

# SONOMA VALLEY TRAIL

F E A S I B I L I T Y   S T U D Y  
*D R A F T*



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JANUARY 2016



# Sonoma Valley Trail Feasibility Study

Prepared for:

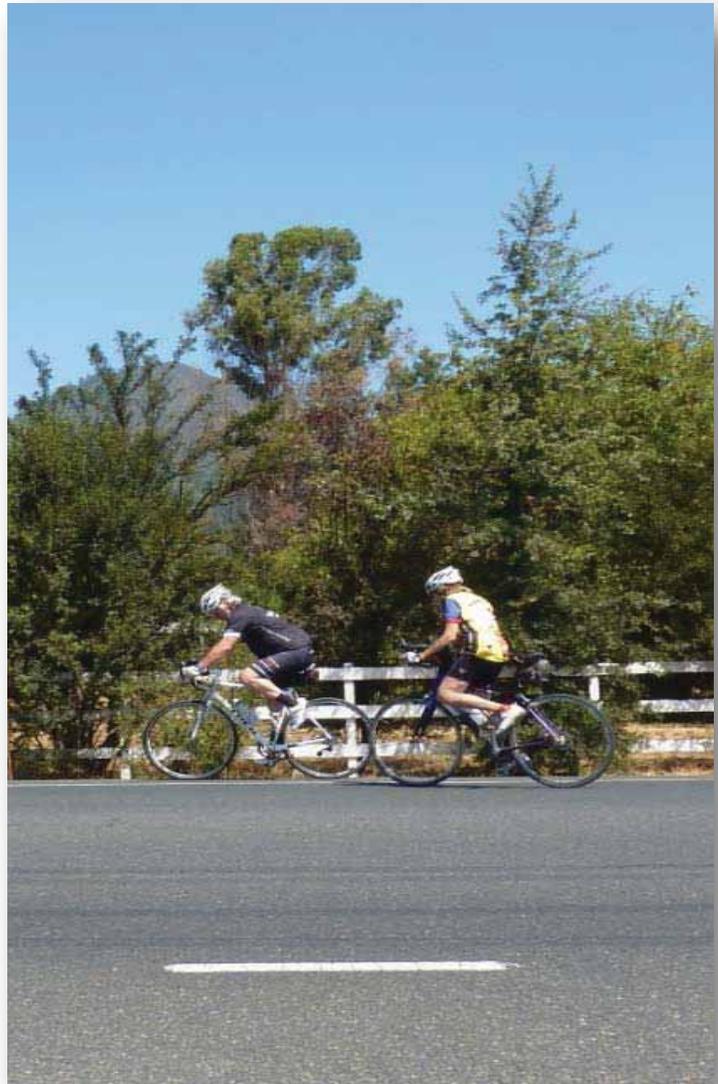
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Thank you to the community members and agency staff who, throughout the planning process, provided valuable input during public workshops and stakeholder meetings. This collaboration is key to successful implementation of the Sonoma Valley Trail as part of a connected trails network within Sonoma County.

The input of the public was crucial to the integrity of this plan, and we appreciate all who gave their time to serve as stakeholders, fill out surveys, voice their opinions and participate in interviews.

This project was funded with a Caltrans Community Based Transportation Planning Grant and local funds.

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## 1. INTRODUCTION

### 1.1 Purpose



Sonoma County Regional Parks was awarded a Caltrans Community-Based Transportation Planning Grant to prepare a feasibility study for a multi-modal trail along California State Route (Highway 12) in the Valley of the Moon. This bicycle, pedestrian and (where appropriate) equestrian trail network will provide recreational opportunities, serve local citizens and help connect schools, wineries, businesses and local shopping destinations without having to drive.

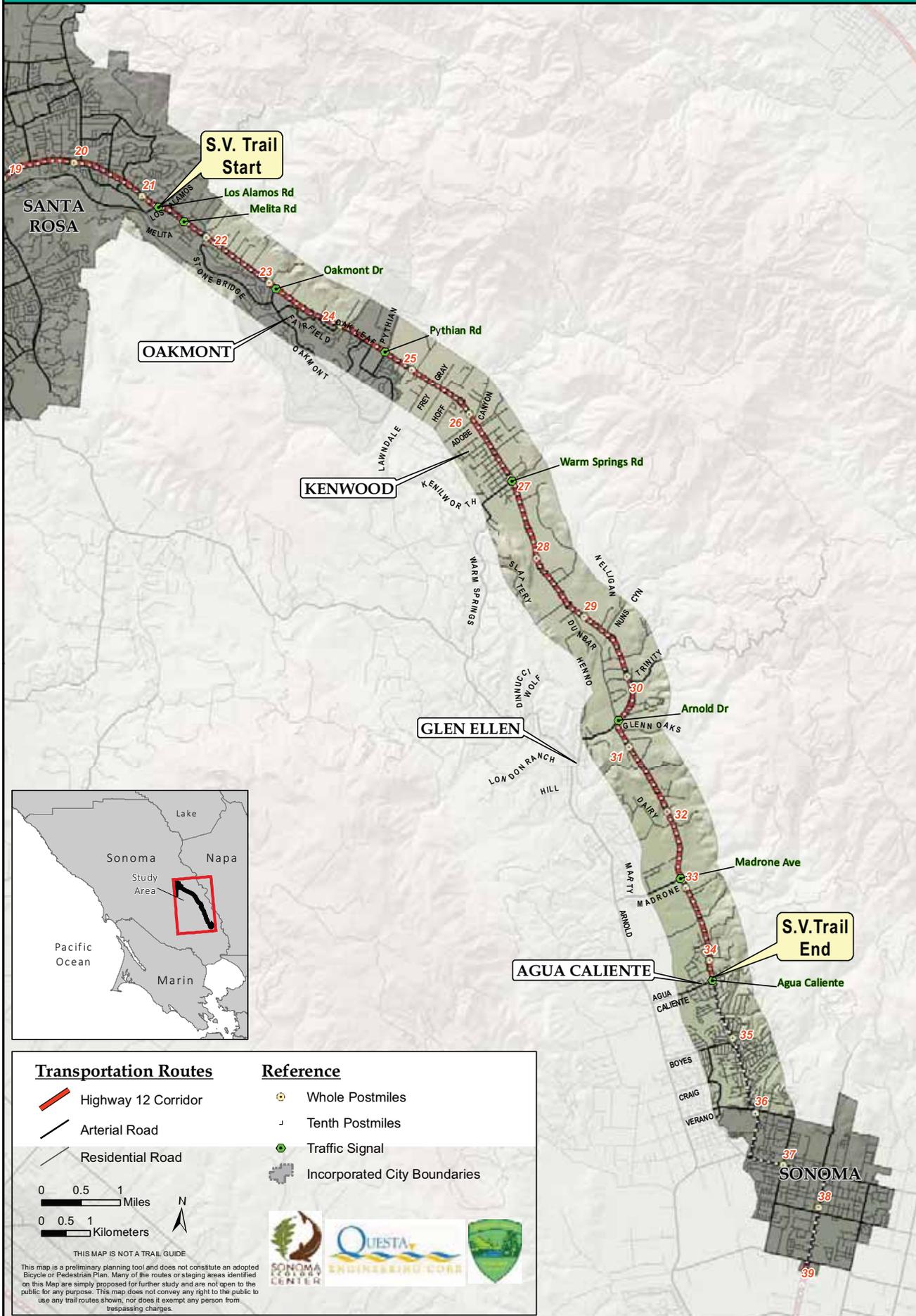
The Sonoma Valley Trail Feasibility Study provides a framework for a continuous and seamless multi-use path. The Study evaluates this thirteen mile corridor, identifying a network of improvements to serve bicycles, pedestrians and other users and to link existing and planned trails within Sonoma Valley, unincorporated Sonoma County and the City of Santa Rosa.

The Study includes recommendations and preliminary designs that are based on engineering feasibility, preliminary cost analysis, environmental conditions, community input, and operations and management challenges. The goal is to identify a trail corridor that is implementable, has public and stakeholder support, and is cost effective and environmentally sustainable.

### 1.2 Study Area

The Study area (**Figure 1-1**) encompasses a corridor beginning in Santa Rosa, where the trail will ultimately connect with trails in Santa Rosa, such as the Santa Rosa Southeast Greenway, a planned trail network along Caltrans right of way that will facilitate a cross-county connection to the Joe Rodota Trail and offer a comprehensive network of active transportation options, as well as connect to multimodal trails in the Sonoma Valley, City of Sonoma, and south Sonoma County.

# Sonoma Valley Trail Feasibility Study





## 2 OUTREACH

As a community based plan, the study included an extensive outreach effort, including workshops, direct mailing, website surveys and individual meetings.

### **Workshops**

Three community workshops were held to gain an understanding of community concerns, get feedback on potential alignments, and to inform interested parties about the trail study. One of the workshops was held at Sonoma Valley Regional Park including a walking tour to look at field issues and to provide a glimpse of trail experience. Other workshops were held at Dunbar Elementary School and at the Sonoma Veterans Memorial Building.

At each workshop, participants had the opportunity to annotate maps of the study area and offer information and suggestions on study issues, including providing comments on trail alignment alternatives to consider, trail use, amenities and land use. Spanish language translation was provided. This information is contained in **Appendix A**.



At the community workshops, participants provided input, with almost 200 comments, and helped gain an understanding of relevant planning and regulatory interests.

The study team also participated in individual meetings and coordination with landowners and other community members throughout the study process.





### 3. COMMUNITY FRAMEWORK

#### 3.1 Demographics, Stakeholders, and Interest Groups

Demographic information and commute statistics for the study corridor and the greater Sonoma Valley were reviewed in order to understand population characteristics and the level of walking and bicycling in the study area. A variety of data was utilized including 2014 California Department of Finance Population Estimates, 2010 Decennial US Census Data, Journey-to-Work (JTW) Data from the American Community Survey (2007-2011), statistics from the Sonoma County Economic Development Board, information from the Sonoma County Department of Health Services (DOHS), and findings from recently completed transportation and community planning efforts in the Sonoma Valley and surrounding areas.

#### Census County Division

A Census County Division (CCD) is a subdivision of a county used by the United States Census Bureau for the purpose of presenting statistical data. A CCD is a relatively permanent statistical area delineated cooperatively by the Census Bureau and state and local government authorities.

#### Sonoma CCD – Sonoma Valley



Source: Sonoma County Economic Development Board, EHIGHWAYI Business Analyst

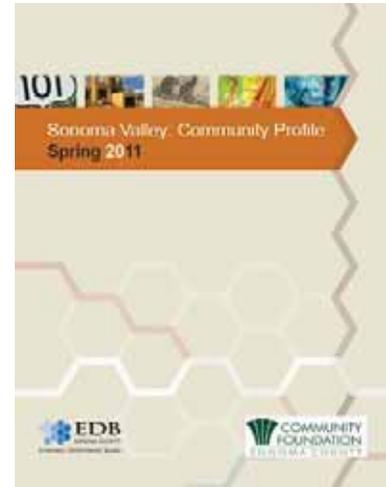
The geographic areas covered in the analysis include Sonoma County, Sonoma (CCD), Unincorporated Sonoma County, the cities of Santa Rosa and Sonoma, and Census Tracts 1516.01 and 1516.05 which are located along State Route 12 between the Sonoma CCD and the city of Santa Rosa. The Sonoma Valley is a defined Census County Division (Sonoma CCD) and includes the city of Sonoma and the unincorporated communities of Boyes Hot Springs, El Verano, Fetters Hot Springs-Agua Caliente, Kenwood, Glen Ellen, Temelec, and Eldridge. It is important to note that minor discrepancies occur when comparing Decennial Census and American Community Survey data due to survey samples, survey topics, and data collection periods. However, it is common to utilize and cross reference both data sets in order to cover a broad range of topics including general population characteristics, ages, race, economics, and commute statistics.



### Population by Area

The California Department of Finance (DOF) prepares annual population estimates for communities in California; they are generally considered to be the most current and accurate source available. Current population estimates from the California DOF, including change from 2013 to 2014, for Sonoma County, the cities of Santa Rosa and Sonoma, and the unincorporated lands of Sonoma County are provided in **Table 3-1**.

The 2011 *Sonoma Valley Community Profile* prepared by the Sonoma County Economic Development Board, provides an in depth demographic analysis of the Sonoma Valley. According to the 2010 Census, the total population of the Sonoma CCD is 40,608. Combined, the communities of Boyes Hot Springs, El Verano, and Fetters Hot Springs-Agua Caliente make up approximately 29% of Sonoma Valley's population. Kenwood, Glen Ellen, Temelec, Eldridge, the city of Sonoma and rural areas of the Sonoma Valley account for the remaining 71% of the Sonoma CCD's population (see **Inset 3-1** – Population of Sonoma Valley by Area).



### Population by Ethnicity

Sonoma Valley's population is made up of 69% white residents, 26% are Hispanic or Latino, 1.9% are multiracial, 2% are Asian, and 1% identified as other. Boyes Hot Springs, El Verano, and Fetters Hot Springs-Agua Caliente have significantly larger portions of the Hispanic/Latino population. These statistics and associated figures were derived from the 2005-09 American Community Survey and documented in the 2011 *Sonoma Valley Community Profile* (see **Inset 3-2** – Population of Sonoma Valley by Ethnicity).

**Table 3- 1: Sonoma County Population Estimates**

County/City	Total Population		Percent Change
	1/1/2013	1/1/2014	
<b>Sonoma County</b>	488,580	490,486	0.4
City of Santa Rosa	169,452	170,236	0.5
City of Sonoma	10,691	10,801	1.0
Balance of County	147,328	147,713	0.3

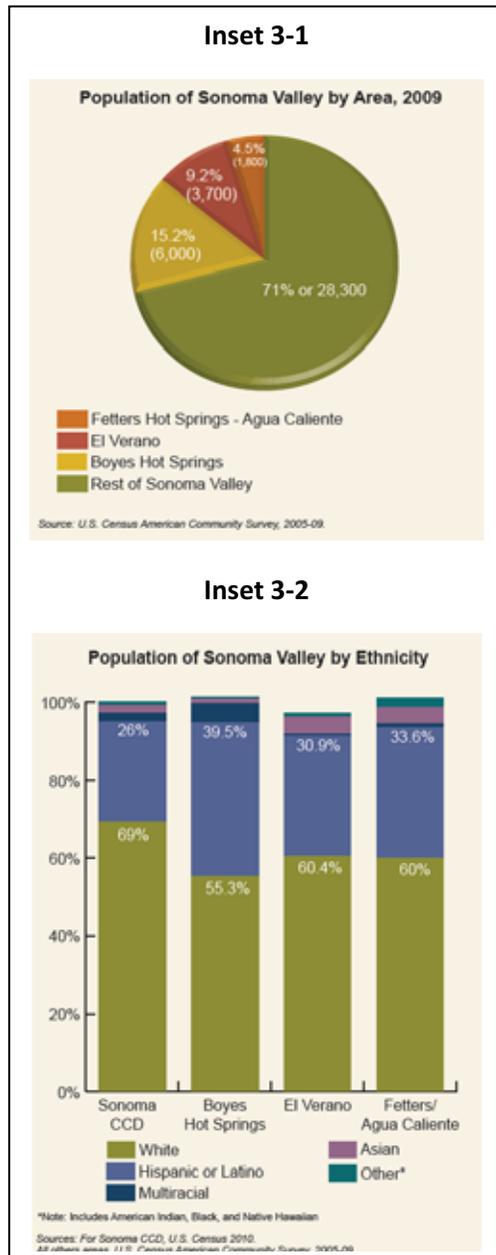
Source: California Department of Finance 2014 Population Estimates



### Underserved Populations

To better understand demographics, community needs, and on-going efforts in the study area, the Sonoma County Department of Health Services (DOHS), a “Stakeholder” in the development of this Plan

was consulted. The DOHS administers the U.S. Department of Agriculture’s (USDA) Supplemental Nutrition Assistance Program-Education (SNAP-Ed). The SNAP-Ed program is intended to provide nutrition education and obesity prevention to low-income households. SNAP-ED census tracts are identified by the USDA as those with the most at-risk populations. SNAP-ED classification criteria include: at least 50% of the total population is individuals living in households with income below 185 percent of the Federal Poverty Level (FPL) or, at least 50% of individuals of the Hispanic/Latino population are living in households with income below 185 percent of the FPL. Several qualifying SNAP Census Groups are located within or in close proximity to the study area (see **Inset 3-3**) including: Census Tract 06097150305 – Sonoma Valley/The Springs; Census Block Group 06097150202-4 - Sonoma Valley/ Verano Ave. & Highway 12; and Census Block Group 06097150500-1 - Sonoma Valley/ Glen Ellen.





### Inset 3-3: SNAP-Ed Census Tracts and Block Groups in the Study Area

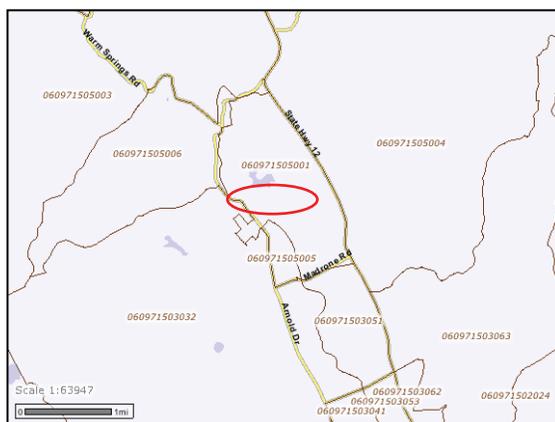
Census Tract 06097150305 (Sonoma Valley - The Springs)



Census Block Group 06097150202-4 (Sonoma Valley – Verano Ave & Highway 12)



Census Block Group 06097150500-1 - Sonoma Valley/ Glen Ellen





## Profile of General Population and Housing Characteristics, 2010 Census Summary Sonoma (CCD)

**Table 3-1** provides a general summary of population and housing characteristics in the Sonoma Valley (Sonoma CCD) from the 2010 US Census. **Table 3-2** provides selected economic and journey-to-work characteristics for the Sonoma Valley (Sonoma CCD) from the American Community Survey (2006-2010).

Total Population, Sonoma Valley	40,608
Median Age	46.0
Ages 5 to 14 years	4,616
Male	19,683
Female	20,925
Total Households	16,802
Households with individuals under 18 years	4,409
Households with individuals 65 years and over	5,742
Average household size	2.36
Average family size*	2.99
Total Housing Units	19,067
Source: 2010 US Census Summary File 1	
*“Family Households” consist of a householder and none or more other people related to the householder by birth, mirage, or adoption.	

Population 16 years and over	33,065
In labor force	20,693
Employed	19,173
Commuting to Work	
Workers 16 years and over	18,369
Drove alone – car, truck, or van	12,442
Carpooled – car, truck, or van	2,428
Public transportation (excluding taxicab)	387
Walked	883
Other means (includes bicycle)	484
Worked at home	1,745
Mean travel time to work (minutes)	25.5
Median household income (dollars)	60,292
Mean household income (dollars)	93,693
Source: 2006 – 2010 American Community Survey	



## ***Bicycle and Pedestrian Commute Statistics***

Commute data or “Journey to Work” Census statistics have been evaluated for jurisdictions in Sonoma County by the Sonoma County Transportation Authority (SCTA) as a part of the *2014 Countywide Bicycle and Pedestrian Master Plan*. The data was analyzed to identify ‘mode share’ and to evaluate travel time to work. The term mode share refers to the percentage of workers using a particular mode of transportation to get to work (i.e. walking, bicycling, taking a bus, driving, carpooling, etc.). The purpose of analyzing commute statistics is to establish base data on the existing number of bicycle and pedestrian commuters, and to gain insight into the potential number of bicycle and pedestrian commuters in a plan area. This information can then be used by staff and officials to develop improvement plans and set priorities, with the objective of increasing the percentage of people who choose to walk or bicycle rather than commute by car.

While ‘Journey-to-Work’ (JTW) data historically has been a component of the Decennial Census, it is now included in the American Community Survey (ACS). The JTW data set questions include “How did you usually get to work last week?” Respondents who use more than one method of transportation are instructed to mark the mode used for “most of the distance”. Additional questions include “How many people, including this person, usually rode to work in the car, truck or van last week?” and “How many minutes did it usually take this person to get from home to work last week?” While JTW data from the ACS is available at the county level each year, only the 5-year data set shows the data for all Sonoma County jurisdictions. Thus the JTW data analyzed for the *Sonoma County Bicycle and Pedestrian Master Plan* and presented below is from the most recent 5-year American Community Survey Data Set (2007-2011).



While JTW data is considered the most reliable source of transportation mode share information available, it only provides a glimpse of how residents travel to work, and merely a partial understanding of a community’s travel characteristics since it does not assess non-work trips such as those made to schools, for shopping, recreation, or myriad other utilitarian purposes. In fact, in Sonoma County work trips constitute only 15% of all trips. Further, many work trips involve more than one mode of travel, such as walking or bicycling to transit or a carpool, and the survey does not account for these activities. Nor does it count commuters who walk or bike to work occasionally, even though it is becoming more common for workers to commute by bike or foot once or twice per week or month as opposed to doing so on a daily basis. Despite these shortcomings and any changes to patterns



in this area since 2011, the JTW data set is currently the most comprehensive and accurate set of travel statistics available. An overview of countywide bicycle and pedestrian mode share data is presented in **Table 3-3**.

**Table 3 -3: Countywide Bicycle and Pedestrian Commute Mode Share Data**

Jurisdiction	Population (2010)	Employed Persons 16 years of age +	Drove Alone	Bike	Walk
Cloverdale	8,618	3,732	78%	0.0%	5.3%
Cotati	7,265	3,929	80%	2.5%	0.6%
Healdsburg	11,254	5,312	72%	2.4%	7.3%
Petaluma	57,941	28,539	72%	1.6%	2.9%
Rohnert Park	40,971	20,502	77%	2.0%	2.9%
Santa Rosa	167,815	75,477	76%	1.3%	2.9%
Sebastopol	7,379	3,920	76%	0.5%	7.4%
Sonoma	10,648	4,658	72%	2.3%	6.2%
Windsor	26,801	12,761	82%	0.1%	0.9%
County (unincorporated)	145,186	71,171	69%	1.0%	2.95%
Countywide	483,878	226,280	75%	1.2%	3.1%
California	37,253,956	16,251,032	73%	0.8%	2.8%
United States	308,745,538	139,488,206	76%	0.6%	2.8%

Source: American Community Survey, 2007-2011, 5-year Estimates

## 3.2 Related Plans and Policies

Implementing a Class 1 (off street) multi-use path through Sonoma Valley to connect Santa Rosa with Sonoma has been a goal and priority identified in many transportation and land use plans that govern land use in the Sonoma Valley. This section discusses several of these plans and policies contained in the documents that will guide trail implementation. This includes:

<i>Plan</i>	<i>Agency</i>
State Route 12 (West) Transportation Concept Report (2014)	Caltrans
Sonoma County Bicycle and Pedestrian Plan (2010)	Sonoma County
Sonoma County General Plan 2020	Sonoma County
Measure M, Traffic Relief Act for Sonoma County	Sonoma County
Central Sonoma Valley Bikeway Plan (2001)	Sonoma County Regional Parks
SCTA Countywide Bicycle and Pedestrian Master Plan (2014 )	Sonoma County Transportation Authority
Economic Impacts of Walking & Bicycling in Sonoma County (2013)	Sonoma County Transportation Authority
The Springs Community Based Transportation Plan (2010)	Sonoma County Transportation Authority
Highway 12 Design Guidelines (1994)	Sonoma County Community Development Commission
Santa Rosa General Plan 2035	City of Santa Rosa
Santa Rosa Bicycle and Pedestrian Master Plan (2010)	City of Santa Rosa
Southeast Greenway Specific Plan	City of Santa Rosa
City of Sonoma Bicycle and Pedestrian Master Plan, (2014 Draft Update)	City of Sonoma



## State Route 12 (West) Transportation Concept Report (2014)

Transportation Concept Reports (TCR) are prepared by the California Department of Transportation (Caltrans). The purpose of a TCR is to evaluate current and projected conditions along California’s State Highways to develop and communicate the vision for the route over a 20-25 year planning horizon. TCR’s are developed with the goals of “increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements and travel demand management components of the corridor”.



The *State Route 12 (West) Transportation Concept Report* is a cooperative planning effort that was developed in consultation with the Sonoma County Transportation Authority, the cities of Santa Rosa, Sebastopol, and Sonoma, Sonoma County, the Sonoma County Regional Parks Department, and the Sonoma County Bicycle Coalition. The State Route (HIGHWAY) 12 (West) corridor is defined as the portion of Highway 12 between the City of Sebastopol and Highway 121 just south of the City of Sonoma. The corridor is entirely within Sonoma County and is approximately 30 miles in length. According to the TCR, “while the whole route is defined as part of the California Interregional Road System, most traffic is local”. Between Santa Rosa and the City of Sonoma, Highway 12 is designated a State Scenic Highway, and is functionally classified as a minor arterial (FC4).

The Sonoma Valley Trail Corridor is located within the limits of Segment D in the TCR, which extends from Los Alamos Road in the City of Santa Rosa to the intersection of Highway 12/Highway 121 south of the city of Sonoma (PM 21.23 to 41.36). The following improvements are identified for the study area in the TCR:

- Further develop “Complete Streets<sup>1</sup>” measures in communities along the corridor;
- Consider transit frequency and service improvements working with transit agencies;
- Develop parallel bike facility.

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<sup>1</sup> Complete Streets refers to a transportation policy and design approach that requires *streets* to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.



Further, the TCR identifies the following findings for the segment. “Future development would increase traffic in this segment of the corridor, but the existing two-lane highway (together with Arnold Drive) is expected to provide sufficient capacity so as to retain its rural character. The proposal for a Class 1 bike path, approximately in the Highway 12 corridor, should be supported as an important asset for the community. However, it should be recognized that at over 20 miles between Sonoma and Santa Rosa regular commuting is not practical for most people, and that consideration should be given to planning for some future enhanced or potentially dedicated transit service (rail/bus). Within Sonoma, Boyes Hot Springs, and Agua Caliente, Highway 12 should be constructed to maximize Smart Mobility benefits over vehicle throughput, where appropriate.”

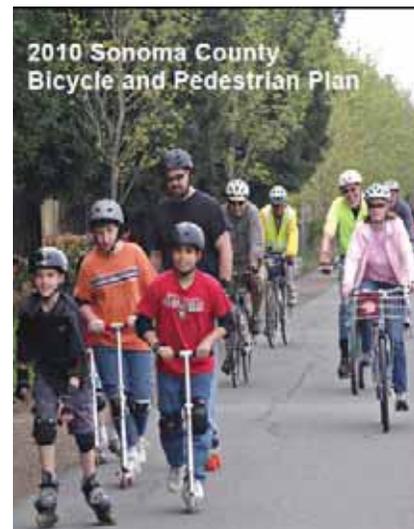
<http://www.dot.ca.gov/dist4/systemplanning/docs/tcr/Highway-12-tcr.pdf>

### ***Sonoma County Bicycle and Pedestrian Plan (2010)***

The *Sonoma County Bicycle and Pedestrian Plan* was updated by the County of Sonoma in 2010. The plan falls under the “umbrella” of the Sonoma County Transportation Authority’s *Countywide Bicycle and Pedestrian Master Plan*. It establishes goals, objectives, policies, design guidelines, and priorities for bicycle and pedestrian transportation networks and physical and programmatic improvement projects in the unincorporated areas of Sonoma County, outside of the cities of Cloverdale, Cotati, Healdsburg, Petaluma, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, and the Town of Windsor.

The Plan acknowledges that “a comprehensive, safe, and convenient bicycle and pedestrian transportation network is a critical component of an overall strategy to create a sustainable future for Sonoma County”, and its endeavor to create healthy well designed communities, to meet greenhouse gas emissions reduction standards, to promote tourism, and to create active recreational opportunities.

The Sonoma Valley Trail is identified as a “high priority” Class I trail project and a regional connection that would serve as an alternative to Highway 12. The proposed project (Project ID #183) would extend from Melita Road to Agua Caliente Road between the cities of Santa Rosa and Sonoma. The Plan also calls for the completion of the Central Sonoma Valley Bikeway (which joins the SVT study area to the south) as a high priority project (Project ID #90), and Class II bike lanes along Highway 12 as a high priority project, between Kunde Winery Road and the City of Sonoma (Project ID’s # 3B, 3C).

