The second alternative is to link users to a County sponsored website by launching a browser (internet connection required).

NFC TECHNOLOGY

Near-Field Communication, or NFC technology, allows data sharing between phones and other NFC-equipped devices. This technology is capable of transmitting videos, contact information, and photos between two NFC-enabled devices. NFC is limited to communication within 4 inches and devices do not need manual pairing or device-discovery. Once within range, the two devices connect and begin communicating and prompting users.

NFC technology could be incorporated into kiosks at trailheads where users could hold their device up to the sign and download relevant information such as maps, current conditions, or local events occurring nearby.

WAYFINDING APPLICATIONS

A cohesive wayfinding scheme not only includes signage, markings, and maps, but can also include smartphone applications (apps). Ventura County could utilize staff developers to create mobile applications in house by customizing an existing platform such as MobileSmith. Alternatively, private developers can be hired to create new native apps from scratch. These applications can be created from open data feeds to provide information on walking and biking routes, connections to public transit, trailhead locations with services (e.g. restrooms and drinking water), local events, construction updates, among others, or customized through private-public partnerships to create an application that is focused on specific users and needs.

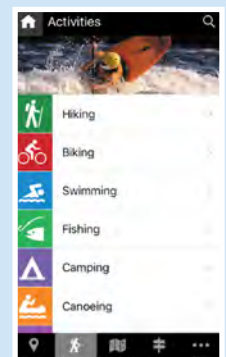
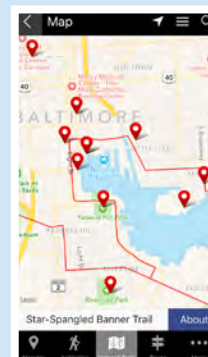
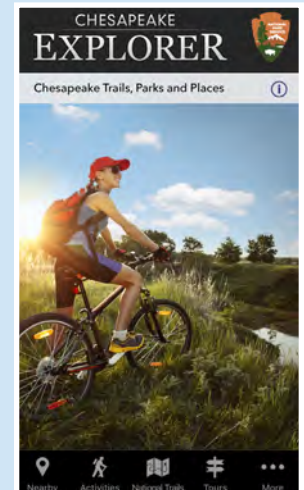
CASE STUDY:

CHESAPEAKE EXPLORER MOBILE APP

The Chesapeake Explorer app enables visitors to find and visit places by activity, trail name, or type of site. The app highlights suggested tours and includes a feature for users to build their own tour and map the route, supplementing traditional wayfinding elements to establish a cohesive experience throughout the large region.

KEY FEATURES OF CHESAPEAKE EXPLORER MOBILE APP INCLUDE:

- Connection to the NPS mobile app providing addresses, hours of operation, fees, and other helpful information for over 400 parks and historic sites
- Suggested history, driving, biking, or walking tours with turn-by-turn directions and approximate travel times
- Ability to create personal tours and save the route for viewing later. Edit tours anytime and get driving directions
- Ability for geo-location to find sites nearby and generates directions on demand to any site in the app
- Suggested destinations nearby or in selected search area; locates nearby opportunities for hiking, biking, boating, fishing, camping, and birdwatching; and locates nearby parks, preserves, trails, or historic sites and museums



SECTION 1 AND APPENDIX E REFERENCES

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