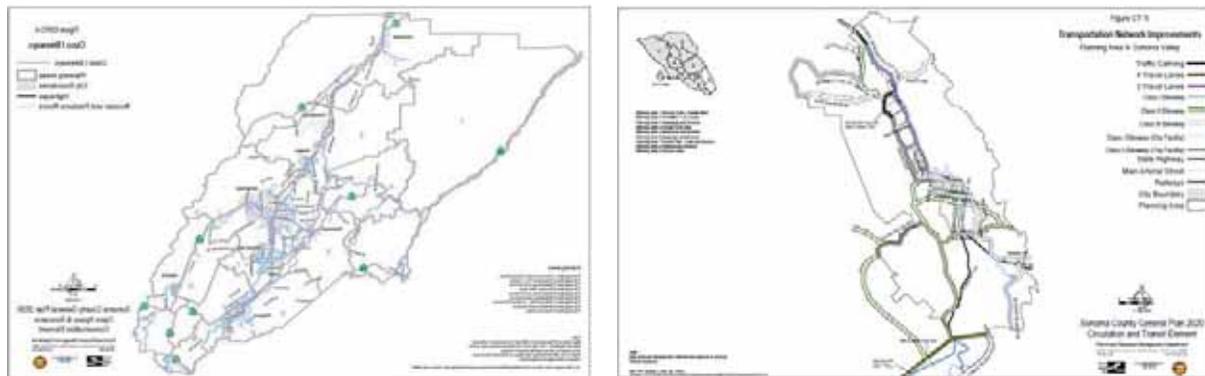


<http://www.sonoma-county.org/prmd/docs/misc/bikeplandraft.pdf>



## ***Sonoma County General Plan 2020***

The Sonoma County General Plan 2020 (GP 2020) is the County's comprehensive plan to guide its future physical development as required by State law. The Plan includes seven mandatory elements (Land Use, Circulation, Housing, Conservation, Open Space, Noise, and, Safety), along with four optional elements (Agricultural Resources, Air Transportation, Water Resources, and Public Facilities and Services). The 2010 GP 2020 updates the previous General Plan which was adopted in 1989. GP 2020 carries forward the major goals and policy framework of the 1989 Plan, and retains the overall format.



The primary purpose of the update was to conduct a policy review which focused upon specific issues that were of paramount importance to the community. GP 2020 also considers the policies and concerns of adjacent counties and regional agencies, including the Association of Bay Area Governments, the Metropolitan Transportation Commission, the San Francisco Bay Conservation and Development Commission, the Bay Area Air Quality Management District, the Northern Sonoma County Air Pollution Control District, the Bay Area Water Quality Control Board, the North Coast Regional Water Quality Control Board, the Sonoma County Water Agency, and others.

Relevant goals, objectives, policies, and discussion regarding bicycle and pedestrian facilities, multi-modal transportation, and transportation facility design are mostly contained in the Circulation and Transit Element. Similarly, the preservation of open space, protection of natural resources, and planning for outdoor recreation including parks, trails, and bikeways and related issues are largely contained in the Open Space and Resource Conservation Element. Highlights, findings, and related policy information from these elements are summarized below.

### ***GP 2020 Circulation and Transit Element***

The Circulation and Transit Element addresses planned transportation routes and facilities and includes goals, objectives, and policies affecting the mobility of future residents, businesses, and visitors. It is correlated with the Land Use Element to assure that the transportation system serves future travel demand and helps attain the desired land use plan, and helps achieve a sustainable circulation and



transit system. GP 2020 includes emphasis on the Highway 101 corridor along with an increased role for transit and non-motorized modes in serving commute trips and the importance of measures which will allocate existing highway capacity more efficiently during peak travel periods.

Strategies for long-range solutions for Transit and Circulation include:

- Programs that improve air quality and reduce greenhouse gas emissions by creating alternatives to automobile use and reducing future increases in Vehicle Miles Traveled (VMT).
- Programs that reduce future dependence upon auto travel.
- Ensuring that land development projects are required to provide adequate pedestrian and bicycle facilities that will eliminate gaps and unsafe conditions in the bicycle and pedestrian network and furnish safe links to the alternative mode networks from 'trip generators'.

Key Findings related to the Sonoma Valley Trail study are summarized below:

- GP 2020 classifies Highway 12 as a Rural Principal Arterial between the City of Santa Rosa and Agua Caliente Road.
- Traffic calming improvements are called for on Highway 12 through the unincorporated community of Kenwood.
- The Sonoma Valley Trail is identified along the Highway 12 corridor between the City of Santa Rosa and Agua Caliente Road.
- GP 2020 identifies a third lane along Highway 12 through the Sonoma Valley.
- Class II bike lanes are proposed along Highway 12 through the Sonoma Valley.

Relevant policies from the Circulation and Transit Element are listed below:

<i>Objective CT-1.4:</i>	<i>Reduce the need for future automobile use by a combination of improvements and land development policies that give equal favor to alternate modes as to automobile use.</i>
<i>Objective CT-1.5:</i>	<i>Reduce greenhouse gas emissions by minimizing future increase in VMT, with an emphasis on shifting short trips by automobile to walking and bicycling trips.</i>
<i>Policy CT-1g:</i>	<i>Provide east west connectivity within each community, including interchange improvements, transit/rail stops, and pedestrian, bicycle, and other alternative transportation mode improvements that will improve access to Highway 101 and the rail/transit system.</i>
<i>Policy CT-1m:</i>	<i>Require development projects contribute a fair share for development of alternative transportation mode facilities, including pedestrian and bicycle facilities along project frontages and links from these to nearby alternative mode facilities. Development near urban boundaries should provide safe access to the urban area.</i>
<i>Objective CT-3.7:</i>	<i>Provide a diverse range of recreational opportunities through a well designed network of bikeways, multi-use trails, sidewalks, and related support facilities.</i>
<i>Policy CT-3d:</i>	<i>The Regional Parks Department shall be responsible for establishing and maintaining Class I bikeways, and the Department of Transportation and Public Works (TPW) shall be</i>



*responsible for establishing and maintaining Class II and III bikeways and pedestrian facilities along public rights-of-way in unincorporated areas.*

- Policy CT-3q: Design, construct, and improve bikeways consistent with the “Bikeways Plan Project Priority List”. This list shall establish the priority, class, and location of Sonoma County bikeways projects.*
- Policy CT-3v: Where nexus exists, require private or public development to plan, design, and construct bicycle and pedestrian facilities to integrate with the existing and planned bicycle and pedestrian network.*
- Policy CT-3w: Where discretionary projects in Urban Service Areas and unincorporated communities are found to create additional demand for bicycle travel, require the project to directly provide or participate in the funding of bikeway improvements such as gap closures, shoulder widening, safety improvements and signage that will improve bicycle access to destinations located within 3 miles of the project site.*
- Policy CT-3cc: Review the status of abandoned railroad rights-of-way, natural waterways, flood control rights-of-way and public lands on an annual basis or as often as needed for opportunities to develop new Class I bikeways.*
- Policy CT-3mmm: Encourage multi-jurisdictional funding applications for design, construction and maintenance of bikeways and pedestrian facilities that provide regional connectivity.*
- Policy CT-7o: Coordinate with the City of Santa Rosa to improve and maintain Highway 12 as the east/west route connecting the City of Santa Rosa and Sonoma Valley.*
- Policy CT-7oo: Coordinate with the City of Sonoma to improve and maintain Highway 12 as the east/west route connecting the City of Santa Rosa and Sonoma Valley.*
- Policy CT-7pp: Consider traffic calming improvements in the unincorporated communities of Kenwood and Glen Ellen.*
- Policy CT-7rr: Work with Caltrans in considering signalization, turning lanes, passing lanes, and other traffic management improvements along Highway 12 to reduce congestion, provided that the improvements are consistent with the designated road classifications.*

## **GP 2020 Open Space and Resource Conservation Element**

The purpose of the Open Space and Resource Conservation Element is to preserve the natural and scenic resources which contribute to the general welfare and quality of life for the residents of the county and to the maintenance of its tourism industry. The Open Space and Resource Conservation Element notes that, “greater use of bicycling and walking for transportation and recreation has the potential to create a wide range of health benefits not only for bicyclist and pedestrians, but for all citizens of Sonoma County”, and that “creating walkable and bikeable areas in unincorporated communities further enhances Sonoma County's tourism industry”.

Key Findings related to the Sonoma Valley Trail are summarized below:



- Highway 12 is designated as a Scenic Corridor, and the surrounding hills and mountains that form the Sonoma Valley are designated as Scenic Landscape Units.
- A community separator is designated between Glen Ellen and the Springs Area.

Community Separators – According to the *Open Space and Conservation Element*, “community Separators are lands that function as rural open space to separate cities and other communities, to contain urban development, and to provide city and community identity by providing visual relief from continuous urbanization. Community Separators enhance the identities of individual cities and communities”. Approximately 1,400 acres between Glen Ellen and Agua Caliente/Boyes Hot Springs are designated to separate these urban areas.

Relevant policy from the Open Space and Conservation Element is listed below.

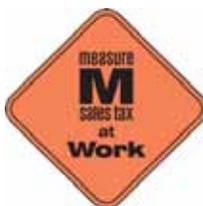
**GOAL OHIGHWAYC-18:** *Establish a Bikeways Network that provides safe and convenient recreational opportunities for all bicyclists and enhances Sonoma County's reputation as a world-class bicycling destination.*

**Objective OHIGHWAYC-18.1:** *Design, construct and maintain a comprehensive Bikeways Network that links the County's cities, unincorporated communities, and other major activity centers including schools, recreational areas and employment centers.*

**Policy OHIGHWAYC-18a:** *Use the adopted Sonoma County Bicycle and Pedestrian Plan as the detailed planning document for existing and proposed bikeways.*

**Policy OHIGHWAYC-18b:** *Develop a comprehensive system of bikeways through implementation of the Sonoma County Bicycle and Pedestrian Plan as described in the Circulation and Transit Element.*

**Policy OHIGHWAYC-18e:** *Consider connectivity to public and open space lands when identifying needs for new bicycle and pedestrian facilities.*



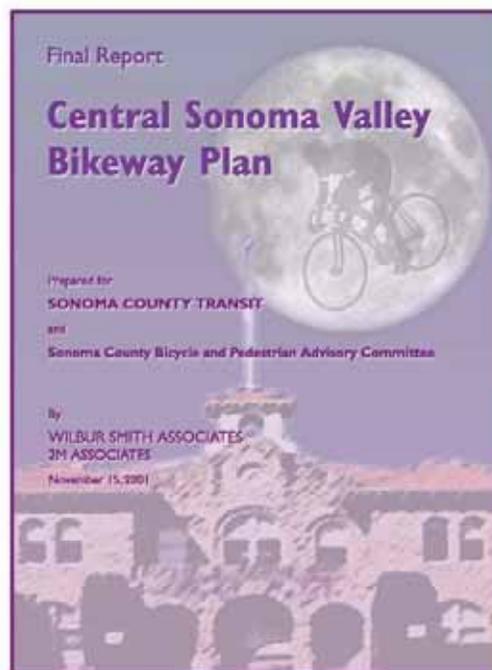
## Measure M

Measure M, the Traffic Relief Act for Sonoma County, was passed by voters in November 2004, and provides for a ¼ cent county sales tax that is used to maintain local streets, fix potholes, accelerate the widening of US 101, improve interchanges, restore and enhance transit, support development of passenger rail, and build safe bicycle and pedestrian routes. The funds are dedicated towards specific programs and projects specified in the Expenditure Plan. The Act has created opportunities for multi-modal transportation improvements throughout the county. Measure M contributes 4 percent of its revenue to the Bicycle and Pedestrian Projects Program.



## **Central Sonoma Valley Bikeway Plan (2001)**

The Central Sonoma Valley Bikeway Plan was developed to create a safe route for pedestrians and bicyclists through the densely populated neighborhoods of the central Sonoma Valley immediately north of the City of Sonoma, commonly known as “The Springs”. The project was initiated by a coalition of community groups, agencies, and elected officials including the Verano Springs Association, Sonoma Valley Trails Committee, Sonoma Valley Chamber of Commerce, and the Springs Task Force Coordinating Committee (aka Springs Community Alliance). The study corridor and limits extend north-south, roughly from Agua Caliente Road to Verano Avenue. The Plan developed a conceptual 2.76-mile bicycle and pedestrian route consisting of interconnected segments of multi-use pathways, Class II bike lanes, and Class III bike routes. The route is intended to provide pedestrians and bicyclists an alternative to walking and bicycling along Highway 12 through the Springs area with a combination of on-street and off-street improvements.



The first trail segment was completed in May 2011. It starts at DeChene Avenue and continues through Larson Park. Completion of the additional trail segments is anticipated in spring and summer of 2015. Sonoma County Regional Parks is responsible for developing the off-street pathways (Class I bike paths), while the County's Transportation and Public Works Department is responsible for developing on-street connections (Class II bike lanes and Class III bike routes.) The current project consists of constructing three paved multi-use trail segments which include:



Sonoma Charter School – Vailetti Property Trail Segment (0.31 miles): Starts at Vailetti Drive, continues south through the Sonoma Charter School and Vailetti properties and ends at Depot Road. The projected completion date for this trail segment is spring 2016.

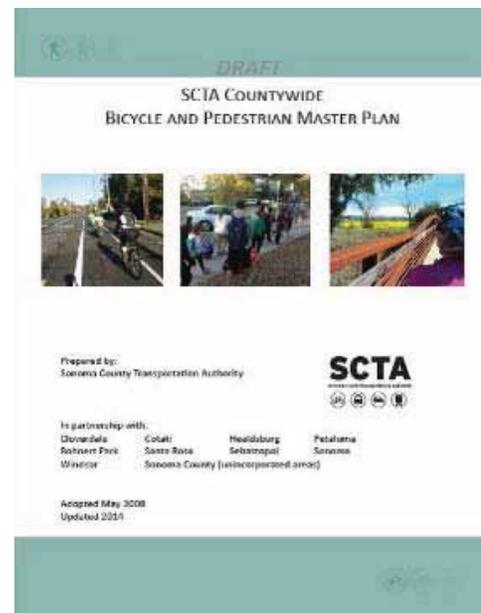
Flowery School Trail Segment (0.11 miles): Starts at Larson Park and extends north through Flowery Elementary School to Depot Road. Proposed improvements include a paved path and pedestrian/bicycle bridge crossing Pequeno Creek. The scheduled completion date is 2016.

Verano Avenue Trail Segment (0.31 miles): Starts at Main Street and continues west on the north side of Verano Avenue to Sonoma Creek. The proposed improvements include a paved path separated from traffic on Verano Avenue. All of the improvements will be constructed on county property. The scheduled completion date is 2016.

[http://parks.sonomacounty.ca.gov/About\\_Us/Project\\_Details/Central\\_Sonoma\\_Valley\\_Trail.aspx](http://parks.sonomacounty.ca.gov/About_Us/Project_Details/Central_Sonoma_Valley_Trail.aspx)

### ***SCTA Countywide Bicycle and Pedestrian Master Plan (2014 Update)***

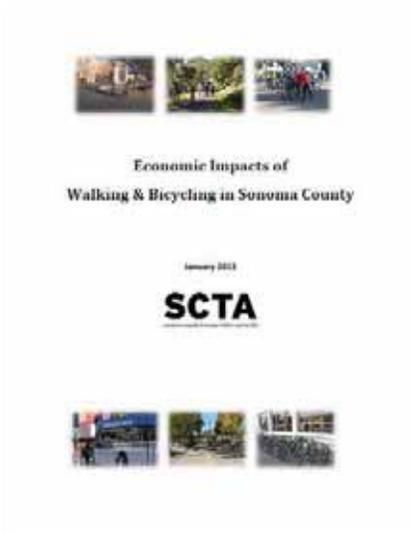
The *SCTA Countywide Bicycle & Pedestrian Master Plan* was developed under the guidance of the Sonoma County Transportation Authority (SCTA). The Plan takes a comprehensive and coordinated approach, with a Countywide Overview Section that maintains a common vision, goals, objectives and policies that emphasize cooperation and coordination amongst the local agencies to achieve a cohesive interconnected bicycle and pedestrian system throughout Sonoma County. Local agency plans are coordinated under the “umbrella” of the Countywide Overview. The Plan is designed to facilitate transportation improvements for bicyclists and pedestrians. It inventories existing facilities, identifies the benefits of walking and bicycling, defines pedestrian districts and zones, prioritizes bicycle and pedestrian improvements, recommends design standards, provides implementation strategies, and fosters countywide collaboration and coordination. The recommendations of the plan include both physical and programmatic improvements, including expanding existing facilities, connecting gaps in the network, addressing constraints, providing greater local and regional connectivity, promoting walking and bicycling for transportation and recreation, and educating bicyclists, pedestrians, and motorists alike. The Plan highlights major opportunities to provide new facilities including the utilization of utility corridors, Sonoma County Water Agency rights-of-way, existing highway rights-of-way, and historic railroad corridors among others.





The Sonoma Valley Trail (Project ID # 681), a Class I multi-use pathway extending between Santa Rosa and Sonoma, is designated as a high priority project in the 2014 Update. The Plan also identifies Class II bike lanes along Highway 12 between Santa Rosa and Sonoma as a high priority project (Project ID #'s 855,856,857).

[http://www.sctainfo.org/Bike\\_Main\\_files/index.htm](http://www.sctainfo.org/Bike_Main_files/index.htm)



### ***Economic Impacts of Walking & Bicycling in Sonoma County (2013)***

The 2013 Report on the *Economic Impacts of Walking & Bicycling in Sonoma County* was prepared to investigate the economic benefits of investing in non-motorized transportation infrastructure, bicycling and pedestrian events, and supporting amenities and activities in Sonoma County. The report, which was developed by the Sonoma County Transportation Authority, evaluates economic impacts on: Pedestrians and Bicyclists; Businesses; Government; and Residents or “Society at Large”. The report draws upon various local, regional, and national studies to determine impacts to health, transportation systems, property values, tourism, special event impacts, environmental benefits,

and government resources among other areas of interest. While the report findings are largely anecdotal vs. quantitative, persuasive arguments are made across all sectors regarding the individual and collective economic benefits of walking and bicycling in Sonoma County. Specifically in regards to tourism, the report finds that while visitors are drawn to Sonoma County for major events such as the Tour of California and the Wine Country Century, many more are casual independent tourists looking for attractive destinations with active recreational opportunities. Regardless of the attraction, tourist dollars are spent. The report estimates that visitors spend an average of two-hundred dollars a day on lodging, food and drink, and retail items. Further, the report estimates that annual revenue from sales, rentals, repairs, and services from small and medium sized bicycle and pedestrian related business in Sonoma County is between \$900,000 and \$1.5 million dollars annually.



### ***The Springs Community Based Transportation Plan (2010)***

*The Springs Community Based Transportation Plan* was funded by the Metropolitan Transportation Commission (MTC), and developed by the Sonoma County Transportation Authority (SCTA) to identify options for improving transportation for the area's low-income population. The need for the Plan was determined by the MTC as a part of the central Sonoma Valley was identified as a "Community of Concern", based on the percentage of low-income residents living in the area. The Plan focuses on transportation issues and potential solutions for improving transportation options in the densely populated Springs Area located between the Agua Caliente and the City of Sonoma at the southern end of the proposed Sonoma Valley Trail.



The plan emphasized community outreach to ensure a collaborative process and included substantial input from residents, employers, community-based and faith-based organizations, transportation and service providers, governmental agencies, and the business community. Significant issues identified by the Plan include: bicycle and pedestrian access, bicycle and pedestrian safety, and transit access and route frequency. Plan solutions and improvements include: adding and/or improving area sidewalks, adding bicycle pathways, increasing transit service frequency, and providing safety enhancements for bicycle and pedestrian facilities.

### ***Highway 12 Design Guidelines (1994)***

The 1994 *Highway 12 Design Guidelines* were prepared to provide a vision and a "design vocabulary" that would lead to the beautification of the Highway 12 corridor in the Springs Area through both public and private efforts. The document was prepared by the Sonoma County Community Development Agency, which is now known as the Community Development Commission. The guidelines were intended as a supplement to existing Sonoma County-wide ordinances, standards and guidelines. The document has three main components; Corridor Overview, Design Guidelines and Site Elements Appendix. It includes information on the design goals, an analysis of the existing setting, and an overall design concept for the enhancement of the Corridor. In recent years, the County of Sonoma and Caltrans have collaborated to implement many of the design elements, pedestrian circulation improvements, and safety measures identified in the Guidelines along Highway 12 through the Springs Area. Additional mobility improvements are slated for construction in the Springs area in late 2015.

### ***Santa Rosa General Plan 2035 (2009)***

*The Santa Rosa General Plan* sets forth the City's aspirations for growth and physical development in the next twenty years. Guiding Principle 14 of the Plan states: *14. Connectivity shall be provided between the*



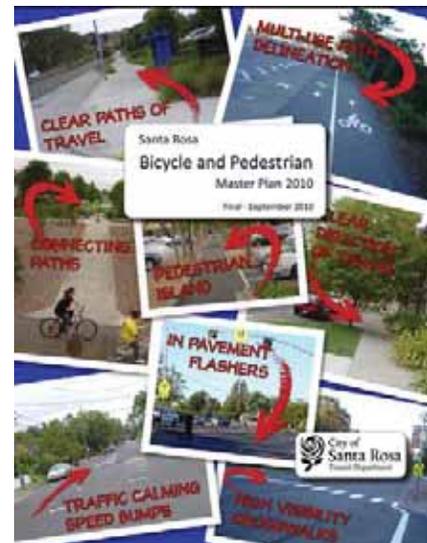
*east and west parts of town through linkages for pedestrians, bicycles, and automobiles that are free flowing and unobtrusive to the neighborhoods.*

The Plan calls for addition of bicycle and pedestrian amenities along Highway 12, Other policies that specifically relate to the study corridor include:

- *OSC-H-3 Preserve the Highway 12 scenic route in eastern Santa Rosa, including the corridor of oak trees. Encourage CalTrans to preserve the oaks on site where possible, and to replace destroyed trees.*
- *UD-C-4 Work with Caltrans to beautify Highway 101 and Highway 12. Encourage Caltrans to incorporate more landscaping, planting of trees, and soundwall mitigation into any improvements planned for these highways. Lessen the impact of new soundwalls through the use of vegetation.*
- *UD-E-2 Provide an open space network that is linked by pedestrian and bicycle paths, and that preserves and enhances Santa Rosa’s significant visual and natural resources.*
- *UD-E-3 Restore Santa Rosa Creek as a linear park throughout the city for pedestrians and cyclists.*
- *UD-E-4 Enhance pedestrian activity and safety by designing streets, buildings, pathways, and trails to provide a visual connection with public spaces such as parks and Santa Rosa Creek. Review and revise the Zoning Code and Subdivision Guidelines to support this policy.*

### **Santa Rosa Bicycle and Pedestrian Master Plan (2010)**

The Santa Rosa Bicycle and Pedestrian Master Plan (BPMP) is the City’s long-range planning document for bicycle and pedestrian transportation. The BPMP is the City’s tool for guiding staff, developers, and citizens in building a multi-modal transportation system that is pedestrian and bicycle “friendly” and encourages residents to use these modes of transportation. The end goal of the Plan is to create a ‘modal shift’ from driving single occupancy vehicles to more walking and bicycling “as a normal part of life” in the City of Santa Rosa. The BPMP was developed with ample opportunities for elected and appointed members of the City’s Boards, Commissions, and the public to participate in the planning process by evaluating, commenting and suggesting ideas for the BPMP, so it could serve as a guide for input on development of future projects.



The BPMP provides a description of proposed projects and priorities for implementation, past expenditures and future funding needs. The Plan includes goals and objectives, data collection recommendations, standards, design guidelines, collision analyses, safety and education programs, and it demonstrates coordination with other jurisdictions and consistency with the City’s General Plan and



other planning documents. The Plan helps to determine the future needs and programming of pedestrian and bicycle facilities throughout the City.

The Santa Rosa BPMP identifies bicycle routes that connect to adjacent communities. On the City's eastside connections are planned along Highway 12 including the Sonoma Valley Trail, which is shown along the south side of Highway 12 between Melita Road and Oakmont Drive and the north side of Highway 12 from Oakmont Drive extending past Pythian Road. An extension of the Santa Rosa Creek Path is also proposed.

[http://ci.santa-rosa.ca.us/departments/transit/bicycle\\_pedestrian/BPmasterplan/Pages/default.aspx](http://ci.santa-rosa.ca.us/departments/transit/bicycle_pedestrian/BPmasterplan/Pages/default.aspx)

### **Santa Rosa Southeast Greenway**



The City of Santa Rosa is in the initial stages of a General Plan Amendment and rezoning process to reclassify a ribbon of lands owned by Caltrans, and formerly designated for a highway connector. This site is in Santa Rosa between Farmers Lane and Spring Lake Park. Connections to the Sonoma Valley Trail would occur through Spring Lake Park, and could potentially include trail connections through surplus Caltrans parcels east of the park, or other development projects.



### ***City of Sonoma Bicycle and Pedestrian Master Plan, (May 2014 Update)***

The Sonoma Bicycle and Pedestrian Master Plan (2014) updates the City's 2010 Plan. Both the Plan and 2014 Update were developed under the guidance of the Sonoma County Transportation Authority.

The Plan falls under the “umbrella” of the SCTA’s Countywide Bicycle and Pedestrian Master Plan and is consistent with vision, goals, policies, and objectives of the countywide effort. The Plan addresses physical and programmatic needs within the City of Sonoma.



The City of Sonoma Plan conforms to the Sonoma County and Countywide Plans, which provide regional connections between jurisdictions, but the City’s Plan does not directly address the Sonoma Valley Trail since its southern terminus would be located a considerable distance from the City of Sonoma. The Plan does however show a connection to the Central Sonoma Valley Trail, which would extend from the Sonoma Valley Trail to the City of Sonoma where the segment along Verano Avenue adjacent to Maxwell Farms Regional Park would connect to Highway 12 and the City of Sonoma Bike Path.

[http://www.sonomacity.org/uploadimg/SonomaBikePedPlanUpdate2014\\_03242014\\_draft.pdf](http://www.sonomacity.org/uploadimg/SonomaBikePedPlanUpdate2014_03242014_draft.pdf)



## 4 ENVIRONMENTAL SETTING

This report and associated concept plan is a Feasibility and Planning Study to determine the issues associated with implementing the Sonoma Valley Trail. In the future, when the trail alignment is approved, and specific project elements are defined, the Sonoma Valley Trail will be identified as a “project”, and will be subject to environmental review under the provisions of the California Environmental Quality Act (CEQA), and possibly the National Environmental Policy Act (NEPA), if federal funding is obtained for project implementation. Feasibility Studies (this Study) are statutorily exempt from CEQA under Article 18 of the Resources code (below). As such, it is not yet a “project” that requires adoption, approval or commitment of funding.

### **15262. FEASIBILITY AND PLANNING STUDIES**

*A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or Negative Declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities.*

This section provides a description of key environmental issues, including constraints and challenges that were evaluated and used in preliminary trail alignment planning. Some of these issues will likely need to be evaluated in detail during project design (and additional detailed study may be needed), as well as other environmental issues that are not anticipated to significantly affect the existing environment.

### 4.1 Aesthetics

#### **Existing Conditions**

The scenic characteristics of Sonoma Valley are the picturesque views of the agricultural lands and surrounding wooded hills and grassland areas as one enters the Valley from the north or south. As one enters the Valley from the north, the area has a semi-rural character consisting mainly of rural homes on large lots, interspersed with open space areas, commercial areas and tree-lined roadways. The most northern part has a boulevard-like character with a landscaped center median, but this is quickly lost and Highway 12 becomes a rural tree-lined highway, interrupted by the small community of Kenwood.

Further south, the scenic and visual character of the Valley is primarily attributed to the vineyards along the highway, areas of rolling oak woodland and riparian corridors crossing the highway, and the backdrop provided by the forested Sonoma Mountains to the west and the Mayacamas Range to the east. Interspersed in the general corridor are the small rural communities of Agua Caliente, Eldridge, Glen Ellen, and Kenwood. At the south end is the Agua Caliente community, a part of the “Springs Area”



of the Valley. This area consists of a unique mixture of older and newer homes, restaurants and commercial businesses that contribute to the eclectic rural charm of the area.



The California State Scenic Highway System is a listing of highways that have been designated by Caltrans as “scenic highways”. This designation is pursuant to Section 263 of the California Streets and Highways Code. For a roadway to be declared scenic, the local government agency (in this case Sonoma County) must prepare and adopt a “Scenic Corridor Protection Program” that includes limiting development within the corridor, places controls on outdoor advertising, and a few other items. Further, Caltrans must review the application for designation and agree that it meets the scenic highway criteria.

Although all of State Route 12 is eligible for designation as a part of the State Scenic Highway System, it has only been classified as a scenic highway from its intersection with Danielli Avenue, on the east side of the City of Santa Rosa, to its intersection with London Way near Agua Caliente. Highway 12 in the

Sonoma Valley is called the Valley of the Moon Scenic Route. It was designated a Scenic Highway on December 17, 1974, and there are placards along the highway with this name designation.

In addition to the State Scenic Highway designation, the Open Space and Resource Conservation and Land Use Elements of the Sonoma County General Plan 2020 designate much of the northern half of the Valley as “Scenic Landscape Units,” with Highway 12 designated as a “Scenic Corridor.” The Open Space and Resource Conservation Element contains a number of policies meant to protect the visual resources of these areas. Although these are meant primarily for structures (buildings), most of the policies may also apply to trails, especially structural components such as retaining walls and foot bridges. Other policies cover billboards (signs) and tree removal (minimize/mitigate) associated with Public Works projects, which would include trail building. In addition to the Sonoma County General Plan, the City of Santa Rosa General Plan 2035 also provides policies associated with protection of scenic open space areas.

As noted earlier, the *Highway 12 Design Guidelines* were prepared by the County and are relevant to trail design in the Springs Area.



## ***Constraints and Challenges***

The majority of the trail alignments being considered are located along Highway 12 and construction of these segments could have temporary impacts on scenic views. On trail segments that are more visible from Highway 12, the addition of a paved trail surface, fencing, and retaining walls or barriers could alter the foreground of motorists' views of adjacent vineyards and pasture lands, and their views of the wooded slopes of the Sonoma Mountains and the Mayacamas Mountains.



Existing challenges to the visual character of the corridor include the proliferation of walls, gates, fencing and other infrastructure within or adjacent to the public right of way. These elements obstruct the visual character of the corridor, and may not be in keeping with regulatory planning and zoning requirements. Some of these elements may be obstacles to implementation of a safe and barrier free trail.

Trail segments visible from Highway 12 should be designed to minimize visual impacts and conform to

the City of Santa Rosa General Plan, Caltrans Scenic Highways Guidelines, Corridor Protection Plan and the Sonoma County General Plan. It should also be noted that the Sonoma Valley Trail presents an opportunity to facilitate public enjoyment of a scenic corridor for bicyclists, pedestrians and in places, equestrians.

## ***Design Considerations***

The following design guidelines, in addition to those contained in County Land Use and Open Space and Resource Conservation Element, and those of the City of Santa Rosa, should be considered when designing the trail along Highway 12:

- To avoid unnecessary impairment of scenic character, retaining walls, fences and barriers along the trail corridor should be limited to areas where they are required to resolve engineering constraints, provide resource or agricultural operations protection, and/or provide safety. Existing barriers that conflict with scenic guidelines should be modified or removed from the public right of way.
- Trail slope cuts larger than 4 ft. should be minimized and/or screened where possible.
- Natural topography, vegetation, and scenic features of the area should be retained to the maximum extent possible.
- Any needed traffic barriers should be consistent with the Scenic Corridor Protection Plan and the General Plan. Concrete barriers could utilize muted-color concrete and/or natural rock-like facade; minimize vertical elements (supports) or embellishment (finials, etc.); use simple metal



materials, and reduce the reflectivity of the vertical railing elements through treatment of the materials.

- Trail-related signage should be minimized and focused at existing developed areas or at staging areas. Consider implementing a trail signage program similar to the existing signage system in the Valley for wineries.
- Concrete retaining walls, where needed along trails, should be colored and/or textured to minimize their contrast with the surrounding landscape.
- New pedestrian bridge railing shall be the lowest allowed considering safety requirements.

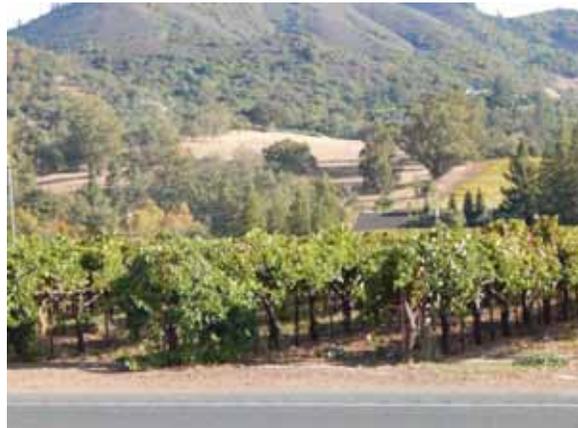
### **Additional Studies that May Be Needed**

A Caltrans Visual/Aesthetics Analysis for any structures that may affect visual resources within the Valley, for which funding and coordination with Caltrans is part of the project.

## 4.2 Agricultural Resources

### **Existing Conditions**

The majority of the greater Sonoma Valley area and surrounding foothill and mountain areas are designated in the Sonoma County General Plan 2020 as either land extensive agriculture (pasture and range, or natural vegetation) or land intensive agriculture (mostly vineyards). Generally, the lands immediately alongside Highway 12 in the northern part of the study area, within Santa Rosa and Kenwood, and in Agua Caliente are primarily designated in the General Plan as commercial or residential.



According to information contained in the 2011 Sonoma Ecology Center publication, *Sonoma Valley Groundwater Recharge Mapping Project*, just about half of the lands in the Valley area are covered by Natural Vegetation, (mostly on the mountain slopes) while a little less than 20 % are in intensive agriculture use (mostly on the valley bottom and lower mountain slopes). Most of the intensively used agricultural lands are in wine grapes. This data is from 2007, so the acreage of wine grape has likely increased since then. Urban developed uses also account for about 20% of the land in the Study Area.

The California Department of Conservation monitors agricultural use and farmland conversion in California. The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to



soil quality and irrigation status; the best quality land is called Prime Farmland. Important farmland within the Study area is shown in **Figure 4-1**.

Approximate agricultural land use acreages in the whole of the Sonoma Valley are shown in **Table 4-1**.

**Table 4-1**  
**Agricultural Land Use**

Land Use	Acreage
Intensive agriculture	18,264 acres
Vineyard (subset of intensive agriculture)	14,859
Working Landscapes, including extensive agriculture	11,434
Natural Vegetation (mainly oak woodland or mixed forest)	48, 872
Urban/Developed/Residential	15,389

**Williamson Act Lands.** Some properties adjacent to Highway 12 in the study area are under Williamson Act contracts. Under California’s Williamson Act program, established in 1965, private landowners may voluntarily enter into a long-term contract (minimum of 10 years) with cities and counties to form agricultural preserves and maintain their property in agricultural or open space uses in return for a reduced property tax assessment based on the agricultural value of the property. The term of a contract is generally ten years and the contract automatically renews itself each year for another ten year period, unless a Notice of Non-Renewal is filed or the contract is cancelled.

**Constraints and Challenges**

Operation of the Sonoma Valley Trail could result in land use conflicts between trail users and neighboring agricultural operations. Typical conflicts include potential exposure of trail users to pesticides sprayed nearby and trespassing on farmland. Pesticide exposure can be reduced by applying pesticides by hand during non-windy conditions. Pesticide use is regulated by County, State, and Federal requirements. The use of fencing, vegetative screens, and no trespass signs can discourage trespassing.



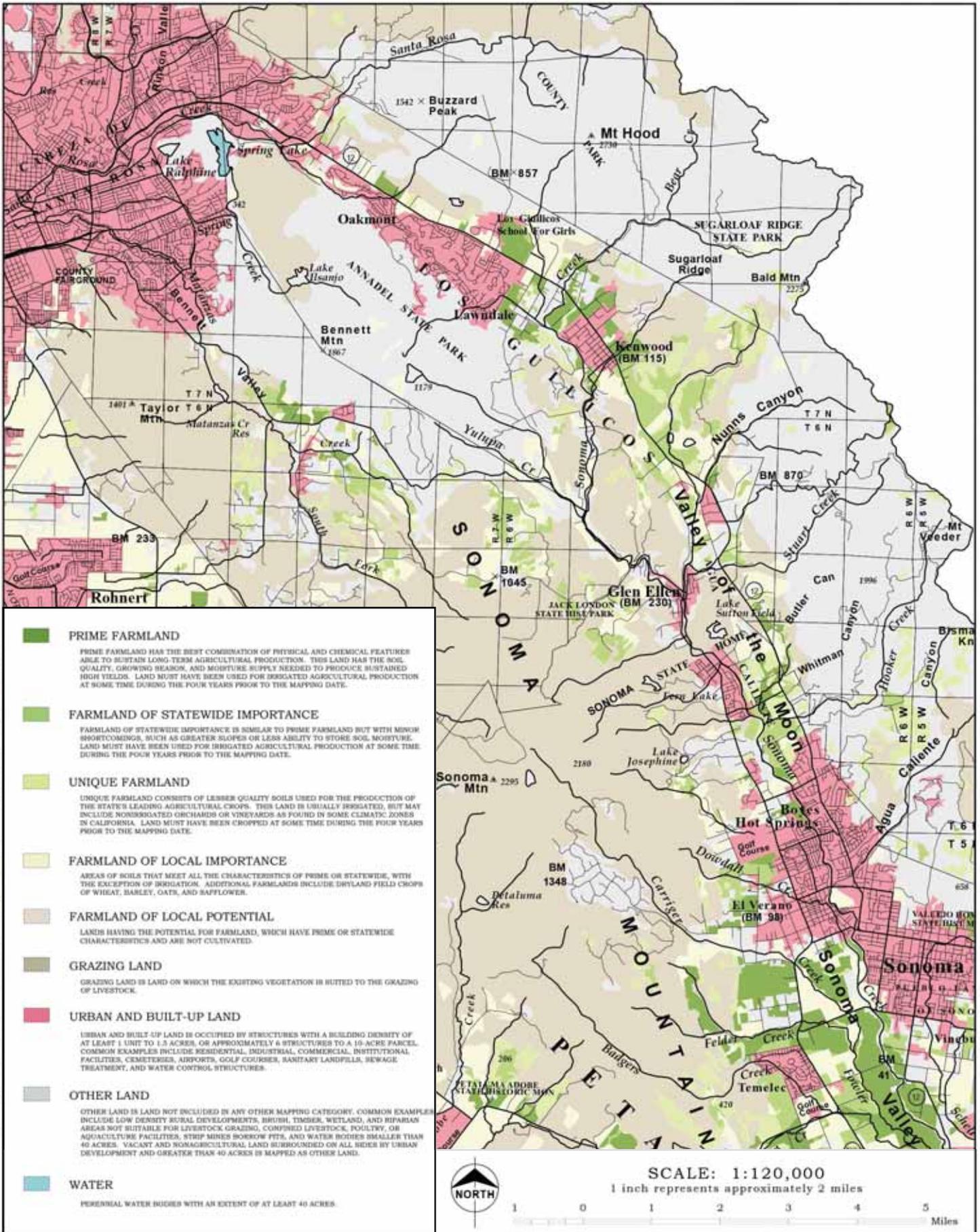


Figure 4-1

# Important Farmlands

SONOMA VALLEY TRAIL FEASIBILITY STUDY





Trail use in agricultural areas also could interfere with the movement of agricultural vehicles. For example, the trail could be routed on public road right of way where there are existing agricultural farm roads adjacent to vineyards and used to access the lands. Joint use of the path might not be a conflict except at times when this area of the vineyard is accessed.

### ***Design Considerations***

- Trail facilities, including staging areas, should be located to minimize conflicts with agricultural production, as well as provide opportunities for showcasing agricultural production, if desired.
- Fencing or vegetative screening should be located to facilitate accessibility for agricultural operations (e.g., allowing turning radius area for farm equipment) to the greatest extent feasible.
- Fencing or trail boundary signs can be incorporated into the design in agricultural areas when necessary to deter potential trespass from trail users.
- Provide signage at trailheads regarding agricultural activities.
- Signage would address the existence of neighboring agricultural operations, potential odors, and pesticide hazards that are inherent in such operations.
- During construction of the trail, excess dust emissions can be controlled by regular watering, paving, construction roads, or other preventive measures.

### ***Additional Studies that May Be Needed***

- Caltrans PEAR (Preliminary Environmental Analysis Report) Farmlands/Timberlands Technical Summary
- Williamson Act Notifications, if the trail is to be located within such lands.

## **4.3 Biological Resources**

### ***Existing Conditions***

For the purpose of this study, the study area for biological resources was defined with an approximately 250-foot buffer around the Highway 12 corridor. This section is based on biological data collected from numerous sources, including relevant literature, maps of natural resources, and data on special-status species and sensitive habitat information obtained from:

- Aerial photographs of the study area and immediate vicinity
- Vegetation communities mapped within the study area from the Bay Area Conservation Lands Network



- United States Fish and Wildlife (USFWS) Critical Habitat Portal, which shows maps of designated critical habitat areas for listed species
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database records of state and federally listed species that have been previously documented within a 3-mile radius of the study area
- USFWS National Wetlands Inventory maps of wetlands and ponds for the study area
- Biologists with Sonoma County Permit and Resource Management Department and Sonoma County Water Agency regarding California freshwater shrimp
- Center for Ecological Management and Restoration (CEMAR) survey of steelhead populations throughout San Francisco Bay watersheds, and their evaluation of priority streams for regional steelhead recovery
- CEMAR and Sonoma Ecology Center results of an instream humane trapping study in Sonoma Creek in 2013
- Sonoma County Water Agency surveys of aquatic life in Santa Rosa Creek
- Bay Area Open Space Council’s mapping of Critical Linkages: Bay Area & Beyond, showing important locations for wildlife to be able to travel for survival
- Sonoma County General Plan 2020, including discussion of the “Sonoma Valley Corridor” and Riparian Corridors, in its Open Space and Resource Conservation Element

**Figure 4-2** provides an overview of biological resources within or near the study area, including wetlands and streams, critical habitat, oaks and heritage trees, occurrences of special-status species or natural communities. These resources are discussed in greater detail below.

**Vegetation Communities.** Six vegetation communities, in addition to urbanized and rural residential land, were identified within the study area. The acreage of each community is shown in **Table 4-2**.

**Table 4-2: Vegetation Communities**

Vegetation Community	Acres	Percent of Study Area
Cultivated agriculture	314	38%
Urban	251	31%
Rural residential	125	15%
Grassland	97	12%
Mixed hardwood forest	21	3%
Oak woodland	7	1%
Riparian forest	2	0%
Ornamental shrubs	1	0%
<b>Total</b>	<b>818</b>	

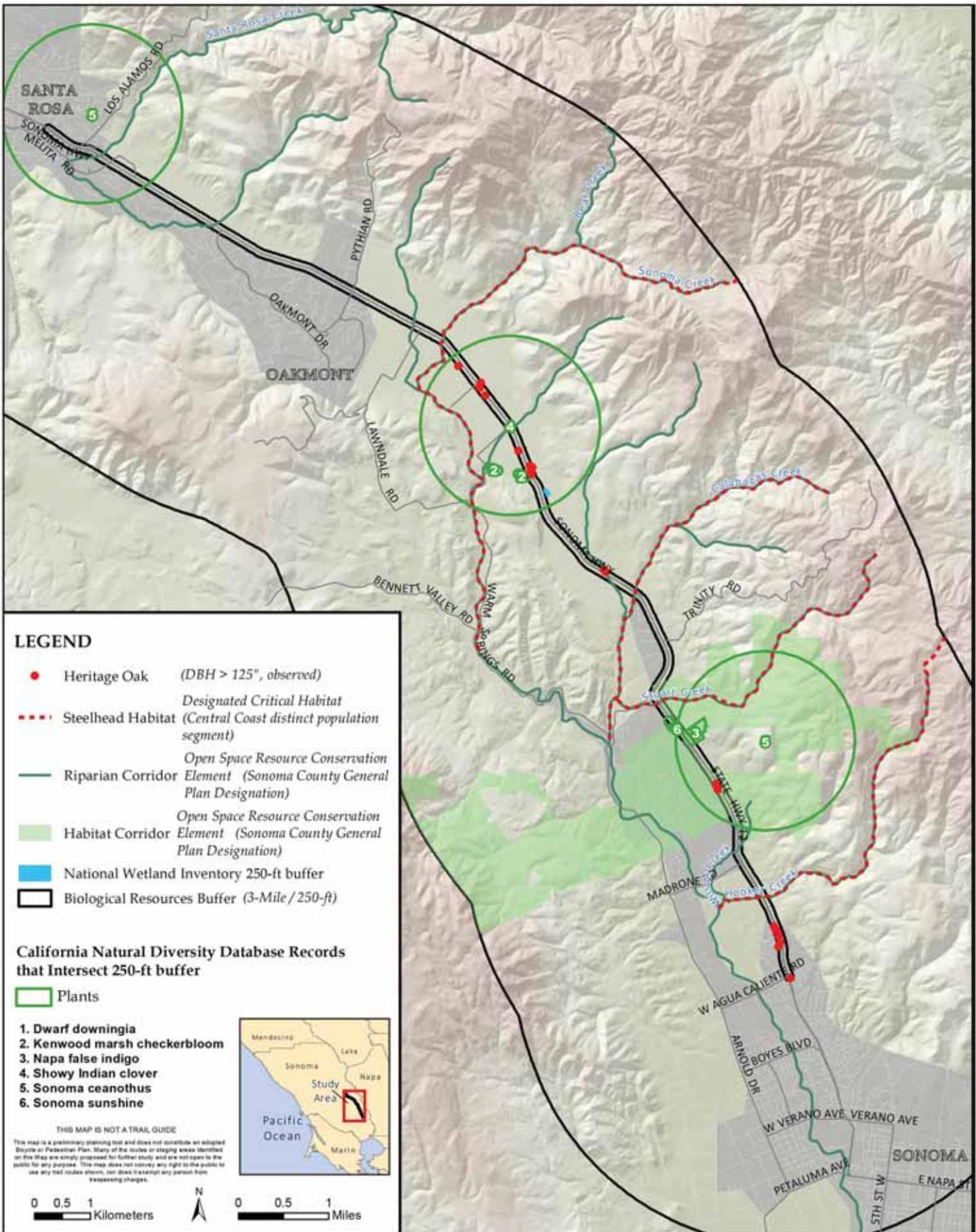


Figure 4-2

# Biological Resources

SONOMA VALLEY TRAIL FEASIBILITY STUDY





**Special -Status Plants.** This section discusses known occurrences of plant species of concern in the study area. The following six plant species have been documented to exist within the study area:

- Kenwood Marsh checkerbloom, a medium-height pink flower growing in the small remaining portion of Kenwood Marsh. Only two populations exist globally.
- Dwarf downingia, a short-stature flower associated with vernal pools, a much-reduced natural community in California.
- Sonoma ceanothus, a short evergreen shrub with pale lavender flowers, restricted to a small number of chaparral sites around Hood Mountain.
- Sonoma sunshine, a small yellow daisy found only in vernal pools in Sonoma Valley and the Laguna de Santa Rosa.
- Napa false indigo, a purple-flowering shrub found only in Marin, Sonoma, and Napa Counties.
- Showy Indian clover, a purple-flowering plant from wet grassy areas, with only one to three remaining populations globally. The Sonoma Valley population has since been extirpated.

The potential for plant species of concern to occur in the study area is discussed below. ‘Potential to occur’ is based on the presence or absence of suitable habitat for each species reported in the scientific database queries and background literature research that were conducted for the study. All occurrences of regional species and habitats of concern that have been reported by the resource agencies within a three-mile radius of the study area were considered. Based on the biological data queried and interviews conducted for this report, three special-status plant species have the potential to occur within the study area. The names, status, general ecological requirements, and type of habitat deemed suitable within the study for each special-status plant species with potential to occur on-site is summarized in **Appendix B**. Further studies will be required to determine if these species actually occur within the trail alignment corridor.

**Special-Status Natural Communities.** This section discusses known occurrences of sensitive natural communities, or vegetation types, in the study area. The natural community Northern Vernal Pool has been documented within the study area, on the Bouverie Preserve of Audubon Canyon Ranch, and at the Sonoma Valley Regional Park.

This section discusses potential occurrences of sensitive natural communities, or vegetation types, in the study area. Two sensitive natural communities, Valley Needlegrass Grassland, and have the potential to occur within the study area.

**Special-Status Animals & Critical Habitat.** This section discusses known occurrences of animal species of concern in the study area.

A reproducing population of steelhead trout occur in Sonoma Creek, including within the study area. The San Francisco Estuary Watersheds Evaluation: Identifying Promising Locations for Steelhead Restoration in Tributaries of the San Francisco Estuary (CEMAR, 2007) identified Sonoma Creek watershed as one of



the nine “anchor watersheds” in the San Francisco Bay Estuary necessary for regional steelhead recovery. The following streams that cross through the study area are designated critical habitat for the Central Coast distinct population segment of steelhead by the National Marine Fisheries Service and the US Fish and Wildlife Service: Sonoma, Calabazas, Stuart, and Hooker Creeks. In addition to these streams, based on a range of data sources, CEMAR maps Fisher and Kunde Creeks as having a “definite run or population.”

This section discusses the potential for regional special-status animal species to occur within the study area.

‘Potential to occur’ is based on the presence or absence of suitable habitat for each species reported in the scientific database queries and background literature research that were conducted for the study. All occurrences of regional species and habitats of concern that have been reported by the resource agencies within a three-mile radius of the study area were considered. Based on the biological data queried for this report, seven special-status animal species have the potential to occur within the study area. The names, status, general ecological requirements, and type of habitat deemed suitable within the study for each special-status animal species with potential to occur in the study area is summarized in **Appendix C**. Further studies are required to determine if these species actually occur within the study area.

In addition, designated critical habitat for California red-legged frog occurs within a 3-mile buffer surrounding the study area.

California freshwater shrimp have been documented in several locations within a 3-mile buffer surrounding the study area, including in Sonoma Creek (in the vicinity of the Madrone Road bridge and upstream of Glen Ellen) and Calabazas Creek (near Glen Ellen)<sup>2</sup>.

Pacific lamprey and foothill yellow-legged frog, in addition to steelhead and California freshwater shrimp, were documented in Sonoma Creek, within the 3-mile buffer surrounding the study area, during an instream humane trapping study in 2013.

**Habitat Connectivity.** The study area crosses through a Habitat Connectivity Corridor designated in Sonoma County General Plan 2020. This is one of two such designations in the County, designed to protect the valuable, largely undeveloped open space connecting Sonoma Mountain to the Mayacamas

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<sup>2</sup> Recent Shrimp survey results indicated presence at Madrone Bridge 2010 (Shawn Chase). From Rich Stabler: 1751 Adobe Canyon Road , none; not found upstream of ¾ mile above Mortons; found in vicinity of Mortons at Calabazas; non along Henno, but found in Glen Ellen. From David Cook, SCWA: none in Santa Rosa Creek since 1970’s.



Mountains. This connection serves wildlife as they travel to find food, water, and mates, and also serves plant species which may be shifting their ranges as the climate changes. The same corridor is identified in the Bay Area Open Space Council's regional connectivity analysis, *Critical Linkages: Bay Area and Beyond*, as important for allowing medium- and long-distance wildlife movement between Point Reyes and the Blue Ridge-Berryessa natural area. The most critically narrow stretch of this linkage is where the corridor crosses the Sonoma Valley floor between Arnold Drive to just north of Madrone Road, known as the Sonoma Valley Wildlife Corridor (Sonoma Land Trust (SLT), 12/29/15). Recent data collected by SLT indicate that bridge underpasses within the SVWC provide a safe means of passage crossing under Highway 12 that is used by most mobile wildlife (*Pathways for Wildlife 2015*), but their utility for wildlife is potentially affected by human use and feral cats. SLT is leading a strategy for land management within the wildlife corridor that includes fence removal or alteration, weed control, road culvert clearing and riparian plantings.

**Drainages.** The study area intersects numerous streams of the Sonoma Creek and Santa Rosa Creek watersheds. The drainages within these watersheds are of biological importance considering they are utilized by species such as steelhead, California freshwater shrimp, and California red-legged frogs. All "blue-line" streams, that is, streams that appear on US Geological Survey topographic maps, are designated and have protections under Sonoma County's General Plan 2020. The following is a summary of the major watersheds that occur within the study area.

Sonoma Creek is the primary stream of Sonoma Valley, running westward from Sugarloaf Ridge State Park (northeast of Kenwood), then southward to San Pablo Bay. Approximately half of the Sonoma Creek watershed is in a natural or semi-natural state. Primary land uses are wine grape agriculture and rural residential. It supports stable, though reduced, populations of steelhead, California freshwater shrimp, and (non-listed) Chinook salmon. Its entire length and many of its tributaries are designated critical habitat for central coast steelhead. Within the study area, Sonoma Creek's flows recede below the ground surface in most years, between mid-summer and the onset of rain. Chinook salmon have not been observed in the study area portion of Sonoma Creek. In addition to ocean-running (anadromous) steelhead, resident trout live in Sonoma Creek above natural barriers in Sugarloaf Ridge State Park.

Hooker Creek flows west from the Mayacamas Mountains through vineyard, natural, and rural residential land uses, and joins Sonoma Creek south of Madrone Road. The Creek has supported intermittent populations of steelhead over the decades. It is designated critical habitat for steelhead.

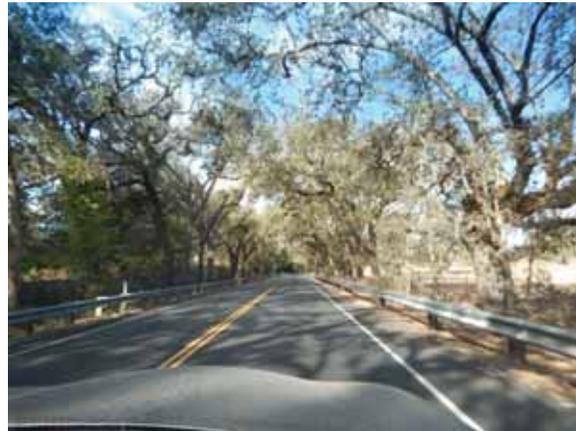
Stuart Creek has its headwaters in large protected open-space parcels in the western Mayacamas, travels over a waterfall, and joins Calabazas Creek just upstream of Glen Ellen. The Creek supports Pacific giant salamander, steelhead, and other important species. It is designated critical habitat for steelhead. In 2014 work was completed to remove and repair three man-made barriers to steelhead migration.



Calabazas Creek is one of the larger tributaries to Sonoma Creek. Land uses within and upstream of the study area are large-acreage viticulture, rural residential, and protected open space. Steelhead and California freshwater shrimp are found in the creek, which is designated critical habitat for steelhead.

Santa Rosa Creek and two un-named tributaries of Santa Rosa Creek. Santa Rosa Creek is a perennial stream. Most land uses in the Santa Rosa Creek, upstream of the study area are large-acreage rural residential and parkland. Santa Rosa Creek is a tributary to the Laguna de Santa Rosa, which is a tributary to the Russian River, which empties into the Pacific Ocean. Snorkel surveys by Sonoma County Water Agency over multiple years observed California roach, lamprey, sculpin, and a predominance of steelhead in and upstream of the study area.

**Nesting Birds.** The Migratory Bird treaty Act (MBTA) with Canada, Mexico, and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of any and all nests that are occupied by migratory birds during the nesting season. California Fish and Game Code Section (CFG) 3500 also prohibits the destruction of any nest, egg, or nestling. The mixed riparian, coyote brush scrub, coast live oak woodland habitat within the study area provide suitable habitat for nesting birds protected by the CFGC and MBTA.



#### **Wetlands, Riparian Areas, and Jurisdictional**

**Areas.** The NWI (National Wetlands Inventory) query found three small freshwater ponds within the study area totaling 3.5 acres. One is a vineyard pond near Kenwood in a Kunde vineyard. The two smaller features are in the BR Cohn vineyard, each including a large oak tree. These areas potentially fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and/or the California Coastal Commission (CCC). Riparian forest, identified by the Conservation Lands Network maps, potentially fall under the jurisdiction of the California Department of Fish and Wildlife. All streams appearing as blue lines on standard USGS topographic maps have associated Riparian Corridors designated for protection by Sonoma County.

**Invasive Weeds.** The most dominant vegetation community within the study area is non-native grassland. The roadside areas of Highway 12 are frequently disturbed providing an opportunity for invasive weeds--particularly yellow starthistle and purple starthistle--to establish.

**Oaks.** Heritage oaks are found along Highway 12, particularly in a corridor adjacent to the Oakmont subdivision. These trees are identified as a protected corridor in the Santa Rosa General Plan. Trail improvements will need to consider proximity to existing trees, opportunities for replacement planting, and design strategies to minimize disturbance to tree areas.



**Summary:** Numerous sensitive biological resources are present in the vicinity of the study area. Based on the biological data queried for this report, there is the potential for seven special-status plant species, seven special-status wildlife species, and two sensitive natural communities to be present within the study area. Depending on location, the trail may also impact nesting birds, wetlands, riparian corridors, jurisdictional areas, and critical habitat, and may result in the spread of invasive weeds. **Figure 4-2** shows the particular locations at which the Sonoma Valley Trail could affect habitat for steelhead and other species.

Potential constraints would be severe where alignments would require new drainage crossings, would affect the SVWC, and where they intersect with occurrences of special-status species such as vernal pool plants. Environmentally sensitive design (especially within the wildlife corridor) will be essential to minimize disturbance to sensitive wildlife. Mitigation measures such as those recommended above will likely be required; however, once the final trail alignment and design is determined, further studies may be needed to determine the extent of impacts and the kind and amount of mitigation required.

### ***Constraints and Challenges***

Construction of the trail has the potential to adversely affect special-status plant and wildlife species, critical habitat for steelhead, wetlands, nesting birds, protected riparian areas, and jurisdictional areas. However, the trail design and construction would include placement of the trail to avoid sensitive features, as well as incorporate Best Management Practices, habitat protection, and enhancement features to minimize potential impacts to biological resources. At creek crossings, clearspan bridges or boardwalks would be utilized to separate trail users from the riparian corridor. The proposed trail also has the potential to reduce harm to, or even benefit, biological resources through habitat enhancement along its route, particularly where it crosses perennial or seasonal streams and wetlands. Furthermore, the trail could provide interpretative signage to improve public awareness of biological resources. Finally, although the trail could serve as a vector for the spread of invasive species, landscaping with native species would minimize this risk.

### ***Design Considerations***

To minimize potential impacts to biological resources in the trail corridor, the following is a preliminary list of measures that may be incorporated into project implementation. Additional design features will be incorporated during project design, construction and management.

- Restore and enhance natural habitat at drainage crossings;
- Landscape with native species in the trail corridor, including replacement of native oak trees;
- Avoid removal (where possible) of heritage oak trees along the trail corridor, by re-routing the trail around heritage trees and selective use of boardwalks to avoid root compaction;
- Conduct seasonally appropriate surveys of special-status plants and animals along the trail corridor;
- Avoid, minimize, or mitigate for special-status plants;



- Construct the trail so that natural flows of water pass unimpeded across the trail corridor;
- Train construction employees in environmental awareness, including erosion prevention;
- Observe Best Management Practices (BMPs) during construction, including provisions of Sonoma County's FishNet4C program and protocols for preventing introduction of weed seeds;
- Provide signs indicating the presence and importance of the wildlife corridor and how users can help maintain its function for wildlife;
- Preclude or do not encourage nighttime use when negative human-wildlife interactions as well as disturbance to wildlife behavior would likely be greatest;
- Do not provide night lights within the SVWC as the lights themselves and the evening human presence would be detrimental to corridor function;
- Design the trail so that infrastructure and users remain out of stream underpasses and adjacent riparian zones within the wildlife corridor, especially Stuart Creek;
- Where necessary, build pathways above creek channels and associated riparian vegetation, ensuring sufficient upland above the scour zone of streams to accommodate passage during winter flows;
- Design path structures so that litter deposition and runoff into streams is precluded or minimized;
- Ensure that suitable cover and habitat are maintained or improved on both sides of any undercrossing that the trail bisects;
- Install wildlife drift fences along the trail on either side of underpasses to funnel animals into underpasses and prevent trail users from accessing the important riparian habitat and movement avenues;
- Include regular weed control along the trail in maintenance and management plans;
- Enforce pets on leash along the trail;
- Disallow all forms of pesticide use.

### ***Additional Studies that May Be Needed***

- Caltrans PEAR (Preliminary Environmental Analysis Report) Farmlands/Timberlands Technical Summary
- Caltrans Natural Environment Study (NES)



### 4.3 Cultural Resources

This information is excerpted from the Sonoma 2020 Draft EIR.

#### **Existing Conditions**

Cultural resources are the remains and sites associated with human activities and include prehistoric and ethnohistoric Native American archaeological sites, historic archaeological sites, historic buildings, and elements or areas of the natural landscape which have traditional cultural significance (<http://www.sonoma.edu/projects/asc/defaultpage/owners.html>, December 30, 2002). This includes archeology associated with Native American inhabitants of the land from roughly 8,000 years ago to the history in the early 1800's when the county was settled by European and Mexican colonists, and when most Native Americans were brought into the mission system.

**Native American Settlement.** Early Native American tribes that settled in village communities throughout Sonoma County include: Pomo / Kashaya, Wappo, Coast Miwok, and Patwin

(<http://www.sonomacountyhistory.org/>, December 2002). Of these, it is believe that the Sonoma Valley was primarily inhabited by the Coast Miwok and Wappo. The Coast Miwok, whose territory included all of present-day Marin County and extended north to that of the Southern Pomo. It included the Petaluma River basin and, during the post-mission period, the Cotati area and the Sonoma Valley. The Coast Miwok depended heavily on the gathering of shellfish, primarily mussels and clams. Living sites were generally along the shoreline or near bays and lagoons.



The Wappo held the area in Napa County north of the Coast Miwok. Their territory extended to Middletown in Lake County, east to the divide separating the Napa Valley from the Berryessa Valley, west to include portions of the Geyser's area, and south to the headwaters of Sonoma Creek and the Upper Napa River. It is estimated that the Wappo emerged between 2,000 and 1,000 B.C. The Coast Miwok may have appeared around 500 B.C.

**Historic Resources.** Historical resources include antiques, buildings, structures, and sites generally of the past two centuries. Landmarks within the vicinity of the study area in Sonoma Valley are listed below (**Table 4-3**). In addition to this inventory, within the study area, Caltrans has identified two (pre-1955) bridges: Highway 12 at Sonoma Creek (north of Kenwood), and Highway 12 at Stuart Creek (south of Arnold Drive).



**Table 4-3**  
**Sonoma Valley Historic Sites**

<i>Name / Description</i>	<i>Location</i>	<i>SCHL</i>	<i>CRHR</i>	<i>SPHI</i>	<i>NRHP</i>	<i>NHL</i>
General Joseph Hooker's Ranch	Agua Caliente	x				
Agua Caliente Springs Hotel	Boyes Hot Springs	x				
Sonoma Mission Inn & Water Tower	Boyes Hot Springs	x				
Kenny Residence	El Verano	x				
Nicholas Carriger Estate	El Verano	x				
Nicholas Carriger Grand View	El Verano	x				
Sonoma State Home-Main Building	Eldridge	x b				
Clementi's Inn	Fetter's Hot Springs	x				
Fetter's Hot Springs Depot	Fetter's Hot Springs	x				
Arnold Dr Bridge #20C-213	Glen Ellen	x b				
Beltane Ranch	Glen Ellen	x				
Calabazas Bridge	Glen Ellen	x				
Chavet Building	Glen Ellen	x				
Dunbar School	Glen Ellen	x				
Gaige House	Glen Ellen	x				
Glen Oaks	Glen Ellen	x	x b		x	
Hotel Chauvet	Glen Ellen	x	x b			
Jack London Ranch & State Historic Park	Glen Ellen	x b	x	x	x	
Joshua Chauvet House	Glen Ellen	x				
Mervyn Hotel Site	Glen Ellen	x				
Shone's Country Market	Glen Ellen	x				
Stone Winery Building	Glen Ellen	x				
Superintendent's House/Sonoma State	Glen Ellen	x				
Ten Oaks Ranch	Glen Ellen	x				
Thompson Ranch and Cemetery	Glen Ellen	x				
Trinity School	Glen Ellen	x				
Valley of the Moon Winery	Glen Ellen	x b				
Wake Robin Lodge	Glen Ellen	x				
Wegnerville Resort	Glen Ellen	x				
Chateau St. Jean	Kenwood	x				
Kenwood Community Church	Kenwood	x				
Kenwood Depot	Kenwood	x				
Kenwood Winery	Kenwood	x				
Monroe Ranch/Coops House	Kenwood	x b				
Partis Residence	Kenwood	x				
Wildwood Vineyards	Kenwood	x				
Bear Flag Monument	Sonoma	x				
Blue Wing Inn	Sonoma	x				
C.F. Leiding House	Sonoma	x				
Carriger, Nicholas, Estate	Sonoma	x b				
Cavedale Road Marker	Sonoma	x				
Circle Bar Ranch Barn	Sonoma	x				
Cooper House	Sonoma	x				
Cutter House	Sonoma	x				
Harazthy Ranch	Sonoma	x				



<i>Name / Description</i>	<i>Location</i>	<i>SCHL</i>	<i>CRHR</i>	<i>SPHI</i>	<i>NRHP</i>	<i>NHL</i>
Kiser Residence	Sonoma	x				
Laidlaw House	Sonoma	x				
Leveroni Ranch	Sonoma	x b				
Magnolia Farm	Sonoma	x				
Nash Adobe	Sonoma	x				
Rosser Ranch	Sonoma	x				
Salt Ranch & Residence	Sonoma	x				
Sobre Vista Farm Bath/Pool House	Sonoma	x				
Sobre Vista Farm Guest House	Sonoma	x				
Sobre Vista Farm Main House	Sonoma	x				
Sobre Vista Farm Tennis Court	Sonoma	x				
Sobre Vista Overview Farm	Sonoma	x				
Sonoma Grammar School	Sonoma	x				
Temelec Hall	Sonoma	x b	x			
Union Hotel and Union Hall	Sonoma	x				
Vella House	Sonoma	x				

SCHL – Sonoma County Historic Landmarks CRHR – California Register of Historical Resources SPHI – State Point of Historical Interest NRHP – National Register of Historic Places NHL – National Historic Landmark

<sup>a</sup> These sites are in Sonoma County, to the west of Calistoga.

<sup>b</sup> These sites were listed after 1986.

Sources: California State Historical Landmarks in Sonoma County, available on California Environmental Resources Evaluation System (CERES) website, [http://ceres.ca.gov/geo\\_area/counties/Sonoma/landmarks.html](http://ceres.ca.gov/geo_area/counties/Sonoma/landmarks.html), January 14, 2003; Historic Properties Directory for Sonoma County, available from the California Office of Historic Properties, January, 2003; Index by State and County, available on National Register Information System website database, <http://www.cr.nps.gov/nr/research/nris.htm>, January 14, 2003; Landmarks Sorted by Street Name then Number, Sonoma County Landmarks Commission Database, October 17, 2002.



### ***Constraints and Challenges***

A trail through the valley represents an opportunity to honor cultural resources through creative interpretive signage, monuments or pavement design elements that educates trail users about local history and archaeology. In general, a trail project also has the potential to adversely affect cultural resources. Grading, construction staging, and alignment of trail segments could disturb cultural resources. A survey of cultural resources and design to avoid such disturbance will be completed as part of each trail implementation project.

### ***Design Considerations***

The following measures could be implemented to help avoid and protect cultural resources in the trail corridor and educate trail users about their importance:

- Interpretive signage consistent with scenic highway guidelines to educate trail users of the cultural history of the Sonoma Valley.
- Phase I report should be prepared for each trail project.
- Where possible, known cultural resources should be avoided.
- If avoidance is not possible, extended Phase I testing is recommended for resources that are unknown to be within the trail corridor.
- Cultural resources known to be located within the trail alignment should undergo Phase II archaeological testing.
- Construction of the trail will be subject to established requirements and procedures for the protection of unanticipated cultural resources or human resources.

### ***Additional Studies that May Be Needed***

Cultural resources assessment for each trail segment to be implemented will be required as part of the future CEQA (and NEPA, if applicable) process.

## **4.4 Geology and Soils**

### ***Existing Conditions***

The primary source of information used in preparation and analysis of geology and soils, including regional geology, faults, landslides and liquefaction, was the Association of Bay Area Governments website on Hazards. Information contained in the Sonoma County General Plan for the Cities of Santa Rosa and Sonoma, including Seismic Safety Elements was also used.

**Regional Geology.** The Trail Feasibility Study area is located within the Coastal Range Geomorphic Province. This province lies between the Central Valley of California and the Pacific Ocean and extends



from northern Santa Barbara County to Oregon. The Coast Range province is structurally complex. It is comprised of sub-parallel northwest-southeast trending faults, folds, with small valleys often bounded by named mountain ranges (**Figure 4-3**). Sonoma Valley is one such valley, lying between the Sonoma Mountains to the west, and Mayacamas Mountains to the east. The northwest-southeast trending structures (valleys and mountains) can be attributed to the San Andreas Fault Transform Boundary, which is characterized by a right-lateral strike-slip fault zone. The movement of the Pacific and North American plates on either side of the San Andreas Fault is the source of many fault ruptures in western California.

There are no currently designated active faults (Alquist Priolo Act Faults) in Sonoma Valley. However, Sonoma Valley lies between the Healdsburg-Rodgers Creek Fault, which is located about 5 to 6 miles to the west, along the western side of the Sonoma Mountains and the West Napa Fault, located about 7 to 8 miles to the east, near the west side of the Napa Valley (further east). The Working Group on California Earthquake Probabilities estimated a minimum 27 percent chance of a magnitude 6.7 or greater earthquake along the Healdsburg-Rodgers Creek fault by 2037. In addition, there is active research by a number of agencies and educational institutions regarding potentially active faulting in the Sonoma Valley area.

Two earthquakes of magnitudes 5.6 and 5.7 shook Santa Rosa October 1, 1969, damaging about 100 structures. The 1969 quakes took place along the Healdsburg Fault. They were the strongest earthquakes to affect the City since 1906. The epicenters were about two miles north of Santa Rosa. The West Napa Fault is considered to be a part of a separate active fault system that traverses through the East Bay and North Bay, and includes the Concord-Green Valley, Mayacama, Hayward and Calaveras faults.

The U.S. Geological Survey (USGS) and the California Geological Survey (CGS) defines active faults as those that have had surface displacement within Holocene time (approximately the last 11,000 years). The existence of cliffs in alluvial terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts are all indicators of recent surface displacement. The San Andreas, Rodgers Creek, West Napa, Concord-Green Valley, Calaveras and Hayward Faults are the most likely active faults to seismically impact the trail corridor, although none of these faults are directly located within the study area. Primary earthquake hazards are due to surface fault rupture along the trace of the fault, and therefore unlikely. Secondary earthquake hazards are caused by earthquake induced ground shaking. Ground shaking extends to a wide area and is influenced by the distance of the site to the seismic source, local soil and bedrock subsurface conditions, and depth to groundwater. Earthquake-induced ground shaking is the greatest cause of widespread damage in an earthquake. Recent seismic hazard modeling efforts have attempted to evaluate earthquake potential for a given area by factoring various potential seismic sources. The anticipated peak ground acceleration for the site area could be up to 0.52g; this could adversely impact trail structures such as retaining walls and bridges.

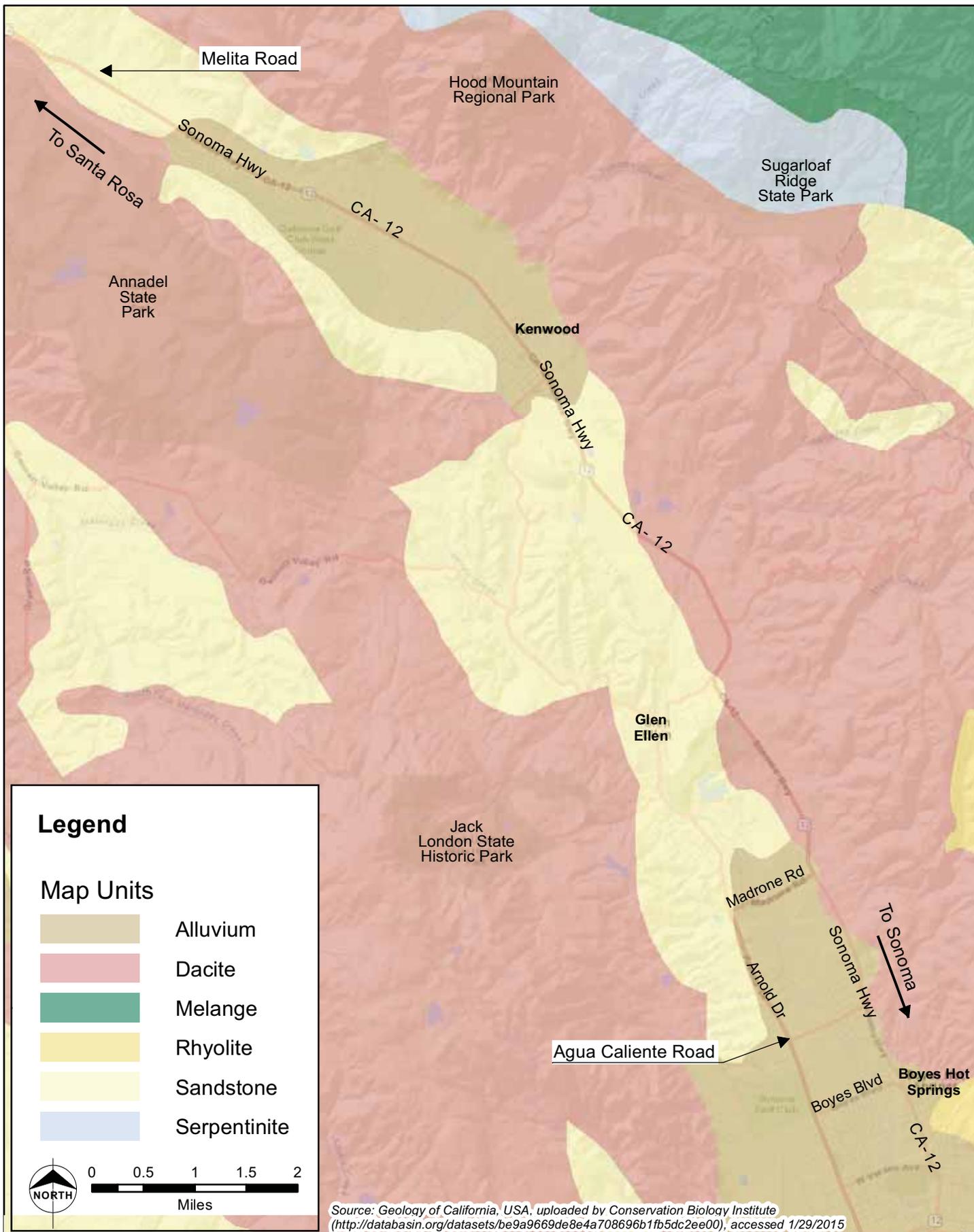


Figure 4-3

# Geology



**Geology.** The Trail Feasibility Study area geology is primarily comprised of low lying valley alluvium, consisting mainly of alluvial fan and stream deposits on the valley bottom and with generally fractured, highly weathered and weathered soft sedimentary rocks of the Tertiary Petaluma Formation and Glen Ellen formation or of the Sonoma Volcanic rocks underlying the hills at the valley margin, with some Quaternary age non-marine or alluvial terrace deposits. Hard, fractured rocks of the Franciscan complex occur in the northeast part of the Sonoma Valley and upper Santa Rosa Creek watersheds, in the Mayacamas Mountains, and generally outside the areas where the SVT is under study.

Tertiary age intrusive and extrusive volcanic deposits of the Sonoma Volcanics are also found in the watershed areas mainly in the hills above the proposed trail corridor, but the trail would cross through these volcanic rock areas on the slopes above Highway 12 near Sonoma Valley Regional Park and the Sonoma Developmental Center, and several other areas. Most of the Sonoma Volcanics are Pliocene in age and include andesitic breccias, rhyolitic tuffs and interbedded basalt flow rocks.

Volcanic rocks include both Late Miocene Tolay Volcanics and Late Miocene - Pliocene Sonoma Volcanics. These are interbedded with the late Miocene-Pliocene Petaluma Formation. The Petaluma Formation (which principally occurs on the west side of the Valley) includes areas of soft shale, siltstone, coarse sandstone and conglomerate.

**Soils.** The soils that occur in the Study Area include: 1) the Yolo-Cortina-Pleasanton Association, 2) the Huichica-Wright-Zamora Association, and 3) the Goulding-Toomes-Guenoc Association. The Yolo-Cortina-Pleasanton Association predominates in the northern part of the Valley, while the Huichica-Wright-Zamora Association is more widespread in the Agua Caliente area. The Goulding-Toomes-Guenoc Association soils are associated with the volcanic rock formation on the Valley margin foothills and mountains.

The Yolo and Cortina soils are well drained, highly productive, loamy agricultural soils that occur on gently sloping alluvial fans and nearly level floodplain deposits. Pleasanton soils occur on slightly higher fans and low terraces. These soils have clayey sub-soils and some areas have gravelly substrate. Although not as naturally fertile as Yolo soils, they are very productive vineyard and orchard soils.

The soils of the Huichica-Wright-Zamora Association are widespread in the central part of the Valley, where they occur on older alluvial fans and low terraces. Huichica soils in the unaltered or natural topography occur in areas with a hummocky to gently rolling micro-relief. They have dense clay subsoils and often have cemented hardpans within 40 inches of the surface. Wright and Zamora soils occur in more gently sloping areas and also have clayey subsoils, but lack hardpans. All of these soils are also used for orchards and vineyards, as well as for pasture.

Goulding-Toomes-Guenoc soils are shallow to moderately deep soils that develop on volcanic rock parent material, including areas of hard, fractured basalt as well as volcanic flow rocks that include cobbles and other material. These soils are predominant along the corridor or moderately to strongly sloping hillsides adjacent to and within Sonoma Valley Regional Park and the Sonoma Developmental



Center. Steeper portions of this soil association and public land areas are covered by oak woodland, but more gently sloping areas with deeper soils have been developed as vineyard lands.

### **Constraints and Challenges**

Potential geotechnical impacts or constraints primarily include slope instability, minor risk of landslides and potential soil erosion problems associated with trail construction and use, especially on steeper slopes (**Figure 4-4**). Trails that would be located on moderate to steep slopes, as well as near or crossing creeks or waterways have the highest potential impacts or constraints.

There are a number of Bay Area regionally significant and active faults (San Andreas, Hayward-Rogers Creek, and Concord-Green Valley) that could affect trails in the Sonoma Valley. The Hayward-Rogers Creek Fault system, which is located approximately 6 miles west of the study area, on the west side of the Sonoma Mountains, generated damaging earthquakes in 1868 and probably in 1898. The northern portion of this Fault, the Healdsburg portion of the Rodgers Creek fault system, was responsible for the M6.9 1969 Santa Rosa Earthquakes that damaged over 100 buildings in this city, and was also felt throughout the Sonoma valley. The Concord-Green Valley Fault system, which is located about 14 miles east of the feasibility area, produced a M5.5 earthquake in 1954.

Also close to the study area is the West Napa Fault trace, located about 5 miles east of the site, and which has the potential capacity to generate a 6.8 to 7.1 magnitude earthquake, and the less well known Carneros-Franklin Fault, also located several miles to the east. A magnitude 6.0 earthquake occurred on August 24, 2014 in the southern Napa Valley area. The epicenter of the earthquake was located between these two faults (USGS Earthquake Hazards Program Release; Aug. 24, 2014 Napa County 6.0 Earthquake, <http://comcat.cr.usgs.gov/earthquakes/eventpage/nc72282711#summary>). There was minor to intermediate damage to homes in the Sonoma Valley area, but otherwise the study area was not significantly affected.

The 1999 Working Group on California Earthquake Probabilities (WG99, 1999), which was updated in 2008 to address Bay Area earthquake probabilities, concluded that the Hayward-Rogers Creek Fault system has a 31 percent probability of generating a large earthquake (M6.7 to 7.4) by the year 2030, and the Concord-Green Valley Fault system has a 6.7 percent chance of generating a large earthquake ( $M \geq 6.7$ ) in the same time period.

The study area is located in the northern San Francisco Bay Area, a region of intense seismic activity. Strong ground shaking could also result from a rupture of any of the major Bay Area regional earthquake faults. Such strong ground shaking motion could damage elevated structures such as bridges and retaining walls that are part of the trail system.

There is a significant risk of another major earthquake on several regional and more local active faults during the next thirty years. The hazards related to ground shaking vary depending on the location of the proposed bicycle and pedestrian improvements and underlying soils and geologic conditions. In areas underlain by consolidated bedrock, seismic hazards include small rock falls and possibly landslides

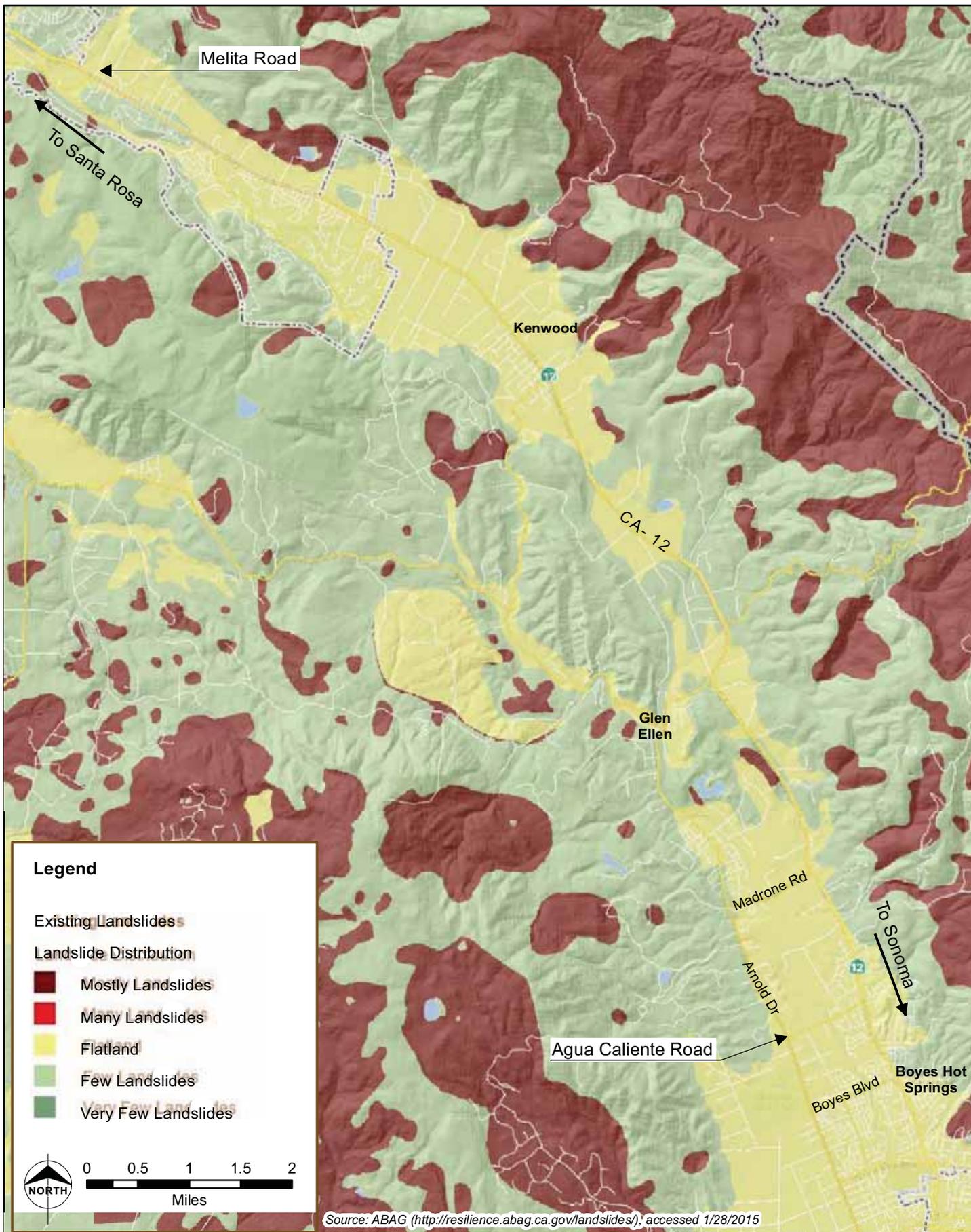


Figure 4-4  
**Landslides**





that could harm bicycle and pedestrian facility users and damage the improvements. In areas underlain by unconsolidated sediments, ground failure and differential settlement could result from a severe earthquake, damaging paved surfaces and elevated structures. Liquefaction potential is highest in areas underlain by poorly engineered Bay fills, Bay mud, and unconsolidated alluvium with shallow groundwater conditions.

The Study area is relatively flat to gently rolling, so the risk of landsliding, soil erosion and loss of topsoil is mostly low, with localized steeper slopes that will need to be traversed, such as through Sonoma Valley Regional Park. The Study area contains soils developed on younger and older alluvial fans and terraces and stream alluvial deposits, soft, weathered sedimentary rocks and volcanic rocks. Steeper slope areas underlain by soft, weathered sedimentary rocks and volcanic rocks represent potentially unstable geologic units. Areas underlain by unconsolidated alluvial deposits with shallow groundwater are susceptible to strong ground motion, lateral spreading along incised stream areas, subsidence and settlement under structural loading, and liquefaction.

### ***Design Considerations***

The study area is not within either an Alquist-Priolo Earthquake fault zone area, nor in an area included in the Seismic Hazards Zoning Act. A detailed Geotechnical Investigation would be completed associated with trail design, especially structures, and the final design and implementation would be consistent with the Geotechnical Investigation recommendations, California Building Code, Caltrans Highway Design Manual, City/County Grading Drainage and Building Codes and ordinances, and other applicable regulations. Trail design would also be consistent with the Sonoma County General Plan and the policies of the Cities of Santa Rosa and Sonoma related to geologic and seismic hazards.

- All construction, notably grading and foundation engineering will be performed in accordance with the recommendations of the Geotechnical Investigation. The design plans will identify specific mitigation measures to reduce the landslide risk and erosion potential of surface soils.

### ***Additional Studies that May Be Needed***

A design-level Geotechnical Investigation should be prepared for each trail segment that is implemented, under the direction of a California Registered Geotechnical Engineer, or Civil Engineer experienced in geotechnical and foundation engineering. The Geotechnical Investigation will establish the seismic and geotechnical design parameters, in accordance with requirements of the California Building Code and applicable Sonoma County Codes. The Geotechnical Investigation will be reviewed and approved by the by the County Engineer and by the Project Engineer as part of civil and structural design review of trail grading and drainage and any structures, such as retaining walls, grade separation structures, bridges and/or boardwalks.



## 4.5 Hazards and Hazardous Materials

### ***Existing Conditions***

Trail projects can generally result in exposure to hazardous materials in several ways. First, during site grading, construction workers can be exposed to any soil-based contaminants that are released. Any hazards discovered during site investigations at the design level or during construction would be remediated.

Second, during operation of a trail, the use of hazardous chemicals on adjacent properties can result in exposure to trail users. For example, pesticides applied on adjacent farmland may drift onto a trail corridor.

The following databases were searched for known sources of hazardous materials:

- **The State Water Resources Control Board (SWRCB) GeoTracker database.** This database indicates there are 13 permitted underground storage tanks within the valley, as well as one closed cleanup site at Madrone Road.
- **The Department of Toxic Substances Control (DTSC) EnviroStor database.** This database indicates two site investigations were completed at Los Guilicos facility, and one at Sonoma Charter School, with no action.
- **The Cortese List.** Cal-EPA's Cortese list notes the gas station within Kenwood, no current action.

**Agricultural Sites.** Pesticide use represents a potential health risk to trail users. The U.S. EPA defines pesticide spray drift as the physical movement of a pesticide through air at the time of application or soon thereafter, to any site other than that intended for application. Spray drift occurs when nozzles on ground spray equipment produce small droplets that stay suspended and are carried by air currents to off-target locations. The degree of health hazard from spray drift depends on factors such as the proximity of sensitive receptors to the area of pesticide application, the amount of spray drift, and the toxicity of the pesticide.

### ***Constraints and Challenges***

Based on the status of sites listed on the EnviroStor and GeoTracker databases and included on the Cortese list in the vicinity of the study area, it is unlikely that already known hazardous conditions would affect the Sonoma Valley Trail.

### ***Design Considerations***

Design of the project will follow regulatory requirements to utilize Best Management Practices to ensure that the project is designed and built to minimize exposure to hazardous conditions.



To avoid exposure to adjacent agricultural operations regarding pesticide use, informational signage may be utilized at trailheads or temporarily in cooperation with agricultural operators to inform about proposed operations that may affect use of the trail during spray operations.

### ***Additional Studies that May Be Needed***

A Phase I Environmental Site Assessment may be needed for some study segments.

## **4.6 Hydrology and Water Quality**

### ***Existing Conditions***

The primary sources of information used for watersheds, hydrology, and flooding, included information from Sonoma County Resource Conservation District, Sonoma Ecology Center, Wikipedia, and ABAG Hazards maps.

The majority of the trail feasibility study area is located in the Sonoma Creek watershed. The thirty three and one half (33.5) mile long Sonoma Creek drains a watershed area of approximately 170 square miles, including the Mayacamas Range to the east, the southern slopes of Annadel State Park and the Sonoma Mountains to the west. Its headwaters are in Sugarloaf Ridge State Park. It drains in a generally southerly direction where it flows into northern San Pablo Bay.

Communities in the watershed include the City of Sonoma and unincorporated valley areas of Kenwood, Eldridge, Glen Ellen, Agua Caliente, Boyes Hot Springs, El Verano, and Schellville.

Major tributaries to Sonoma Creek include Calabazas Creek, Stuart Creek, and Hooker Creek. These tributaries are mostly perennial in their lower and middle reaches but seasonal or intermittent in their upper reaches. Many, including Stuart Creek and Calabazas Creek support steelhead trout and upstream of Glen Ellen, Sonoma Creek provides both spawning and rearing habitat for steelhead salmon as well as habitat for Chinook salmon. California freshwater shrimp occurs in the Creek from the Kenwood area south to near Schellville, in non-tidally influenced areas. As discussed in Section 4.2, the riparian zones associated with these creeks serve a critical function as wildlife movement corridors, particularly within the SVWC and Stuart Creek.

The northern portion of the trail feasibility study area is drained by Santa Rosa Creek, which is in the Laguna de Santa Rosa watershed. A slight rise in the valley floor topography north of Kenwood marks the watershed boundary between the Laguna de Santa Rosa and Sonoma Creek. The Laguna drains a 254 square mile watershed via the Russian River to the Pacific Ocean near Jenner.



The headwaters of Santa Rosa Creek are on Hood Mountain, which lies on the westerly slopes of the Mayacamas Range. Santa Rosa Creek traverses the hillsides with often steep gradients and reaches the upper Sonoma Valley floor in the vicinity of Melita Road.

**Flooding.** During heavy rainfall induced runoff events, areas adjacent to creeks in the study area are subject to flooding from over bank topping. In the lowest portion of the watershed, south of the feasibility study area, storm flows and resulting flood conditions can be exacerbated when seasonal high tides coincide with major rainfall events.

The Federal Emergency Management Agency (FEMA) has prepared a series of maps that show flood hazards along Sonoma Creek and many of the small tributary creeks in the Study area (**Figure 4-5**). These were assembled by the Association of Bay Area Governments (ABAG) to produce regional maps showing flood hazards. Flooding is possible, generally in relatively narrow 100-year flood zones along the creeks.

### ***Constraints and Challenges***

As noted earlier, a number of creek or drainage crossings will be required to implement a continuous Sonoma Valley Trail between Agua Caliente and Melita Road in the Santa Rosa area. Most of these will be bicycle or pedestrian bridges crossing relatively narrow regulatory floodplain areas, with bridges less than 50-100 feet in length most common. The Sonoma Creek area has a wider 100-year floodplain, and any new bridge crossing of this creek would be difficult to engineer, obtain environmental clearance and permits for, and would be relatively expensive. A crossing of Calabazas Creek would also require a clear span in excess of 100 feet. Modifications to the existing bridges at Sonoma Creek and Stuart Creek would also need to comply with requirements for historic structures.

Drainage crossings can introduce a concentrated sediment load to the waterway which can cause a decrease in water quality. Increase in sediment loads to Sonoma Creek, Santa Rosa Creek and their tributaries is a potentially significant concern and therefore a significant constraint in the watershed, unless carefully designed and constructed, construction of the Sonoma Valley Trail could result in the disturbance of existing waterway and riparian conditions by increasing sediment loads to all of the creeks and altering current hydrologic conditions.

Trails can be located within floodplain areas with much greater flooding frequency than the 100-year regulatory flood (i.e., 10-year floodplain), provided that appropriate considerations are included in the trail and structure designs to prevent frequent and costly trail damage and washouts, clogged drainage structures, and exacerbated local flooding, or prolonged trail closure. In general, the trail design surface elevation should be a minimum of 1 foot above the 10-yr flood elevation. This will typically require consultation with the local flood control agency (Sonoma County Water Agency).

Particular attention should be paid towards the hydraulic design of bridges and any needed boardwalk structures. The bottom cord or structural support member of all bridges and boardwalks within any regulatory floodplain should ideally be at a minimum elevation of the 100-year or Base Flood Elevation plus 2 feet of freeboard to be fully compliant with Sonoma County Water Agency Flood Plain

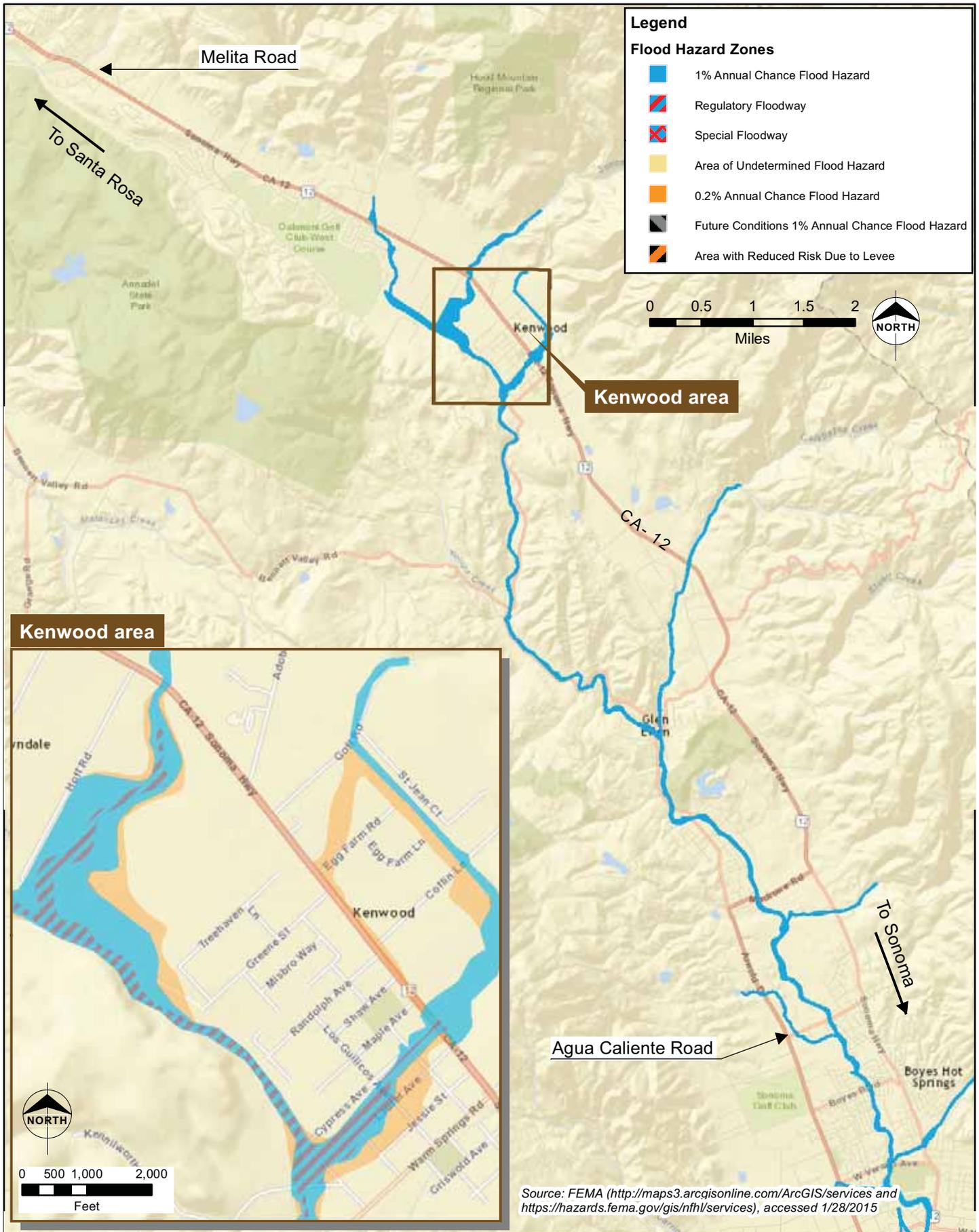


Figure 4-5

# FEMA Floodplain

## SONOMA VALLEY TRAIL FEASIBILITY STUDY





Management regulations and FEMA regulations. Each bridge or boardwalk crossing should be designed to have minimal impact on flood water surface elevations, or block or redirect flood flows to adjacent lands, and clear span the creeks.

### ***Design Considerations***

Structures that cross regulatory floodplains must be designed appropriately, as noted above. In general, the following measures can be implemented to minimize hydrological impacts:

- To prevent sediments from entering, BMPs will include at a minimum the following measures:
  - Use temporary measures, such as flow diversion, temporary ditches, and silt fencing or straw wattles.
  - Surface disturbance of soil and vegetation must be minimized; existing access and maintenance roads should be used wherever feasible.
  - Any stockpiled soil should be placed, sloped, and covered so that it would not be subject to accelerated erosion.
  - Accidental discharge of all project-related materials and fluids into local waterways should be avoided by using straw rolls or silt fences, constructing berms or barriers around construction materials, or installing geofabric in disturbed areas with long, steep slopes.
  - After ground-disturbing activities are complete for each area, all graded or disturbed areas should be covered with protective material such as mulch, and/or erosion control blankets and re-seeded with native plant species.
- Consider the need to establish a flood warning and trail closures to protect trail users, if severe weather or flooding events are forecast where the trail is located near streams with frequent and dangerous flooding.
- Bridge construction should address potential hydraulic impacts on channel flow with respect to steelhead salmon and freshwater shrimp.
- Consider enhancement of roadside drainage areas to treat and filter water before it enters the creek. Incorporate bicycle and pedestrian facilities into bridge repair and rehabilitation projects to minimize creek disturbance, or plan separate parallel structures to avoid creek disturbance.
- Trails can be located within floodplain areas with much greater flooding frequency (i.e., 10-year floodplain), provided that appropriate considerations are included in the trail and





structure designs to prevent frequent and costly trail and bridge damage and washouts, clogged drainage structures, or prolonged trail closure. In general, the trail design surface elevation should be a minimum of 1 foot above the 10-yr flood elevation. Particular attention should be paid towards the design of bridge and boardwalk structures. The bottom chord or structural support member of all bridges and boardwalks within any regulatory floodplain should ideally be at a minimum elevation of Base Flood Elevation plus 2-3 feet of freeboard to be fully compliant with FEMA regulations. Each bridge or boardwalk crossing should be designed to have no impact on flood water surface elevations, or block or redirect flood flows to adjacent lands, and clear span the creeks.

- With incorporation of BMPs during land-disturbing activities, the Sonoma Valley Trail would be consistent with Resource Conservation District Watershed Enhancement Plans and County General Plan goals to address erosion problems throughout the upper Santa Rosa Creek and Sonoma Creek watersheds. Any trail segments would need to be consistent with the Sonoma County Water Agency Channel Management Guidelines, according to which flood-prone natural drainage courses should be maintained in their natural states to protect native vegetation and wildlife habitats. Permitting for any drainage alterations to Santa Rosa and Sonoma Creeks and tributaries would address this requirement.

### ***Additional Studies that May Be Needed***

- A detailed hydraulic analysis should be prepared of all impacted creeks and waterways, with recommendations regarding the design elevations of all pedestrian bridges in compliance with Sonoma County Water Agency floodplain management regulations. This includes 100-year flood elevation freeboard requirements, the locations of the bridge abutment structures with respect to flood flows, bridge abutment, scour, and channel bank protection requirements.
- A Stormwater Pollution Prevention Plan (SWPPP) and a Spill Control and Countermeasures Plan (SCCP) should be prepared for each individual trail segment. Specific measures, as cited below, should be adapted from the most current edition of the Stormwater Best Management Practice Handbook for Construction, published by the California Stormwater Quality Association (CASQA). The SWPPP should include Best Management Practices (BMPs) to prevent or minimize stormwater pollution during construction activities, and post construction. An Erosion Control and Revegetation Plan, and a Spill Control and Countermeasures Plan, should be included in the SWPPP, and in the Construction Documents. BMPs should be prepared and implemented to control short-term construction-related water quality impacts.



## 4.7 Land Use, Right of Way and Property Ownership

### **Existing Conditions**

The Sonoma Valley is a predominantly rural, agricultural area with residential development scattered in three areas along the corridor: the Oakmont planned community; Kenwood, and Agua Caliente. A discussion of the planning context of this area and demographics of the community is contained in **Section 3**. This section focuses on the land use and right of way issues associated with implementation of a separated trail along the Highway 12 corridor (**Figures 4-6 through 4-8**).



The Sonoma Valley is a defined Planning Area in the Sonoma County General Plan. It extends from Bennett Valley and Kenwood south to San Pablo Bay, and from the crest of the Sonoma Mountains east to the Sonoma-Napa County line. The valley and its' foothills are widely renown as one of the finest vineyard regions in the world. In the southern area, the mountains and foothills give way to an alluvial plain, estuaries, and the tidal marshlands of San Pablo Bay<sup>3</sup>. The Valley contains a mix of land uses and a variety of zoning designations, but is predominantly

zoned for Agriculture and Resources and Rural Development. Population is concentrated in the City of Sonoma and the adjacent unincorporated communities of Agua Caliente, Fetters Hot Springs, El Verano and Boyes Hot Springs, as well as the unincorporated communities of Kenwood and Glen Ellen.

Oakmont, in Santa Rosa is located just north of the Sonoma Valley Planning Area, but within the Sonoma Valley Trail Study Area. The remaining balance of the area's population is scattered among the Valley's rural agricultural and hillside areas at very low densities.

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<sup>3</sup> Sonoma County General Plan 2020, Sonoma County Permit and Resource Management Department, 2010

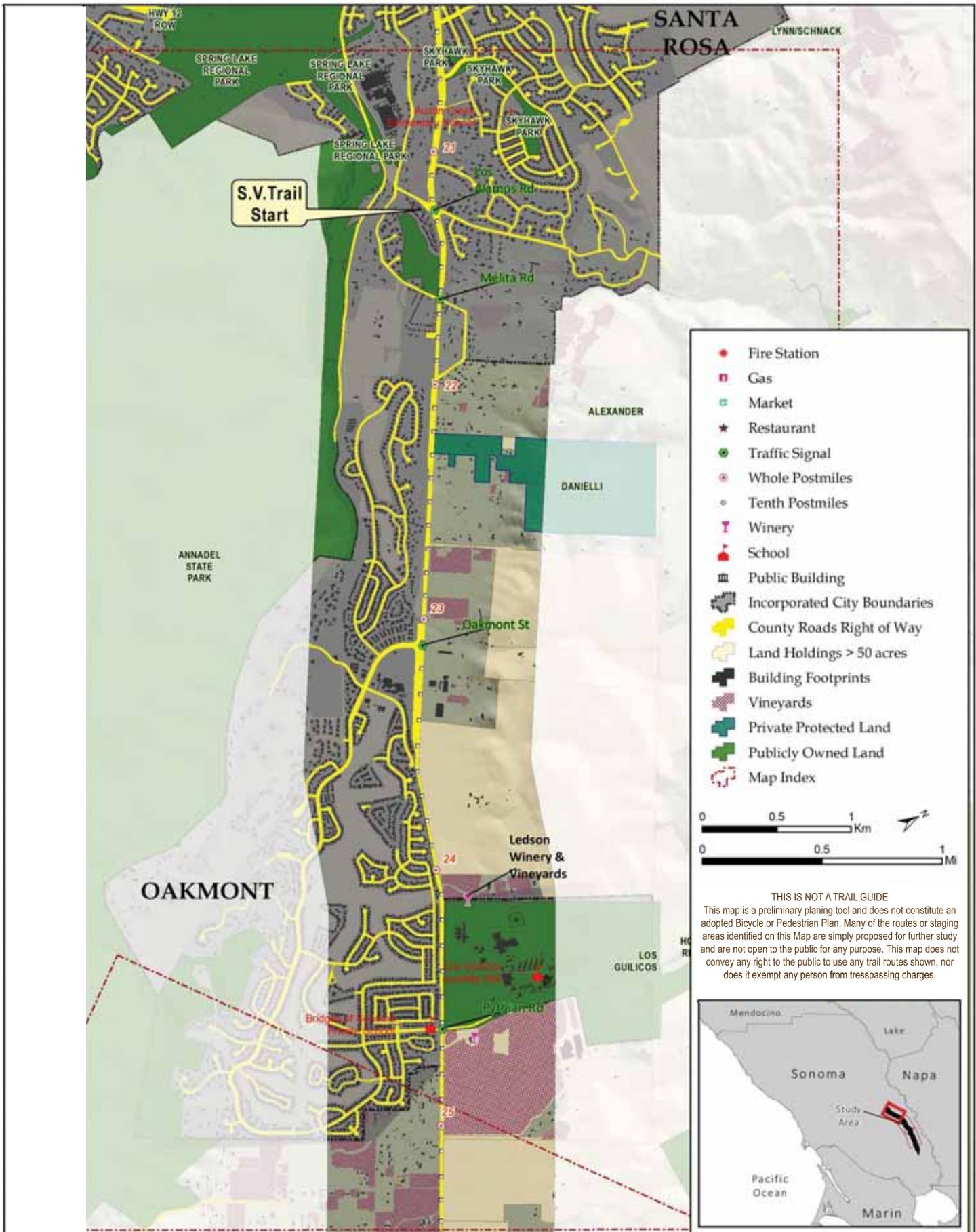
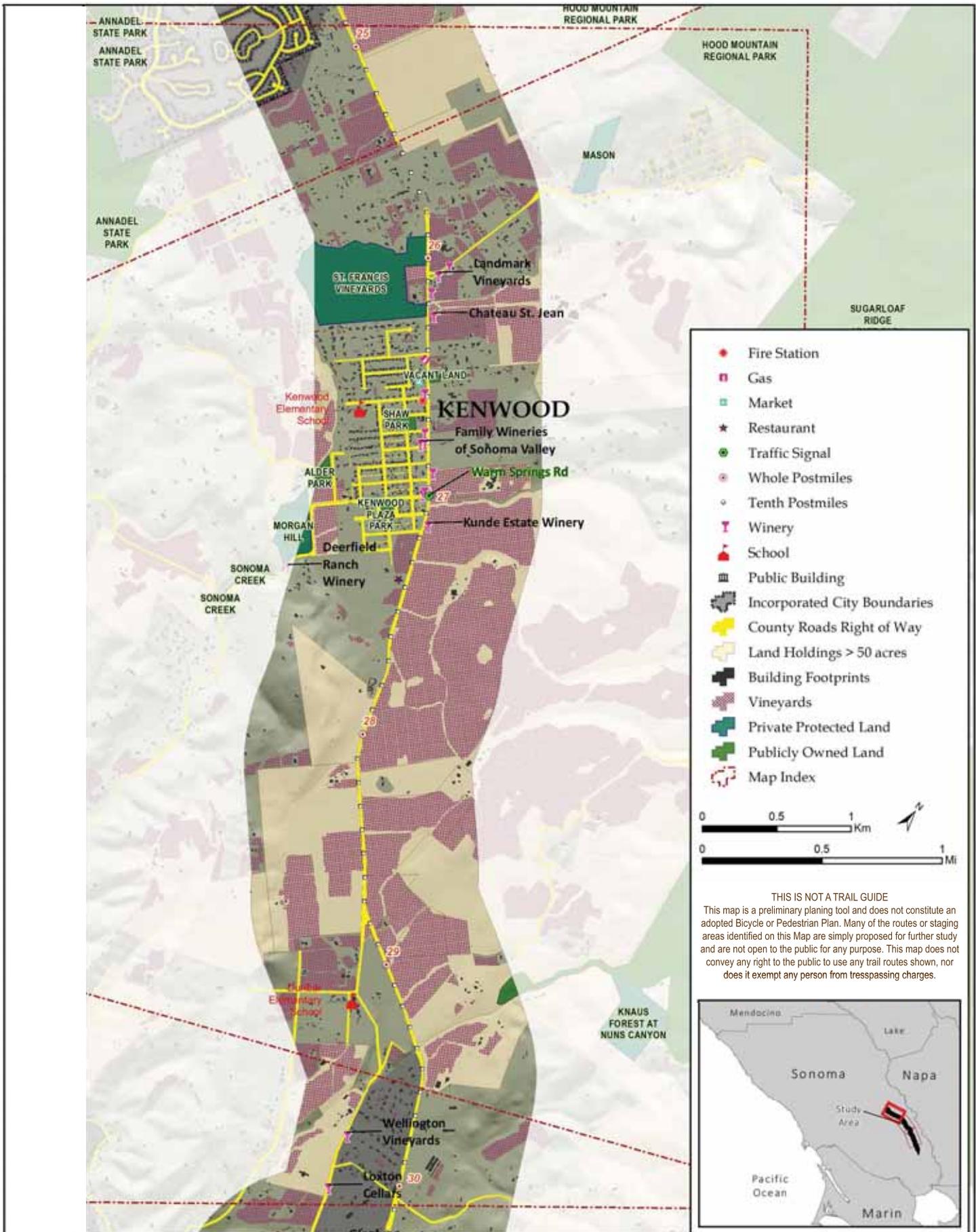


Figure 4-6

# Land Use - Oakmont Area

SONOMA VALLEY TRAIL FEASIBILITY STUDY





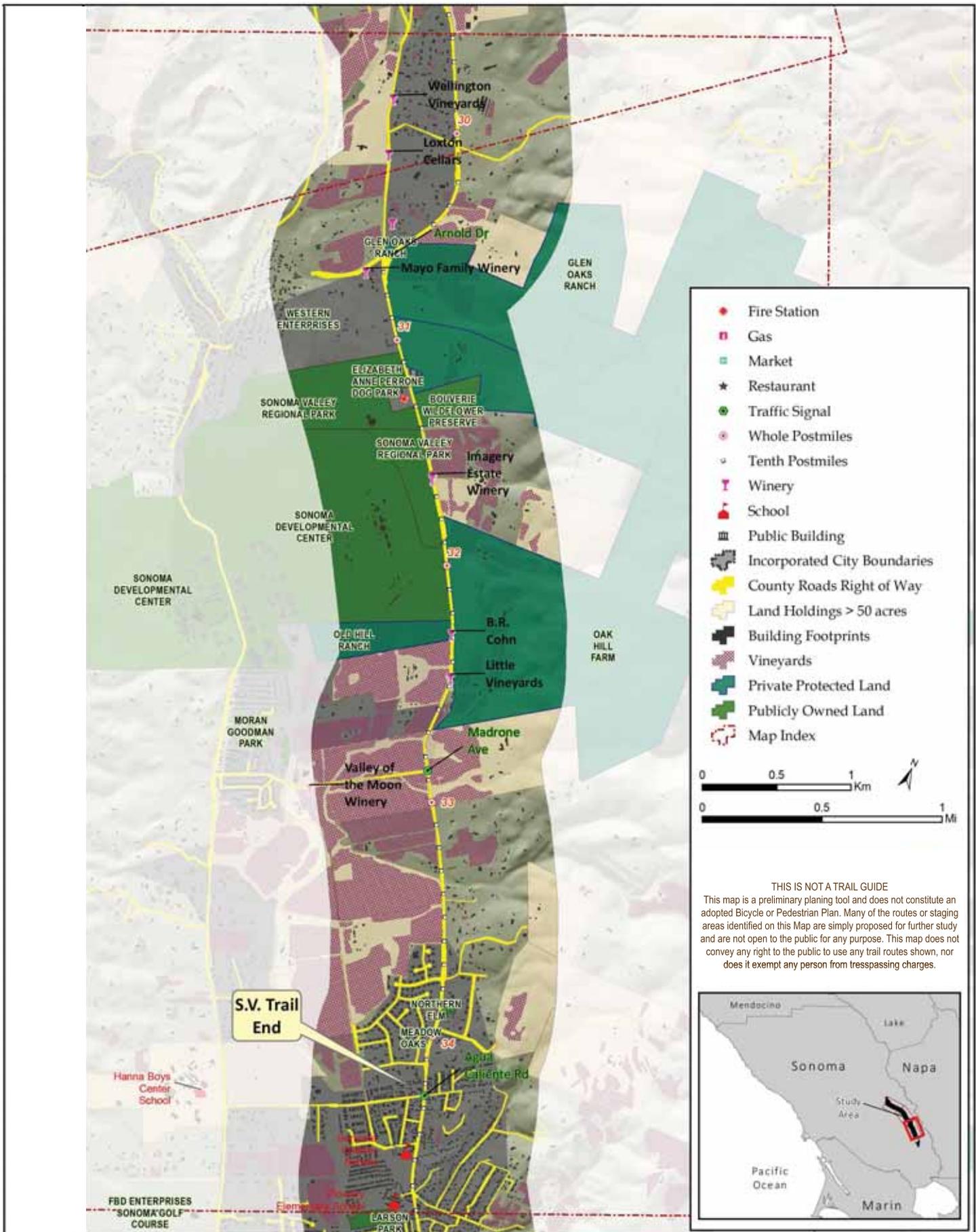
THIS IS NOT A TRAIL GUIDE  
 This map is a preliminary planing tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this Map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.

Figure 4-7

# Land Use - Kenwood Area

SONOMA VALLEY TRAIL FEASIBILITY STUDY





- Fire Station
- Gas
- Market
- ★ Restaurant
- Traffic Signal
- Whole Postmiles
- Tenth Postmiles
- Winery
- School
- Public Building
- Incorporated City Boundaries
- County Roads Right of Way
- Land Holdings > 50 acres
- Building Footprints
- Vineyards
- Private Protected Land
- Publicly Owned Land
- Map Index

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**S.V. Trail End**



Figure 4-8  
**Land Use - Agua Caliente Area**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



Sonoma Valley contains a mix of small, medium, and large properties including single family residences, farm lands, rural ranches, vineyard tracts, commercial and industrial uses, regionally significant parks and open spaces, and various properties owned by Sonoma County and the State of California. Sonoma



Valley also contains significant tracts of open space and productive agricultural lands that are owned and/or managed by conservation organizations and non-profit land trusts. Parks, open space, and protected lands are shown with a green shading on the draft Trails Plan Maps.

**Public Lands.** The primary public land holdings in the Study Area include: Sonoma Valley Regional Park; Sonoma Developmental Center and its' open space lands; Hood Mountain Regional Park and Open Space Preserve; McCormick Ranch; Sugarloaf Ridge State

Park; and Annadel State Park. In addition to these larger facilities, Sonoma County Regional Parks operates two community parks in Kenwood that may serve as staging or resting areas for bicyclists and pedestrians using the future Sonoma Valley Trail.

The ***Sonoma County Agricultural Preservation and Open Space District*** (SCAPOSD) owns, manages, or holds conservation easements on a variety of properties throughout the Sonoma Valley. Larger properties include Calabazas Creek Preserve and Hood Mountain Regional Park and Open Space Preserve.

The ***Sonoma Land Trust***, a non-profit, also owns and manages several open space preserves and natural areas in the Valley, including Glen Oaks Ranch, Stuart Creek Hill, and Stuart Run, all near Glen Ellen. ***Audubon Canyon Ranch***, another non-profit organization, operates the well-known Bouverie Preserve in this same general area. Of these, the Stuart Creek Run property is open to the public.

One of the goals of the Sonoma Valley Trail is to provide access and trail connections to parks and public open space preserves in the greater Sonoma Valley, including destinations in eastern Santa Rosa and connections to the Bay Area Ridge Trail. The Sonoma Valley Trail is being planned to provide trail connections to these areas where possible.

***Caltrans*** is also one of the moderate-sized landowners within Sonoma Valley. Caltrans' owns vacant parcels along Highway 12 in the community of Kenwood, as well as along Santa Rosa Creek near Melita Road. In addition to these parcels, Caltrans owns a variable-width right of way along Highway 12, extending well beyond the existing road shoulders in many areas. This right of way ranges from a few feet beyond the existing edge of pavement in constrained areas, up to 30 feet in additional width beyond edge of pavement in some areas. In these wide right-of-way areas, state ownership may extend beyond existing field fence lines, with encroachment by private signage and fencing into the public right of way. It appears that some of this right of way was previously acquired to facilitate highway widening.



The **County of Sonoma** also owns road right of way along Highway 12, in some cases outward of and parallel to the Caltrans right-of-way. County right-of-way along Highway 12 is not continuous, and appears to have been acquired at one time when the County and State were considering adding additional lanes along the road. County owned right-of-way and potentially some of the state right-of-way that may not be needed for safety or other highway improvements in the future represents an opportunity to locate the trail. This will require additional discussions with both Sonoma County Public Works and Caltrans.

County and State right of way along Highway 12 are depicted graphically on the draft Trail Plan. However, in many areas the road right-of-way has not been precisely located and mapped, but is approximately shown based on County Assessor parcel maps and other compiled information. Subsequent, detailed property boundary and right-of-way research and mapping will be needed in most areas as trail planning advances from feasibility review and planning through design and detailed assessment of any needed property acquisition.

The **Sonoma County Water Agency** (SCWA) owns and controls lands within the valley, either in fee, or through easements for their utility pipelines carrying water and wastewater. The SCWA's Design and Construction Standards indicate that utility easements "shall be no less than 15' in width". In some areas the utility corridor apparently follows the historic railroad route through the valley. This utility corridor includes several spurs and braches, and crosses Highway 12 near Oakmont. Other SCWA easements follow various creeks in the Valley, and/or parallel the road. In places the right-of-way appears to be wider than needed for purposes of water and wastewater pipeline transport and some of this right of way could potentially be made available for trail location. However, any trail that may be proposed along a utility easement, must be designed to avoid making anything other than very shallow cuts or fills over the pipelines. Additional discussions will be needed with the Water Agency to determine if a portion of their utility right of way can potentially be made available for the trail.

**Wineries.** According to the Sonoma Valley Vintners and Growers Association, wine grapes were first planted in the Sonoma Valley in 1824, and today the greater Sonoma Valley is home to over 13,000 acres of vineyards, 114 wineries, 76 tasting rooms, and 5 AVA's (American Viticulture Areas).<sup>4</sup> Vineyards, wineries, and wine tasting facilities are a very important part of the land-use and character of the Sonoma Valley. Some of the larger and well known vineyards and associated wineries that the Sonoma Valley Trail will need to pass very near to or would be located immediately adjacent to include Madrone Vineyards, Hamel Family Wines, Little Vineyards, RB Cohn, Benziger Winery, Kunde Estates, Kenwood Vineyards, Chateau St. Jean, La Rochelle, St. Francis, Ledson, and Landmark among others.

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<sup>4</sup> <http://sonomavalleywine.com/>



The Sonoma Valley Trail, and the expected influx of tourists choosing to tour wineries in the Valley on foot or by bicycle, can be an important contributor to the economic success of the wineries and wine tasting facilities, but the trail will need to be located, designed, operated, and managed carefully to insure that it does not interfere with the agricultural activities of the vineyards.



**Right of Way Needs. Section 8** discusses trail types and design needs associated with trail implementation. Where possible, the trail will be located within available public right of way, or located on private lands in agreement with affected property owners. It is likely that additional right of way may be needed to complete the trail in limited areas where there is insufficient width for a trail within the existing road right of way. Conservation lands within the study may also have restrictions or

conditions associated with public access.

Additional width may be needed in areas that have environmental constraints, utilities, or other conflicts such as:

- To provide a sufficient safety buffer between motorized travel and the trail alignment
- Heritage tree avoidance
- Creeks, drainages and creek crossings
- Utilities
- Street intersections
- To avoid existing or planned infrastructure

**Sonoma Valley Railroad.** Railroads had a significant role in the formation of the Sonoma Valley, establishing development patterns that shaped the valley into the way it is known today<sup>5</sup>.

To the extent that former railroad lands become a part of public or utility corridors, they are noteworthy, as they can



<sup>5</sup> Most of this information was obtained from <https://localwiki.org/sonoma-valley/Railroads>

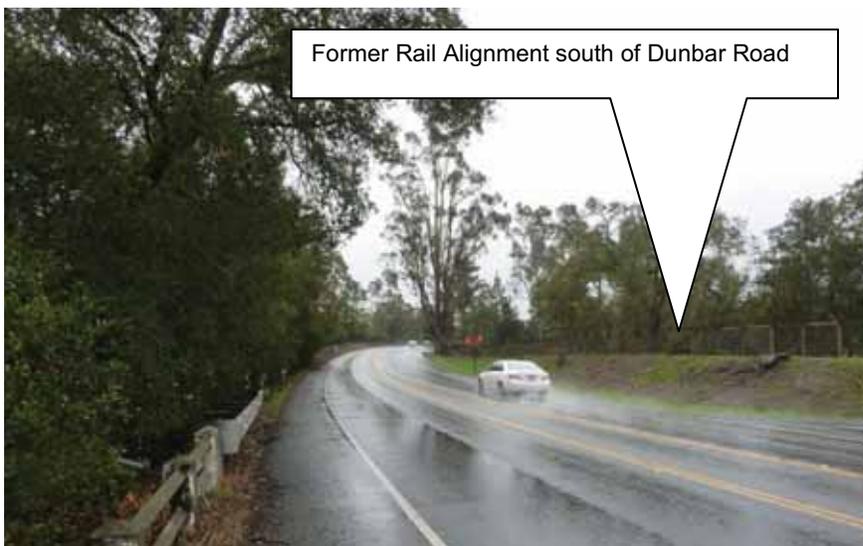


form a relatively linear route that can sometimes be utilized as a trail segment.

According to the Northwestern Pacific Railroad historical archives, at least 15 known railroad companies operated in the Valley. Many of the railway companies came and went, as they were formed and then absorbed by others. Ultimately two rail lines ran through the valley by 1889. The railroads operated from the 1880's until World War II. They brought Sonoma Valley products to markets in San Francisco and beyond. Exports began with stone and lumber, and progressed into meat, produce, and agricultural products from farms and ranches. Additionally, the railroads brought tourists and visitors into the Sonoma Valley, who were attracted to its' spas and summer resorts. Many of these visitors stayed and settled in the valley.

**Tracing the Rail Lines.** The two primary rail lines in the Sonoma Valley were both commonly referred to as the "Sonoma Valley Branch" by their various operators over the years. The "Glen Ellen Branch" was developed first. It started out as a prismoidal railroad, using a monorail-like technology that in the latter part of the 19th century was cheaper to construct than a conventional railroad, but it was quickly transformed into a narrow- and then broad-gauge line. It ran from Glen Ellen to Sonoma and connected southwest to Ignacio on San Pablo Bay in Marin County. This line was also referred to as "The Donahue Line" for Peter Donahue who was acknowledged as the principle businessman behind its establishment. The line was purchased by the San Francisco and North Pacific, and ultimately became part of the Northwestern Pacific Railroad (NWP).

The second railway line was the "Santa Rosa Branch" or "Sonoma Valley Branch" of the Northern Railway which ran from Napa Junction to Santa Rosa. The Southern Pacific (SP) built this route into the Valley. It crossed the NWP's "Glen Ellen Branch" at Schellville, served Glen Ellen, and continued up the valley to Santa Rosa. The Southern Pacific and Northwestern Pacific consolidated portions of these lines in 1934, resulting in the NWP between Yulupa and Glen Ellen to be abandoned in favor of the parallel SP



Former Rail Alignment south of Dunbar Road

line. The Sonoma-Yulupa-Glen Ellen tracks of both NWP and SP were abandoned in 1942. The SP/NWP continued to serve the city of Sonoma until the 1970s.

Around the Valley, portions of the railroad rights-of-way have been preserved. The City of Sonoma Bike Path utilizes the right-of-way between Highway 12 (adjacent to Maxwell Farms Regional Park) and 4<sup>th</sup> Street



East, and the portion of the branch to Vineburg, south of Sonoma, is currently planned as a bicycle and pedestrian pathway by Sonoma County Regional Parks.

### ***Constraints and Challenges***

Today, while physical evidence of the rights-of-way and former railroad operations are visible throughout the Valley, including old trestles, ballast, culverts, abandoned equipment, and the Sonoma Train Town Museum, much of the corridor north of the City of Sonoma is hidden behind fences and more recent development. At this point, it is unknown if sufficient lengths of historic rights-of-way are intact or would be suitable to develop short segments of the proposed Sonoma Valley Trail, but a Valley-wide utilization of the former rail corridor is not feasible.

### ***Design Considerations***

As a linear corridor, the former railroad alignment would seemingly be an ideal opportunity for re-use as a trail alignment. However, portions of the alignment are fenced as part of private yards, private streets, or discontinuous sections. There is a continuous section within Sonoma Developmental Center that should be preserved and incorporated into a trail network, however, it terminates at the gated Trestle Glen Drive, and further south at Las Flores Drive. Portions of the raised rail berm are visible south of Dunbar Road, but contain fenced and unfenced lands.

Opportunities exist for joint use of existing vineyard access roads that are parallel to the highway, but would afford trail users to be separated from the road. Although some of these lands are within public right of way, others are not and cooperation from the adjacent landowners would be needed. Possible temporary closure of the trail during agricultural operations, signage, or fencing may be needed.

### ***Additional Studies that May Be Needed***

- Further research is needed to determine extent of existing public right of way that is available for implementation of a trail project. This can be accomplished by completing additional boundary surveys and title research. During the design phase of each trail segment, detailed boundary and topographic survey information will be needed to





ensure that the trail can be safely located outside of necessary motorized right of way, and avoid environmental conflicts.

- Work with landowners along the alignment where opportunities exist for joint use and management of parallel access roads and design trail segments that incorporate management needs of adjacent lands, including posting of rules, fencing, signage, and need for periods of trail closure for agricultural management activities.
- Additional research is required into “superseded” County parcel maps, State Board of Equalization and Railroad records to make a proper determination regarding railroad right of way ownership. Preliminary research indicates that only disconnected portions of former railroad lands may be available and suitable as links and small segments of the trail.
- Use the experience gained from the work on the Vine Trail in Napa County as a guide.

#### 4.8 Transportation/Traffic

State Route 12 (Highway 12) is the primary east-west transportation route in central Sonoma County. In its' entirety, the route extends east from the City of Sebastopol to Highway 49 in the Sierra Nevada foothills of Calaveras County. Locally, it connects the cities of Sebastopol and Santa Rosa to the city of Sonoma and then south and east to the communities of Napa County and Interstate 80 in Solano County. Between Santa Rosa and the City of Sonoma, Highway 12 is known as “Sonoma Highway”. It is designated as a State Scenic Highway, the “Valley of the Moon Scenic Route”, and is functionally classified as a minor arterial (FC4). While the whole route is defined as part of the California’s Interregional Road System, most of the traffic in the study area between Santa Rosa and Sonoma is

local. Highway 12 connects commuters between Sonoma County’s cities, carries school traffic and local transit busses, feeds county arterials, and rural roadways that serve residences and ranches in the Sonoma Valley. Highway 12 also serves as the primary route for visitors and tourists in the Sonoma Valley and provides business access to the Valleys’ wine and agricultural industries.

#### **Existing Conditions**

The following description of the corridor and summary table of existing conditions (**Table 4-4**) are excerpted from the 2014 *State Route 12 (West) Transportation Concept Report*. Note that the report does not address bicycle safety issues and bicyclist/pedestrian discomfort when using

Highway 12, with inconsistent shoulder width, curves, line of sight visibility, driveway conflicts and intersections, bridge crossings without pedestrian improvements, and other issues.





### **Segment D: Los Alamos to Highway 121**

Segment D is the 20-mile section of Highway 12 from the edge of Santa Rosa to the City of Sonoma (Rural Town 5a), ending south of Sonoma at the intersection with Highway 121. For the most part, it is a conventional two-lane highway, very much a country road with growing traffic in the prosperous Sonoma Valley. Recently implemented projects were aimed at improving traffic flow to and from Santa Rosa, and projects are underway to provide better bike and pedestrian facilities in “The Springs” area (Rural Town 5a), just north of the City of Sonoma. In the City of Sonoma, Highway 12 (Sonoma Highway and West Napa Street) functions as a “Main Street,” a two-lane road with center double left-turn lanes, parking lanes and sidewalks. It connects “The Springs” area and the west side of the City with downtown and Sonoma Plaza. Broadway is the connection south between downtown and Highway 121. In Sonoma the highway configuration changes from four to three lanes with a center-turn lane. South of Sonoma, though, Highway 12 becomes a rural two-lane road with varying shoulder widths. It is not the main connection to Highway 121 as traffic primarily uses parallel Arnold Drive or Napa Road.

Sonoma County Transit services are not frequent and subject to the same congestion as other traffic using Highway 12. Due to the distance between Sonoma and Santa Rosa (20 miles), bike commuting is not practicable for most people, and increased traffic is adversely impacting recreational biking.

This section of Highway 12 has variable shoulders. Arnold Drive provides a somewhat quieter parallel biking route. As mentioned above, bike and pedestrian facility improvements are underway in “The Springs” area and bike lanes are proposed on Highway 12 in the City of Sonoma. The County is proposing a Class 1 bike path along the Highway 12 corridor from the Santa Rosa city limits to Agua Caliente Road.

The Caltrans Highway 12 right-of-way width varies between approximately 60 – 120 feet in the Study area. In various locations, additional County rights-of-way flank the State right-of-way. The County rights-of-way were apparently purchased in order to accommodate a center turn lane, shoulder widening, and other transportation improvements through the corridor. The right-of-way boundaries are shown in the map figures.



<b>Table 4-4: Summary Table of Highway 12 (West) Data and Information</b>				
<b>Segment</b>	<b>A Sebastopol to US 101</b>	<b>B US 101 to Farmers Lane (Santa Rosa)</b>	<b>C Farmers Lane to Los Alamos (Santa Rosa)</b>	<b>D Sonoma Valley</b>
<b>Freeway &amp; Expressway</b>	Yes	Yes/No	No	No
<b>National Highway System</b>	No	No	No	No
<b>Strategic Highway Network</b>	No	No	No	No
<b>Scenic Highway</b>	No	No	No	Partial*
<b>Interregional Road System</b>	Yes	Yes	Yes	Yes
<b>High Emphasis</b>	No	No	No	No
<b>Focus Route</b>	No	No	No	No
<b>Federal Functional Classification</b>	Freeway/Other Principal Arterial/Minor Arterial	Other Principal Arterial/ Minor Arterial	Other Principal Arterial	Other Principal Arterial/Minor Arterial
<b>Goods Movement Route</b>	No	No	No	No
<b>Truck Designation</b>	Terminal Access	Terminal Access	Terminal Access	Terminal Access, CA Legal Advisory
<b>Rural/Urban/Urbanized</b>	Urban	Urban	Urban	Mainly Urban
<b>Metropolitan Planning Organization</b>	Metropolitan Transportation Commission			
<b>Congestion Management Agency</b>	Sonoma County Transportation Authority			
<b>Air District</b>	Bay Area Air Quality Management District			
<b>Local Agencies</b>	Sonoma County, City of Sebastopol	City of Santa Rosa	City of Santa Rosa	Sonoma County, City of Sonoma

Source: 2014 State Route 12 (West) Transportation Concept Report

### **Traffic Volumes**

Caltrans collects and provides traffic count information on the State Highway System on an annual basis. The data is utilized to present a statewide picture of traffic flow, for evaluating traffic trends, to compute accident rates, for planning and designing highway improvements, and other purposes. 2013



traffic count information for the Highway 12 corridor in the Study Area is presented in **Table 4-5**. Data from the 2014 *State Route 12 (West) Transportation Concept Report* utilizes 2012 traffic counts. Caltrans' definitions for the data collection methodologies, terminologies, and traffic count data are provided in the following sections.

Post Mile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
21.23	Los Alamos Rd., Santa Rosa	1950	20600	20300	2000	21200	20800
26.11	Adobe Canyon Rd., Sonoma Co.	1700	17800	17500	1700	17800	17500
27.03	Warm Springs Rd., Kenwood	1500	15800	15500	1550	16200	15900
30.07	Trinity Rd., Sonoma Co.	1500	16000	15400	1500	16100	15500
30.65	Arnold Drive, Sonoma Co.	1500	16000	15400	1350	15700	14500
32.86	Madrone Rd., Sonoma Co.	1350	15300	14100	1150	13300	12300
33.4	Cavedale Rd., Sonoma Co.	1150	13100	12100	1300	14800	13700
34.25	Agua Caliente Rd., Sonoma Co.	1600	18200	16800	1500	17200	15900

Source: Caltrans 2013 Traffic and Vehicle Data Systems Unit

### **Annual Average Daily Traffic (AADT)**

Annual average daily traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Very few locations in California are actually counted continuously. Traffic Counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. AADT's capture both directions of travel in the count, so adding them together will result in erroneous data.



### ***Back and Ahead***

Back AADT usually represents traffic South or West of the count location and is the total volume for the year divided by 365 days.

Ahead AADT usually represents traffic North or East of the count location and is the total volume for the year divided by 365 days.

### ***Peak Month Average Daily Traffic (ADT)***

The peak month ADT is the average daily traffic for the month of heaviest traffic flow. This data is obtained because, on many routes, high traffic volumes that occur during a certain season of the year are more representative of traffic conditions than the AADT.

Caltrans' 2013 traffic counts indicate that peak month ADT along Highway 12 varies from 13,100 at Cavedale Road near Agua Caliente, to 21,200 at Los Alamos Road near Santa Rosa. Future growth in the corridor is based upon forecast traffic volumes developed using the Sonoma County Population Growth Model. Forecast volumes were calculated by route segment in the *2014 State Route 12 (West) Transportation Concept Report*. Future AADT along Highway 12 in the study corridor (Segment D) is estimated to increase to between 6,500 and 29,500 by the year 2035, approximately a 16% increase over 2012 volumes. An overview of 2012 AADT by intersection in the Study Corridor is provided in **Table 4-6**, and projected traffic growth is in **Table 4-7**.



<b>Segment</b>	<b>Post Mile</b>	<b>Intersection</b>	<b>Lanes</b>	<b>AADT</b>	<b>Jurisdiction</b>
Segment D Los Alamos Road – Highway 121	21.2	Los Alamos Road	3C	20,800	Santa Rosa
	26.1	Adobe Canyon Road	3C	17,500	Unincorporated Sonoma County
	27.0	Kenwood, Warm Springs Road	2C	15,900	
	30.1	Trinity Road	2C	15,500	
	30.7	Arnold Drive	2C	14,500	
	32.9	Madrone Road	2C	12,300	
	33.4	Cavedale Road	2C	13,700	
	34.3	Agua Caliente Road	2C	15,900	

Source: 2014 Caltrans State Route 12 (West) Transportation Concept Report



Location			Current Traffic Volumes			Forecast Traffic Volumes based on Sonoma County Population Growth Model		
Segment	Description	County	Post Mile From	Post Mile To	2012 AADT Range	Potential Increase Year 2035	Increase Range	Existing Facility Classification
D	Los Alamos Road (Santa Rosa) to Highway 121	Sonoma	21.23	41.36	25,500 – 5,600	16%	29,500 – 6,500	2C/4C

Source: 2014 Caltrans State Route 12 (West) Transportation Concept Report

### **Peak Hour Traffic**

Peak hour traffic volume is useful to determine the amount of congestion experienced on a roadway segment, and shows how near to capacity the highway is operating. Peak hour values indicate the volume in both directions. It is normal for a roadway to experience a few hours each year that are higher than the “peak hour,” but this does not happen often. Special winery events in the Sonoma Valley may result in this condition. In urban and suburban areas, the peak hour normally occurs every weekday, during what is considered “rush hour” traffic, typically during the morning and evening commute to/from work periods. On roads with large seasonal fluctuations in traffic, the peak hour is the hour near the maximum for the year but excluding a few (30 to 50 hours) that are exceedingly high and are not typical of the frequency of the high hours occurring during the season. 2013 peak hour traffic volume along Highway 12 varies from 1,150 at Cavedale Road to 2,000 at Los Alamos Road. The data indicates that the greatest concentration of traffic occurs at either end of the corridor near Santa Rosa and the Springs Area.

### **Bicycle and Pedestrian Collisions**

Bicycle and pedestrian collisions along Highway 12 in the study corridor were documented and mapped using the University of California’s Safe Transportation Research and Education Center (SafeTREC) Transportation Injury Mapping System (TIMS). The TIMS System utilizes data reported by the Statewide Integrated Traffic Records System (SWITRS). The SWITRS database is maintained by the California Highway Patrol. SWITRS is the standard used to document and analyze crash statistics by law enforcement, cities, counties, transportation professionals, and other agencies throughout California. It should be noted that due to their nature, it is widely believed that many pedestrian and bicycle crashes



go unreported, especially for solo incidents, and those that do not result in visible injury or property damage.

There were fourteen (14) total bicycle and pedestrian collisions recorded during the 10-year analysis period (1/1/2003 – 12/31/2012). Of the fourteen collisions, eleven were mapped by the system (**Figure 4-9**). Nine (9) bicycle collisions were recorded, including one fatality, and five (5) pedestrian collisions were recorded. The recorded collisions were distributed throughout months of the year, and all but two occurred outside of the influence of intersections. Four of the nine bicycle collisions were concentrated in the vicinity of Kenwood.

### **Vehicle Collisions**

Vehicle collision data for the 10 year period of January 1, 2003 – December 31, 2012 was documented and mapped in the study area using the University of California’s Safe Transportation Research and Education Center (SafeTREC) Transportation Injury Mapping System (TIMS). A heat map diagram of motor vehicle collisions not involving bicyclists or pedestrians was prepared to demonstrate highest concentration collision locations (**Figure 4-10**).



### **Transit and Multi-Modal Access**

Transit access and multi-modal transportation facilities play a vital role in providing transportation choices for people across Sonoma County. Convenient transit connections with basic infrastructure and amenities that are integrated into the transportation system have the potential to extend trip ranges for bicyclists and pedestrians who would use the Sonoma Valley Trail, not only to nearby communities, but to destinations beyond Sonoma County. Transit integration and user considerations are important for the Sonoma Valley Trail, and Sonoma County in general when some of the existing barriers to bicycle and pedestrian travel are considered, such as distances between communities, gaps in existing facilities, heat during summer months, and rain during winter months. While these obstacles may serve as deterrents to existing and potential trips by bike or by foot in the Sonoma Valley, integrating convenient multi-modal access into the Sonoma Valley Trail Plan can help to address these issues and extend trip ranges to nearby communities, employment centers, transportation centers, etc.

### **Transit to Trails – Car Free Hiking and Biking Adventures**

*Transit & Trails* is a project of the Bay Area Open Space Council. The Open Space Council is a coalition of organizations that includes nonprofits, city, county, regional, state and federal agencies that are involved in conserving, stewarding, and promoting the use of parks, trails, and open spaces in the San

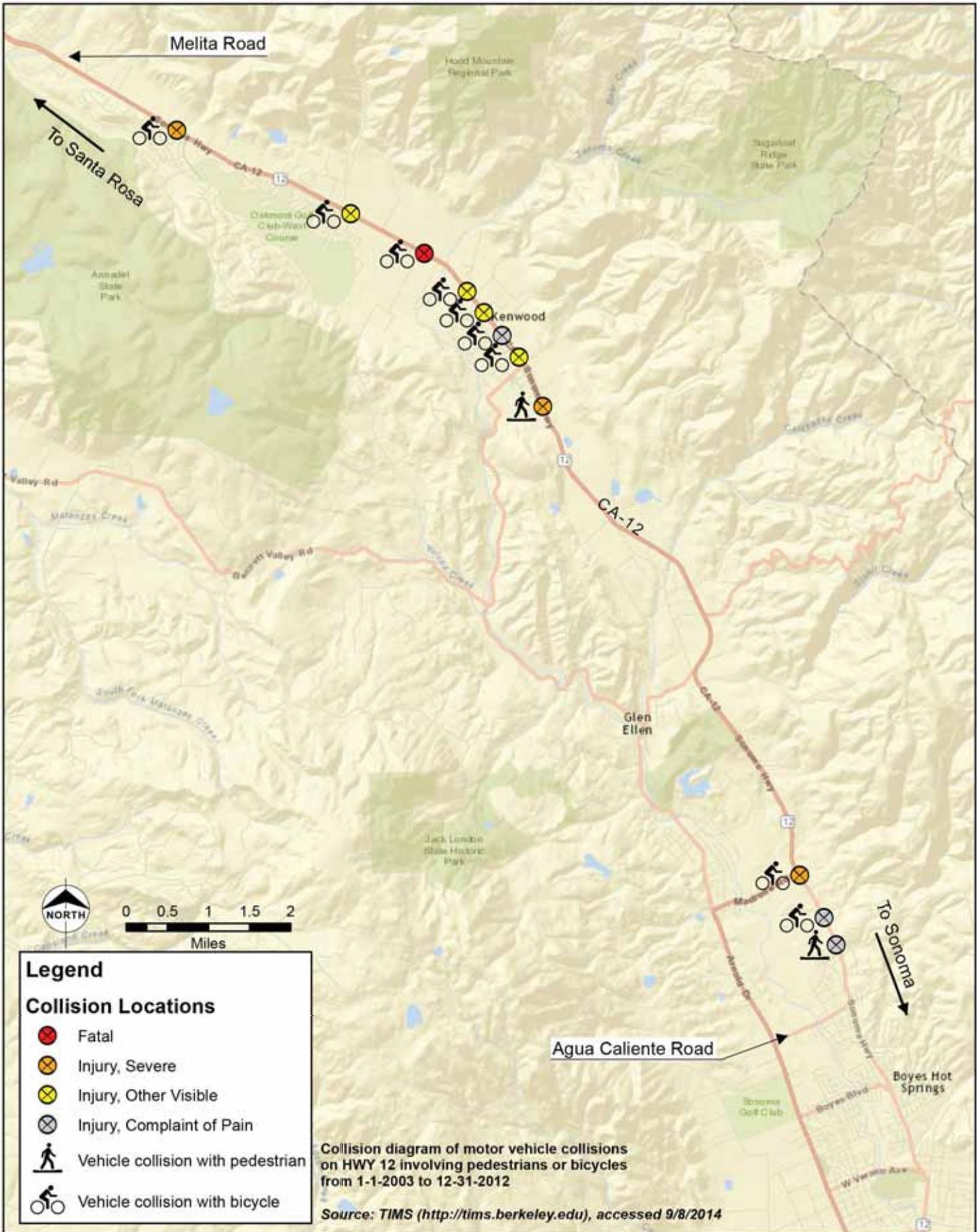


Figure 4-9

# Bicycle-Pedestrian Collisions

SONOMA VALLEY TRAIL FEASIBILITY STUDY



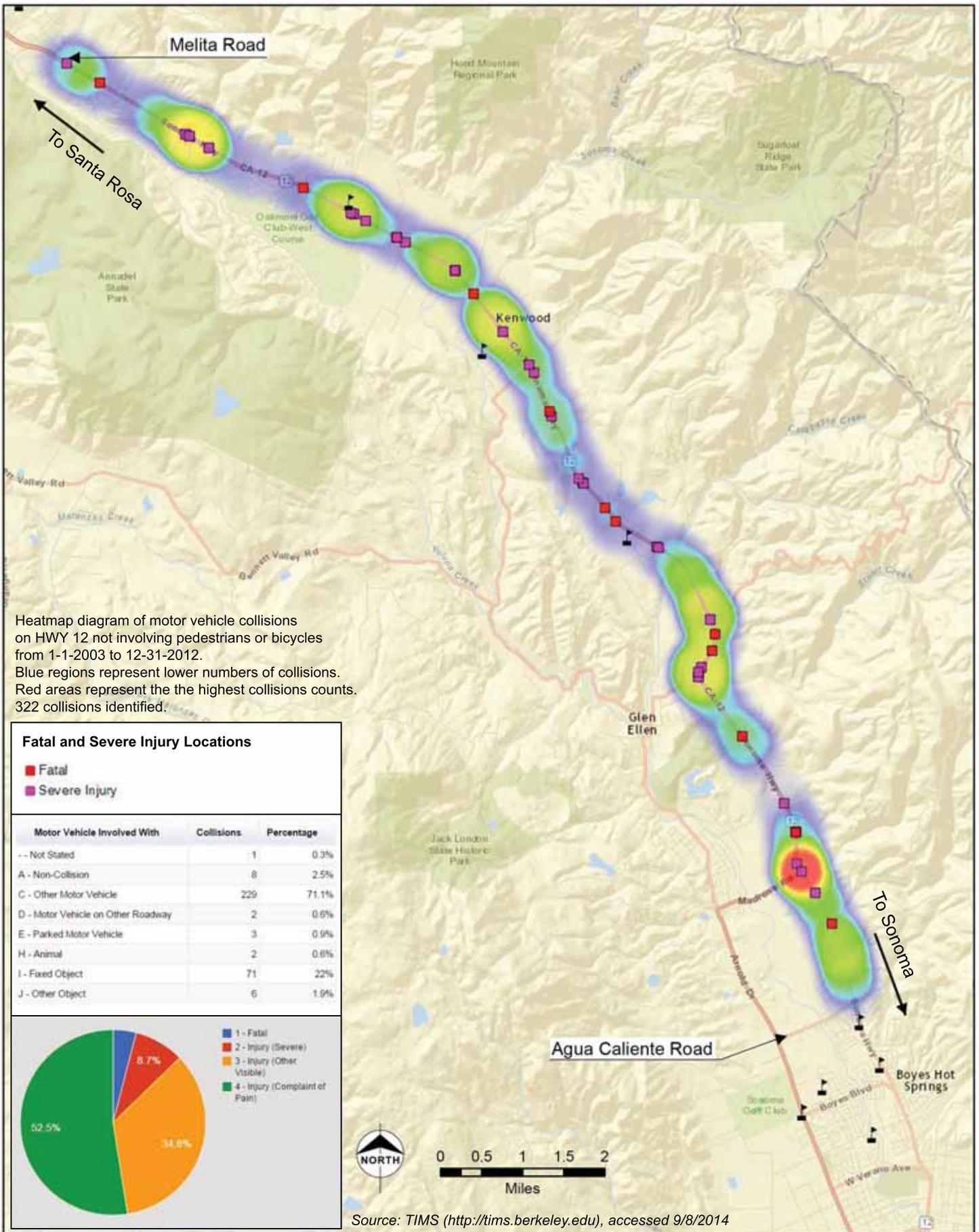


Figure 4-10  
**Vehicle Collisions**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



Francisco Bay Area. Since many of the Bay Area's parks, beaches, trails, and recreation areas are accessible by public transit, the Open Space Council has developed a promotional campaign and an on-line mapping tool to highlight some of the possibilities for car-free outings to help bring nature within reach of all Bay Area residents. The Sonoma Valley Trail combined with area transit service can provide several opportunities to access parks, open space destinations, and regional trails in the Sonoma Valley. Sonoma County members of the Open Space Council include: Sonoma County Agricultural Preservation and Open Space District, Sonoma County Regional Parks, Sonoma County Water Agency, and Sonoma Land Trust among others.



### **Sonoma County Transit**

Sonoma County Transit (SCT) provides local and regional fixed route bus service in the Sonoma Valley and throughout Sonoma County. SCT allows bikes on all of its buses. All buses are equipped with front loading bike racks that accommodate two bicycles. Bikes are allowed inside the bus if the front loading racks are full. Limited infrastructure and/or amenities are provided at transit stops along the Highway 12 corridor within the study limits. Stops generally consist of a sign located along the shoulder. However, transit shelters are provided at the southern limit of the study on Agua Caliente Road adjacent to Highway 12, and seating is provided at various stops in Kenwood. Five Sonoma County Transit routes serve the Sonoma Valley area. Route details are summarized below.

The 30 provides regular and express service daily between Santa Rosa and Sonoma via Oakmont, Kenwood, Glen Ellen, Agua Caliente and Boyes Hot Springs. The 30 operates on approximately one-hour headways on weekdays between 5:30 AM and 9:30 PM. Weekends, the 30 operates on approximately three-hour headways between 7:30 AM and 7:30 PM.

The 32 provides local service Monday – Saturday within the Sonoma Valley, it circulates through Agua Caliente, Boyes Hot Springs, the city of Sonoma, and Temelec. On weekdays, the 32 operates on approximately 45-minute headways from 8:00 AM to 5:00 PM. On Saturdays, the 32 operates on approximately one-hour headways from 9:00 AM to 3:00 PM.

The 34X provides express service between Santa Rosa and Sonoma via Kenwood and Glen Ellen on weekdays. 34X provides one eastbound trip in the morning, leaving the Santa Rosa Transit Mall at 6:45 AM, arriving at the Sonoma Plaza at approximately 8:00 AM, and one westbound trip is provided in the evening, leaving the Sonoma Plaza at approximately 4:30 PM, arriving at the Santa Rosa Transit Mall at 5:45 PM.

The 38 operates on weekdays, and provides service between Oakmont and the San Rafael transit center, with stops in Kenwood, Agua Caliente, Boyes Hot Springs, El Verano, Sonoma, and Schellville along the way. The 38 makes one southbound trip in the morning, departing from Oakmont at approximately 5:45 AM and arriving in San Rafael at approximately 7:00 AM, and one northbound trip in the evening, departing San Rafael at approximately 6:30 PM, arriving in Oakmont at approximately 7:45 PM.



The 40 provides weekday service between the cities of Sonoma and Petaluma, with service to and transfers via the Sonoma Plaza and the Petaluma Transit Center. The 40 operates on approximately 90-minute headways, and provides two roundtrips in the morning and three round trips in the evening. Service starts in Petaluma at approximately 6:30 AM and ends in Petaluma at approximately 6:30 PM.

### ***Santa Rosa CityBus***



Santa Rosa CityBus operates Oakmont City #16, which circulates through Oakmont, and makes one daily excursion to shopping areas outside of the community.

### ***Vine Transit***



The Napa County Transportation and Planning Agency operates Vine Transit. Vine Route 25 provides regional service between Napa and Sonoma on weekdays. Busses run between the Soscol Transit Center and Sonoma Plaza. Three trips are provided in the morning starting at approximately 6:30 AM and ending at approximately 11:00 AM, and three trips are provided in the afternoon starting at approximately 3:00 PM and ending at approximately 6:30 PM. Headways range between approximately 45 – 90 minutes.

### ***Sonoma Valley Unified School District Student Bus Service***

The Sonoma Valley Unified School District (SVUSD) operates eight (8) student bus routes that circulate throughout the City of Sonoma and the Sonoma Valley. SVUSD busses stop at various locations along Highway 12 in the Sonoma Valley, typically at cross streets, with Trinity Road near Kenwood being the westernmost stop, with the majority of the stops located along Highway 12 concentrated in the Springs area.

### ***Constraints and Challenges***

- Traffic safety, within the context of this trail study
- Separation of traffic from pedestrian and bicycle facilities
- Need for facilities for pedestrians related to transit stops, schools, destinations
- Use conflicts on multi-use trail where bicycles, pedestrians, and equestrians use the same trail

### ***Design Considerations***

- Prioritize facilities for pedestrians near transit, schools and destinations
- Provide separated facilities for bicyclists, pedestrians and equestrians where possible



- Incorporate trail implementation into traffic safety improvement projects where possible, including construction of Class 1 trail segments
- Incorporate pedestrian and bicycle facilities into intersection and signalization projects along the corridor

### ***Additional Studies that May Be Needed***

- Research of ownership of railroad
- Property or boundary surveys for individual parcels from which right of way will be needed
- Traffic study of Kenwood area regarding speed and pedestrian and bicycle facilities, intersections, etc.

## 4.9 Other Environmental Issues

Other environmental categories that are evaluated as part of a project are listed below. In general, implementation of the Sonoma Valley Trail is not anticipated to trigger significant impacts in these categories. These issues would be evaluated further when a specific project is defined.

- **Air Quality.** Implementation of trail projects typically does not negatively impact air quality, and may have beneficial impacts associated with reduction in vehicle use by trail users or commuters. Temporary air quality impacts due to construction activity are regulated to minimize potential effects.
- **Greenhouse Gas (GHG).** Like air quality, implementation of trail projects typically does not negatively impact greenhouse gas emissions, and may have beneficial impacts associated with reduction in vehicle use by trail users or commuters, and may be included in regional plans. Temporary impacts associated with project construction are analyzed as part of detailed implementation, and projects may require use of low emission equipment, minimization of off-site transport and other measures to reduce short-term effects.
- **Mineral Resources.** The trail would not affect mineral resources.
- **Noise.** The primary source of noise along the corridor is highway noise from vehicles. The trail would be unlikely to increase ambient noise levels. Temporary construction impacts associated with noise would be regulated to comply with code requirements, and to minimize potential effects. Specific impacts associated with trail implementation would be identified when the trail project is defined.
- **Population and Housing.** The trail would not affect population and housing.
- **Public Services and Recreation.** The trail would fulfill a recreational purpose, as well as enhance connections to existing and planned recreational facilities, and in some cases, may be beneficial by improving access for maintenance of existing public resources. Specific impacts associated with trail implementation would be identified when the trail project is defined.



- **Utilities and Service Systems.** Portions of the trail would be located within easement or on lands owned by utilities such as Sonoma County Water Agency or other entities. Overhead utility poles may conflict with a specific trail alignment. The trail alignment would be designed in coordination with applicable agencies to ensure that utility conflicts are minimized.

## 4.9 Permits and Approvals Needed

Biological resources are subject to regulatory requirements as outlined in the following local, state and federal statutes and policy documents:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (FESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- Porter-Cologne Water Quality Control Act
- Sonoma County General Plan 2020

**U.S. Army Corps of Engineers.** Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material or otherwise adversely modify wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through compensatory mitigation involving creation or enhancement of similar habitats.

**Regional Water Quality Control Board.** The State Water Resources Control Board (SWRCB) and the local San Francisco Bay Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The San Francisco Bay RWQCB enforces actions under this general order for



isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

**United States Fish and Wildlife Service.** The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 et seq.). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

**California Department of Fish and Wildlife.** The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened, endangered or fully protected species. Take under CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW also prohibits take for species designated as Fully Protected under the Code.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is



growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of plant.

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

**Sonoma County General Plan.** The Sonoma Valley Trail would be designed consistent with policies pertaining to biological resources in the County’s Open Space and Resource Conservation Element. The trail project would be subject to CEQA review to assess impacts on native species, habitat diversity, sensitive natural communities, wetlands, and wildlife movement corridors; moreover, the development of individual trail segments would be subject to project-level CEQA review. General Plan Policies related to biological resources include:

- Policy OSRC-7b (No Net Loss): trail segments would be approved with conditions and mitigation measures to achieve “no net loss” of designated Biotic Habitat Areas, with avoidance of habitat given highest priority. This policy requires a 100-foot setback from Marshes and Wetlands (such as Kenwood Marsh), and encourages wildlife-friendly fences and stream crossing in Habitat Connectivity Corridors.
- Policy OSRC-7k through -7m includes requirements for protecting native trees, particularly oak trees.
- Policy OSRC-8b would designate a 100-foot streamside conservation area at the trail’s stream crossings, within which trails and ecological restoration are allowed uses.
- Other General Plan policies that apply to the proposed trail will also reduce impacts to biological resources: Policies OSRC-1d through -1g apply design standards to projects within Community Separators, Policies OSRC-2a through -2e apply restrictions to projects within Scenic Landscape Units, and Policies OSRC-4a through -4c will limit night lighting along the trail.



## 5 BENEFITS ANALYSIS

### **Introduction**

This section provides an analysis of the benefits of multi-use trails. The analysis focuses on potential **Safety, Economic, and Public Health** benefits. Research was conducted to document local, regional, and national findings. Issues specific to the Sonoma Valley Trail are discussed, and local opportunities and benefits are highlighted. In addition to the three focus areas (Safety, Economics, and Public Health), multi-use trails and non-motorized transportation also yield significant environmental and societal benefits which include but are not limited to: helping Sonoma County to achieve its' goals to reduce VMT (vehicle miles traveled) and associated greenhouse gas emissions; protect open space and natural resources; preserve cultural and historical assets; and implement long-standing land-use and transportation plans and projects. Further, development of trail projects allows local agencies to gain access to regional, state, and federal transportation funding that is specific to non-motorized projects which would otherwise go to jurisdictions outside of Sonoma County.

Over the last two decades a number of studies have been performed that address a wide spectrum of multi-use trail/greenway and walking/bicycling related issues. These studies have been conducted at national, regional, and local levels by agencies such as the Federal Highway Administration (FHWA), National Park Service (NPS), state departments of transportation, universities, local agencies, non-profits, and various associations and trade groups. The findings in this section of the Feasibility Study draw upon the results of these studies.

### **Overview**

Multi-use trails, and walking and bicycling for both recreation and transportation have myriad benefits to both individuals and communities, examples of which have been documented throughout the nation. The development of multi-use trails or “greenways” and increasing opportunities for people to walk and bicycle can achieve a variety of community benefits. As a result, transportation legislation, funding mechanisms, and land-use and transportation policy have evolved substantially in the past two decades to support walking and bicycling as viable transportation modes, important community features, and healthy recreation activities.

Some of the many benefits of multi-use trails and walking and bicycling include:

- Making communities better places to live by preserving and creating open spaces;
- Encouraging physical fitness and healthy lifestyles;
- Creating new opportunities for non-motorized transportation and outdoor recreation;
- Improving traffic safety for bicyclists and pedestrians;
- Strengthening local economies;
- Protecting the environment; and
- Preserving culturally and historically valuable areas.



## **Safety Benefits**

Safety issues associated with trails and non-motorized transportation generally include **Traffic Safety**, **Personal Safety**, and **Property Crime**.

**Traffic Safety** is a top concern amongst all non-motorized travelers, and whether the concerns are real or perceived, they are a well-documented impediment to increased use of walking and bicycling.<sup>6</sup> Individuals who travel on foot, by bicycle, or the elderly who travel with the aid of a mobility device, are our most vulnerable roadway users. Real and perceived safety concerns limit the number of people who walk and bicycle along Highway-12 and the rural roadways in the Sonoma Valley. Safety concerns related to walking and bicycling in Sonoma County and the project corridor include: lack of safe places to ride, conflicts with vehicle traffic, high speed traffic, narrow roadways, lack of shoulders or bike lanes, limited lighting during dark hours, speed, and a lack of courtesy amongst roadway users. These concerns prevent many local residents from walking and bicycling in rural environments, from allowing their children to travel by bike or foot to area schools and local destinations, and from accessing nearby transit services by foot or bicycle.

As noted in Section 4, bicycle, pedestrian, and vehicle collisions were analyzed within the Highway 12 corridor as a component of the background analysis for the Sonoma Valley Trail project. During the 10-year analysis period beginning January 1, 2003 and ending December 31, 2012, nine (9) bicycle, five (5) pedestrian, and 333 vehicle collisions were recorded along Highway 12 between Melita Road and Agua Caliente Road. The collisions in the study corridor were documented and mapped using the University of California's Safe Transportation Research and Education Center (SafeTREC) Transportation Injury Mapping System (TIMS). The TIMS System utilizes data reported by the Statewide Integrated Traffic Records System (SWITRS). The SWITRS database is maintained by the California Highway Patrol. SWITRS is the standard used to document and analyze crash statistics by law enforcement, cities, counties, transportation professionals, and other agencies throughout California.

One of the nine bicycle collisions resulted in a fatality. The recorded bicycle and pedestrian collisions were distributed throughout the months of the year, and all but two occurred outside of the influence of intersections. Four of the nine bicycle collisions were concentrated in the vicinity of Kenwood where bicyclists are known to transition between Highway 12 and country roads. It should be noted that due to their nature, it is widely believed that many pedestrian and bicycle crashes go unreported, especially solo incidents, and those that do not result in visible injury or property damage.

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<sup>6</sup> FHWA National Walking and Biking Study, Case Study #1 Reasons Why Walking and Bicycling are Not Being Used More Extensively as Travel Modes, US DOT FHA, 1992



To better understand the potential traffic safety benefits associated with the proposed Sonoma Valley Trail, and walking, bicycling, and trails in general, the collision analysis performed for the *SCTA Countywide Bicycle and Pedestrian Master Plan (2014)*, and findings from the *National Non-Motorized Pilot Program (2013)* were reviewed. The vast majority of the bicycle collisions in Sonoma County (approximately 70%) are between bicyclists and motorists; only 1 percent of bicycle collisions involve a pedestrian<sup>7</sup>. *In 2012, 4,743 people were killed in pedestrian/motor vehicle crashes nationwide, more than 12 people every day of the year, and there were 76,000 reported pedestrian injuries; nearly one injury every 7 minutes. Pedestrians are over-represented in the crash data, accounting for 14 percent of all traffic fatalities but only 10.9 percent of trips.*<sup>8</sup> *Between 2007 and 2011, an average of approximately 120 pedestrian collisions were reported throughout Sonoma County on an annual basis. 92% of the collisions involved vehicles and pedestrians, and approximately 5% of the collisions resulted in a pedestrian fatality.*<sup>9</sup> Based on these findings, development of the proposed Sonoma Valley Trail would result in traffic safety benefit for bicyclists and pedestrians by providing a transportation corridor that is separated from motor vehicle traffic.

Further, local traffic safety benefits may be realized with improved bicycle and pedestrian access to area schools (Kenwood Elementary, Dunbar Elementary), transit stops, recreation destinations including Annadel State Park, Hood Mountain Regional Park, Sugarloaf State Park, Sonoma Valley Regional Park, and many other employment and commercial destinations located along the project corridor.

**Personal Safety** can include a variety of issues such as traffic safety, medical issues, and crime. The proposed Sonoma Valley Trail will provide a significant benefit to the personal safety of bicyclists and pedestrians by providing a safe and comfortable place to walk and bicycle separate from motor vehicle traffic. With the development of the proposed trail, residents and visitors who otherwise chose not to walk or bike in the area will have a safe environment to do so, one that is largely free from conflicts with motorized traffic. At locations where vehicular traffic intersects with the trail, the trail will likely need to be designed with countermeasures to minimize potential conflicts and increase user safety. The new trail will be operated and maintained by Regional Parks, regularly patrolled by park staff and local law enforcement, and have a public presence that will increase personal safety and security for trail users that far exceeds the current conditions encountered by those who walk or ride along Highway 12 or alternative County roadways in the Sonoma Valley. Within the City of Santa Rosa, the trail would be constructed, maintained, and operated by the City.

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<sup>7</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014

<sup>8</sup> Traffic Safety Facts 2012 Data, US Department of Transportation National Highway Traffic Safety Administration, April 2014

<sup>9</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014



Many people utilize Sonoma County Regional Parks' parklands and trails safely throughout the County on a daily basis. While accidents, injuries, medical emergencies, and occasional crimes do occur, these incidents can happen anywhere, and the risks of such incidents are generally not increased in parks or along trails. In fact, Sonoma County Regional Parks and local law enforcement work together to minimize potential crime and increase user safety through a variety of techniques including: facility design; operational procedures; speed limits; signing and striping; trail etiquette education; hours of operation; strategic lighting; maintenance; routine patrols by park staff and law enforcement; volunteer trail patrols; regular correspondence with affected property owners; signage and awareness campaigns for specific issues; and visitor feedback.

**Property Crime** and concerns about safety are a common objection to proposed trail projects, particularly in locations without relevant examples close by. Property owners and community members worry that property values will be negatively impacted, that they may experience a loss of privacy, and that the trail may serve as a conduit for more crime in their neighborhood. A number of studies have been conducted throughout the nation that have evaluated the impact trails have on safety and crime. These studies, police records, and experiential evidence in Sonoma County and the San Francisco Bay Area demonstrate that trails do not result in increased criminal activity. In fact, public trails bring an increase in legitimate public activity and a sense of ownership and public care that are a direct deterrent to crime and anti-social behavior.

While there are a number of trails and trail studies that can be reviewed for data, not all of them are created equally. That is, most major trail studies address corridors that are former or active railroad rights-of-way, many of which were abandoned or neglected, and/or include suburban, urban, or industrial land-uses. Thus development of public access in these locations often has the effect of cleaning up blight, restoring degraded habitat, or moving unwanted activities out of neglected urbanized areas. The proposed Sonoma Valley Trail differs in this regard, but still shares similarities since unrestricted public access is provided along Highway 12 twenty-four hours a day, 365 days a year.

Literary review of several major trail studies reveal several consistent findings:

- Crime on trails and/or in parks could affect people's perception in an undesirable way; and
- Problems or criminal activities most commonly associated with trails are litter, illegal use by motorized vehicles, vandalism, unleashed dogs, and noise.

Ultimately, the studies determined that crime on multi-use trails is minimal, and that incidents must be considered in perspective with crime rates and risks associated with other activities and in the community at large. The level of crime associated with recreational facilities is generally correlated with the level of crime in the neighboring area. To address potential crime, the development of a trail should have a designated operator, a clear plan for maintenance and patrol, and the ability to address issues that arise. While a poorly planned facility can result in problems, a well-planned facility can improve the quality of life for neighbors and the community, resulting in a more desirable place to live.



In a 1998 study, the Rails to Trails Conservancy (a national nonprofit dedicated to creating a nationwide network of trails from former rail lines and connecting corridors to build healthier places for healthier people), in cooperation with the National Park Service, conducted a survey of 372 trails from 38 states. The surveyed trails represented a diverse set of trail types (rural, suburban, and urban), lengths, and geographic locations. The motivation for the study was to help address the range of safety concerns that residents often voice during the planning phase of proposed trails. The study provides incident statistics for major crimes for the years 1995 and 1996 along the 372 trails surveyed in comparison to national crime rates. The study found crime rates on urban rail-trails to be very low when compared to national crime rates for urban areas, crime rates on suburban trails to be even lower than on urban rail-trails, and major crimes occurred even less frequently on rural rail-trails than on urban or suburban trails. A summary of the study's findings are provided in Table 1.

**Table 5-1**

**Comparisons of Incidence Rate of Major Crimes on Rail-trails to U.S. Crime Rates, 1995**

Crime	Urban		Suburban		Rural	
	1995 National*	Rail Trail**	1995 National*	Rail Trail**	1995 National*	Rail Trail**
<b>Mugging</b>	335	0.53	102	0.00	19	0.0
<b>Assault</b>	531	0.58	293	0.02	203	0.01
<b>Forcible Rape</b>	43	0.04	29	0.00	26	0.01
<b>Murder</b>	11	0.04	4	0.01	5	9.01

\*Rates per 100,000 Population. FBI Uniform Crime Reports for 1995

\*\*Rates per 100,000 users, RTC Survey results 1995

### ***Local Example: City of Sonoma Bike Path***

A telephone interview was conducted with the City of Sonoma Police Chief, regarding the City of Sonoma Bike Path and crime. Sonoma police had an internal discussion about the incidence of crimes on the path, and crimes that impact properties adjacent to and in the immediate vicinity of the path. The Police Department's informal conclusion was that no major incidents have been reported on the path,



and that the surrounding properties were not subjected to increased rates of crime or an increase in crimes of opportunity.

## **Economic Benefits**

The Economic Benefits of multi-use trails and walking and bicycling were analyzed by evaluating the following: **Transportation Impacts, Property Values, Jobs and Industry, and Tourism.** *In Sonoma County, the positive economic impacts of special events and year-round bicycling and walking are increasingly being recognized. The economic benefits are realized in the business sector as increased business and profits from direct sales, tourism and events, hospitality revenues, and more subtly through the walkability and bikeability of business place environments (including downtowns and rural roadside attractions) – known as “the profitability of ambiance”.*<sup>10</sup> The economic benefits of bicycling and walking were recently evaluated in two County documents prepared by the Sonoma County Transportation Authority; *Economic Impacts of Walking and Bicycling in Sonoma County* (2013), and the *Sonoma Countywide Bicycle and Pedestrian Master Plan* (2014 Draft). Findings from these documents are presented in the following sections. Some of the general economic benefits of trails and walking and bicycling include:

- Avoids the cost of auto ownership, environmental impacts, and dependence on foreign oil;
- Help to address the societal costs of inactivity, overweight, and obesity;
- Benefits the local economy through industry, services, and hospitality;
- Facilitates access to jobs and transit service for non-drivers;
- Walkability is increases property values; and
- Trails and related amenities attract tourism dollars.

**Transportation Impacts.** Each trip made on foot or by bicycle that replaces a vehicle trip reduces our society’s consumption of fossil fuels, the associated pollution and greenhouse gasses produced by vehicle emissions, and other environmental damage associated with auto transportation. *Walking and bicycling save money for Sonoma County pedestrians and bicyclists and economically benefit the County as a whole. While walking and bicycling are very economical, car ownership is expensive and consumes a major portion of many Sonoma County residents’ income. Fuel, maintenance, insurance, depreciation and parking add up to almost 15 percent of the average household’s income. When safe facilities are provided for pedestrians and bicyclists, people can walk and bike more and spend less on transportation.*<sup>11</sup>

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<sup>10</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014

<sup>11</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014



**Property Value.** Potential impacts to property values are a common concern of property owners located along or adjacent to proposed multi-use trails. Community and land-use changes can be difficult for all of us, and “not in my back yard” (NIMBY or Nimbyism) is a normal reaction to new development proposals everywhere. While concerns about negative impacts to property from new trails and public access are real and not to be dismissed, they are often overinflated. In general, studies conducted during the 1990’s and 2000’s about property values and trails from around the country, including examples in Sonoma County, indicate that property values remain consistent or increase slightly with the development of trails, and that real estate appraisers and agents believe that trails are a positive selling point for urban, suburban, and rural residential properties. A consistent finding amongst studies is that homebuyers and new homeowners place a more positive and significant value on trail access than continuing homeowners.

A national survey in 2002, co-sponsored by the National Association of Home Builders and the National Association of Realtors, asked 2,000 recent home buyers about the "importance of community amenities". Trails came in second, with the first response being highway access. Those surveyed could check any number of the 18 amenities, and 36 percent picked walking, jogging or biking trails as either "important" or "very important." Sidewalks, parks, and playgrounds ranked next in importance.

### ***Local Example - Brush Creek Trail, Santa Rosa***

A 1992 study of the Brush Creek Trail, in Santa Rosa, was conducted to determine the impacts of trails on property values and crime. The Brush Creek Trail runs along Brush Creek in Rincon Valley from Montecito Boulevard to the Santa Rosa Creek, just south of Highway 12. The study surveyed 75 property owners along the trail via door to door interviews, as well as apartment and mobile home park managers near the trail, real estate agents with listings near the trail, and law enforcement agencies by phone. Fifteen other cities were contacted for information on surveys regarding the effect of trails on property values and crime in their respective communities. The study shows neither increased crime nor decreased property values due to the trail. The overwhelming opinion was that the trail had a positive effect on the quality of life of the neighborhood. Sixty one percent of real estate agents said they use proximity to trails as selling points. 33% of residents said the trail would make their homes easier to sell, with 48% saying no effect. 23% said the trail would make their home sell for more, with 69% saying “no effect”.

“The Impact of the Brush Creek Trail on Property Values and Crime”, Santa Rosa, CA, Michelle Miller Murphy, Sonoma State University, April 13, 1992.

**Jobs and Industry.** A survey of bicycle and pedestrian related businesses conducted for the SCTA’s *Countywide Bicycle and Pedestrian Plan* found that Sonoma County is home to more than 50 bicycle and pedestrian related businesses. *The industry includes manufacturers and retailers of bicycles and parts; bicycle repair and maintenance services; running and cycling apparel; hydration equipment; bicycle tour*



*operators; and specialty foods and nutritional supplements. Associated businesses range from small independent shops, to large regional and national retailers. In 2013, local business owners were interviewed for the Countywide Bicycle and Pedestrian Plan in order to gain an informal understanding of the economic impacts bicycle and pedestrian related businesses have on the County. The survey determined that revenue from sales, rentals, repairs, and services from small and medium sized bicycle and pedestrian related business, excluding national chain stores, is estimated at \$900,000 to \$1.5 million annually.*

*A direct benefit of bicycling and walking in Sonoma County is through the job opportunities resulting from bicycle-related manufacturing, retail sales and maintenance of bicycles; planning, design and construction of non-motorized infrastructure; bicycle and pedestrian advocacy; safe routes and safety programs; plus those generated by non-motorized events (including associated media use and reporting); rentals; and tours. As described above, jobs may be directly related, or indirectly by way of visitor and resident spending ancillary to events and tourism.<sup>12</sup> According to the League of American Bicyclists, bicycling supports nearly 1.1 million jobs nationally.<sup>13</sup>*

**Tourism** is significant component of Sonoma County's economic profile. According to the Sonoma County Economic Development Board's (EDB) *2014 Annual Tourism Report*, destination spending (the money spent by tourists visiting Sonoma County) was estimated at \$1.6 billion in 2012, and the industry supports an estimated 17,700 jobs. According to the EDB's 2014 survey of tourism businesses, "the most reported niche market was culinary tourism (80%), followed by cycling (56%) and eco-tourism (50%)." Cyclists from around the world are drawn to Sonoma County for a variety of reasons including major bicycle events, its' storied environment and scenic and challenging rides, the suitable climate, and its' food, wine, and hospitality industry. Tourists participate in local races, club events, tour groups, and/or pursue independent itineraries and rides. *Independent tourism, and annual bicycle and pedestrian events provide a benefit to the local economy through spending by riders, support staff, riders' families, spectators, staff, and media personnel on food and drink, shopping, recreation and lodging. Organized bicycle events also generate business for local media and advertisement suppliers, event staff, enforcement, and ancillary services.<sup>14</sup>*

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<sup>12</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014

<sup>13</sup> Darren Flusche, The Economic Benefits of Bicycle Infrastructure Investments, League of American Bicyclists, June 2009

<sup>14</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014



### **Local Example - Sonoma County Tourism Bureau**

The Official Sonoma County Visitors Guide "Do you speak Sonoma?" advertising campaign prepared by the Tourism Bureau, highlights the 10 best things to do in Sonoma County. Number 9, is "Ride a bike".

*9. Ride a bike – Sonoma County is known as a cyclist’s paradise – 1,400 miles of secondary roads and off-road bike trails. Go all out, attacking tough climbs or cycling from winery to winery on a tasting tour; Sonoma County offers you the best cycling experience in Wine Country.*

- See more at: <http://www.sonomacounty.com/articles/10-best-highlights#sthash.EtzSbZhE.dpuf>

### **Public Health Benefits**

The health benefits of regular physical activity are documented in extensive medical research. They are known to be far reaching and to improve the quality of life for people of all ages. The U.S. Department of Health and Human Services recommends adults achieve at least 150 minutes of moderate cardiovascular exercise per week, such as walking or bicycling, in addition to strength training. According to the federal government, "biking for transportation can count toward the minimum 150 minutes a week of moderate-intensity aerobic activity recommended for physical health. It is also listed as the safest way to get physical activity."<sup>15</sup> Periods of cardiovascular activity can be as short as 10 minutes to provide benefits. Public Health benefits associated with multi-use trails and walking and bicycling include personal health benefits, community benefits, and larger societal benefits. Regular physical activity is shown to help:

- Reduce the risk and impact of cardiovascular disease and diabetes;
- Reduce the risk of certain types of cancer;
- Reduce asthma cases;
- Control weight;
- Improve mood and mental health;
- Cut health care costs; and
- Reduce the risk of premature death.

Over the last decade, there has been greater recognition of the health impacts of transportation choices. Many of these impacts are directly related to public costs of health care delivery; and lost productivity due to sickness and absenteeism. If a population’s health can be improved through the increase in non-motorized modes, personal, private (e.g., employers) and governmental costs can be

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<sup>15</sup> U.S. Department of Health and Human Services, 2008 - 2008 Physical Activity Guidelines for Americans



reduced.<sup>16</sup> A study of nearly 2,400 adults found that “those who biked to work were fitter, leaner, less likely to be obese, and had better triglyceride levels, blood pressure, and insulin levels than those who didn't active commute to work.”<sup>17</sup>

Another health benefit of walking and bicycling is that it becomes safer as it becomes more popular. Called “Safety in Numbers,” a 2004 study of collisions at intersections indicates that as more people walk through a particular intersection, pedestrians at that location are safer. The study showed that if the number of people walking in a given intersection is considered when evaluating how many vehicle-pedestrian collisions occur, the risk that a pedestrian might be hit by a motor vehicle is often lower at intersections with greater pedestrian volumes—even if those intersections experience more collisions.<sup>18</sup> The public health and physical activity benefits of the proposed Sonoma Valley Trail will continue long into the future, as more people take advantage of the trail and the growing network of non-motorized facilities in the area and Sonoma County.

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<sup>16</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014

<sup>17</sup> Gordon-Larsen, P., et al., 2009 - Active commuting and cardiovascular disease risk, Archives of Internal Medicine, 169, 1216-1223

<sup>18</sup> Sonoma Countywide Bicycle and Pedestrian Master Plan, Sonoma County Transportation Authority, Draft 2014



**6 ISSUES, OPPORTUNITIES, ALTERNATIVES**

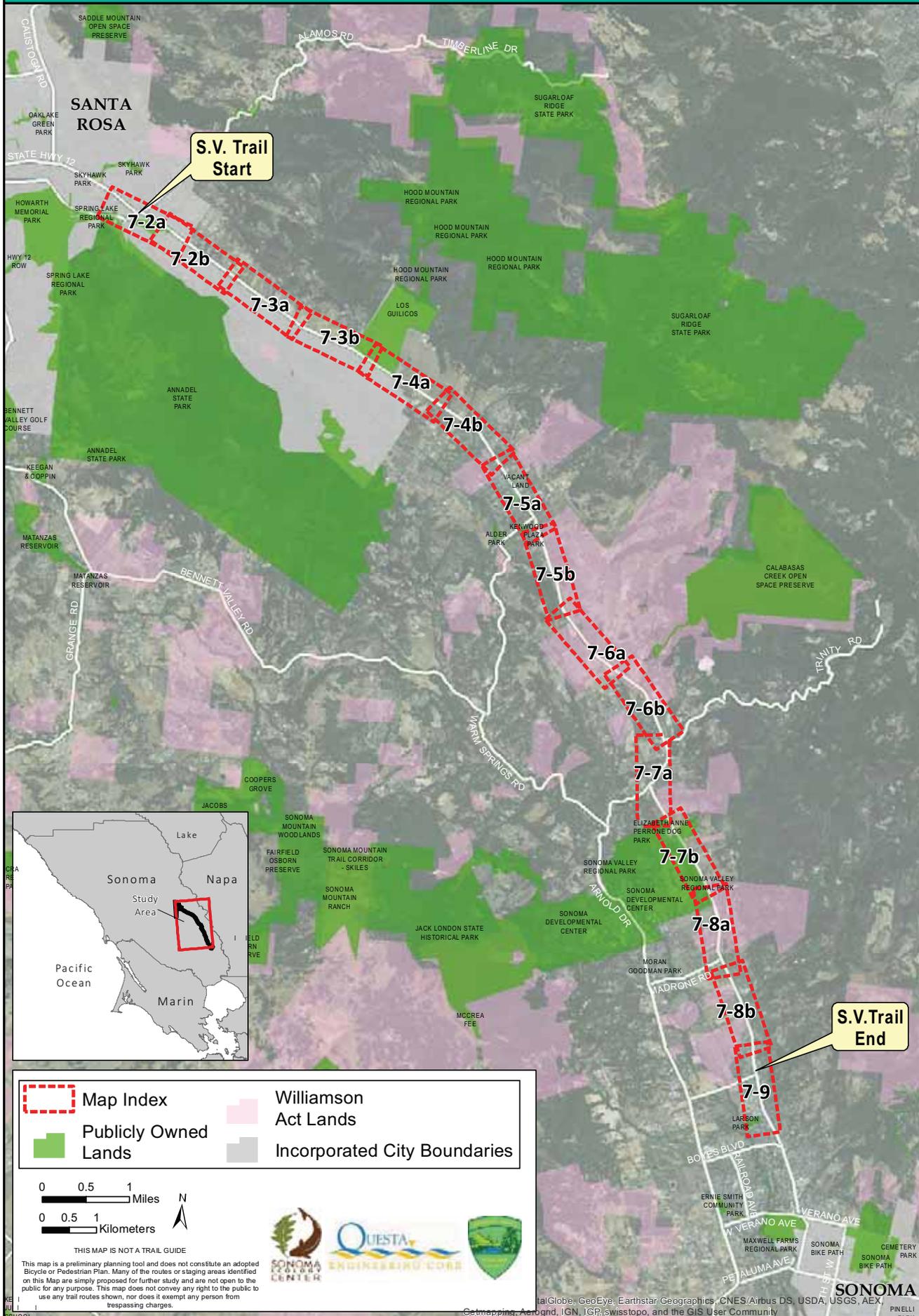
**6.1 Options and Alternatives**

Potential trail alignments and alternatives (seven segments) along Highway 12 were identified by the study team and interested residents during the first two community workshops. Each of the segments start and stop at a segment break or node, generally a signalized intersection or other feature selected because it consists of a destination point and has “independent utility,” which is important in funding and phased implementation. Several roughly parallel alignment options were developed and evaluated within each segment. Each of these was assigned a letter (e.g., 1E, 1W, east or west side of Highway 12).

**Table 6-1** summarizes the potential trail alignment options identified (**Figure 6-1**, Overview), including a typical ground photograph of the area.

<b>Table 6-1: Potential Trail Segments</b>				
Segment	Location	Begin Postmile (Approx)	End Postmile (Approx)	Length (LF)
<b>Segment 1: Los Alamos Road to Oakmont Drive</b>				
1E	East side HIGHWAY 12	21.2	23.1	10,000
1W	West side HIGHWAY 12			
				
<b>Segment 2: Oakmont Drive to Pythian Road</b>				
2E	East side HIGHWAY 12	23.1	24.6	7,800
2W	West side HIGHWAY 12			

# Sonoma Valley Trail Feasibility Study



**6-1 Trail Segments Overview**



**Table 6-1: Potential Trail Segments**

Segment	Location	Begin Postmile (Approx)	End Postmile (Approx)	Length (LF)
<b>Segment 3: Pythian Road to Warm Springs Road</b>				
3E	East side HIGHWAY 12	24.6	27.0	12,700
3W	West side HIGHWAY 12			
<b>Segment 4: Warm Springs Road to Dunbar Road</b>				
4E	East side HIGHWAY 12	27.0	28.8	9,600
4W	West side HIGHWAY 12			
<b>Segment 5: Dunbar Road to Arnold Drive</b>				



**Table 6-1: Potential Trail Segments**

Segment	Location	Begin Postmile (Approx)	End Postmile (Approx)	Length (LF)
5E	East side HIGHWAY 12	28.8	30.6	9,600
5W	West side HIGHWAY 12			
<b>Segment 6: Arnold Drive to Madrone Road</b>				
6E	East side HIGHWAY 12	30.6	32.9	12,200
6W	West side HIGHWAY 12			
<b>Segment 7: Madrone Road to Agua Caliente Road</b>				
7E	East side HIGHWAY 12	32.9	34.3	7,400
7W	West side HIGHWAY 12			



**Table 6-1: Potential Trail Segments**

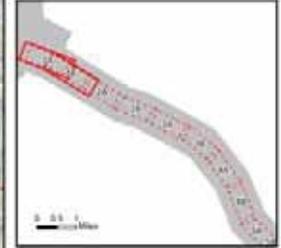
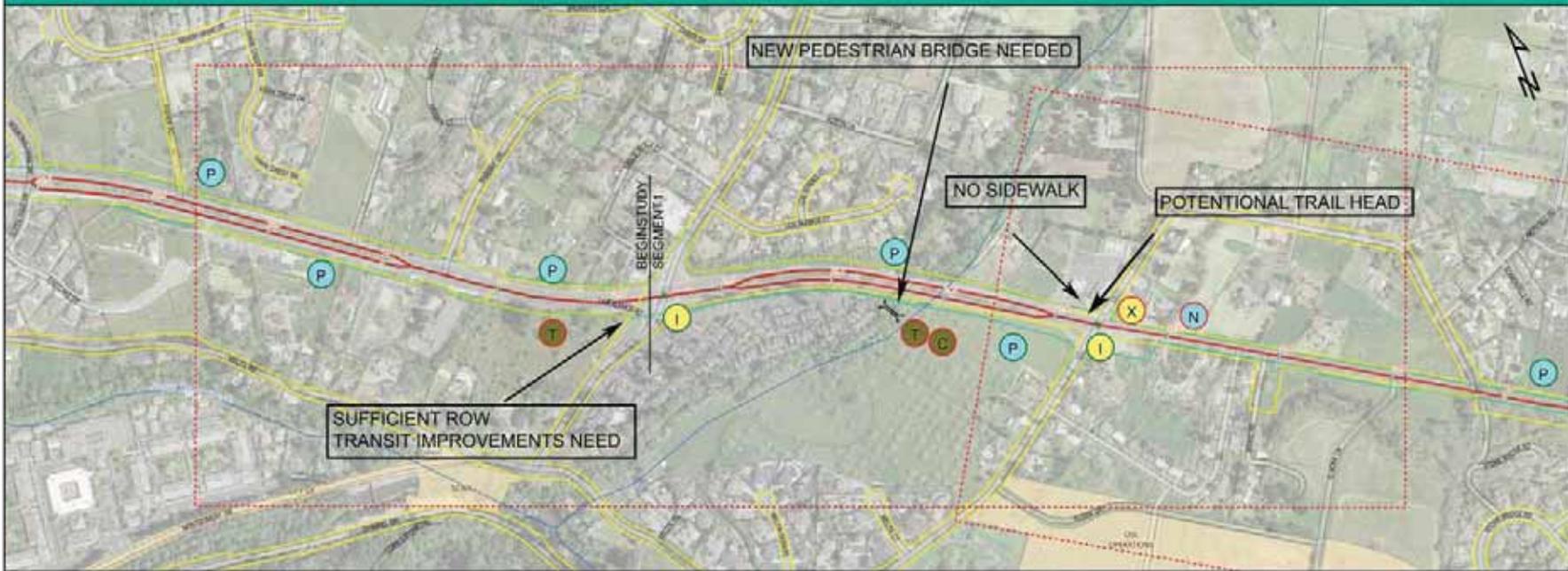
Segment	Location	Begin Postmile (Approx)	End Postmile (Approx)	Length (LF)
				

6.2 Opportunities and Constraints

Aesthetics		Hydrology/Water Quality	
View/Overlook opportunity		Flood prone area	
Ag Resources		Land Use	
Ag resources near road		Encroachment	
Biology		Narrow public ROW	
Sensitive species		Wide public ROW	
Wetland/Marsh		Transportation/Traffic	
Creek crossing		Signalized intersection	
Oak Trees		Congested Area	
Cultural Resources		Transit Stop	
Historic features (Bridges)			
Geology/Soils			
Potential slope or erosion potential			

The study team mapped opportunities and constraints to trail implementation, as shown in **Figures 6-2 through 6-9**.

Based on the assessment of existing environmental conditions in the study area, a matrix (**Table 6-2**) was developed to illustrate the degree of environmental constraints with regard to building the proposed Sonoma Valley Trail. The matrix is organized by potential trail alignment, segment, and environmental issue. Environmental issues as discussed in **Section 4** reflect the degree of constraints assigned to each segment. Segments shaded yellow (**Table 6-2**) are the least constrained, or highest ranked segments.

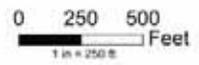


**Legend**

- Traffic Signal
- Whole Postmiles
- Tenth Postmiles
- Map Index
- County Roads Right of Way
- CalTrans Right of Way
- Streets
- Streams
- Land Holdings > 50 acres
- Parcels
- Guardrail
- Bridge

**Opportunities / Constraints**

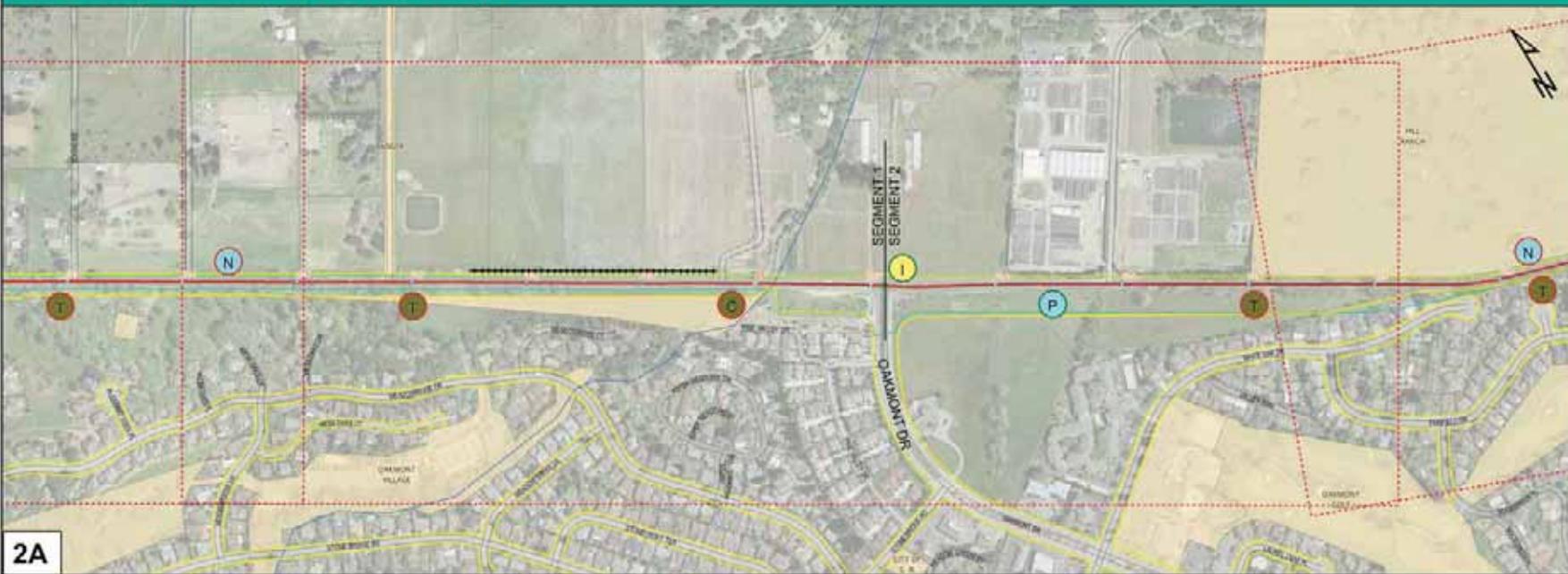
- |   |                                     |
|---|-------------------------------------|
| <b>Aesthetics</b>                       | <b>Geology/Soils</b>                |
| <b>V</b> View/Overlook opportunity      | <b>A</b> Potential slope or erosion |
| <b>Ag Resources</b>                     | <b>Hydrology/Water Quality</b>      |
| <b>V</b> Ag resources near road         | <b>F</b> Flood prone area           |
| <b>Biology</b>                          | <b>Land Use</b>                     |
| <b>W</b> Sensitive bio/wildlife species | <b>E</b> Encroachment               |
| <b>M</b> Wetland/Marsh                  | <b>N</b> Narrow public ROW          |
| <b>C</b> Creek crossing                 | <b>P</b> Wide public ROW            |
| <b>T</b> Oak trees                      | <b>Transportation/Traffic</b>       |
| <b>Cultural Resources</b>               | <b>I</b> Signalized intersection    |
| <b>H</b> Historic features (Bridges)    | <b>X</b> Congested area             |
|   | <b>L</b> Adjacent to public land    |



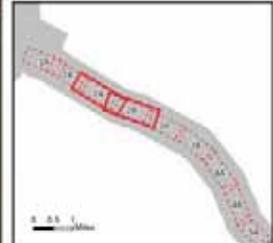
**FIGURE : 6-2**



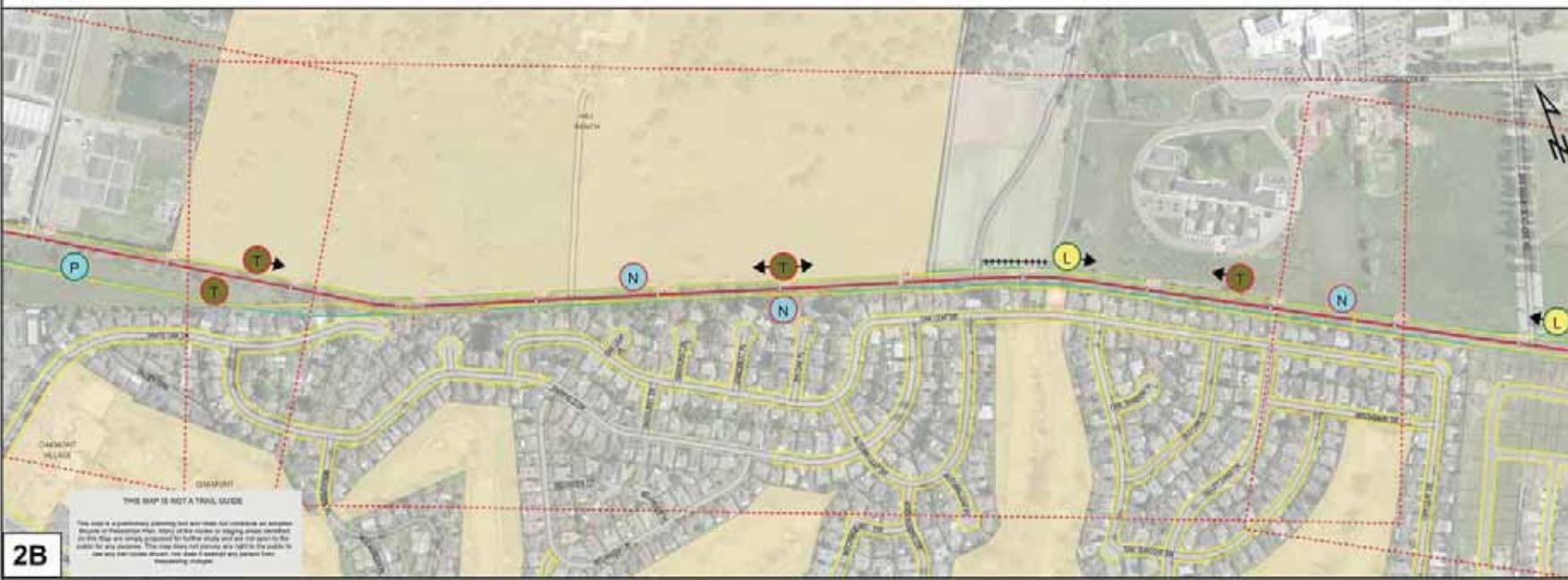
This map is a preliminary planning tool and does not constitute an adopted design or construction plan. Plans of other modes of existing public transportation or other maps are hereby approved for further study and will not open to the public for any purpose. This map shall not constitute any right to the public to use any public resource, nor shall it constitute any contract. Sonoma Valley Trail Authority



2A



- Legend**
- Traffic Signal
  - Whole Postmiles
  - Terch Postmiles
  - Map Index
  - County Roads Right of Way
  - Caltrans Right of Way
  - Streets
  - Streams
  - Land Holdings > 50 acres
  - Parcels
  - Guardrail
  - Bridge



2B

- Opportunities / Constraints**
- |   |                                     |
|---|-------------------------------------|
| <b>Aesthetics</b>                       | <b>Geology/Soils</b>                |
| <b>O</b> View/Overlook opportunity      | <b>A</b> Potential slope or erosion |
| <b>Ag Resources</b>                     | <b>Hydrology/Water Quality</b>      |
| <b>V</b> Ag resources near road         | <b>F</b> Flood prone area           |
| <b>Biology</b>                          | <b>Land Use</b>                     |
| <b>W</b> Sensitive bio/wildlife species | <b>E</b> Elnochment                 |
| <b>M</b> Wetland/Marsh                  | <b>N</b> Narrow public ROW          |
| <b>C</b> Creek crossing                 | <b>P</b> Wide public ROW            |
| <b>T</b> Oak trees                      | <b>Transportation/Traffic</b>       |
| <b>Cultural Resources</b>               | <b>I</b> Signalized intersection    |
| <b>H</b> Historic features (bridges)    | <b>X</b> Congested area             |
|   | <b>L</b> Adjacent to public land    |

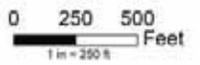
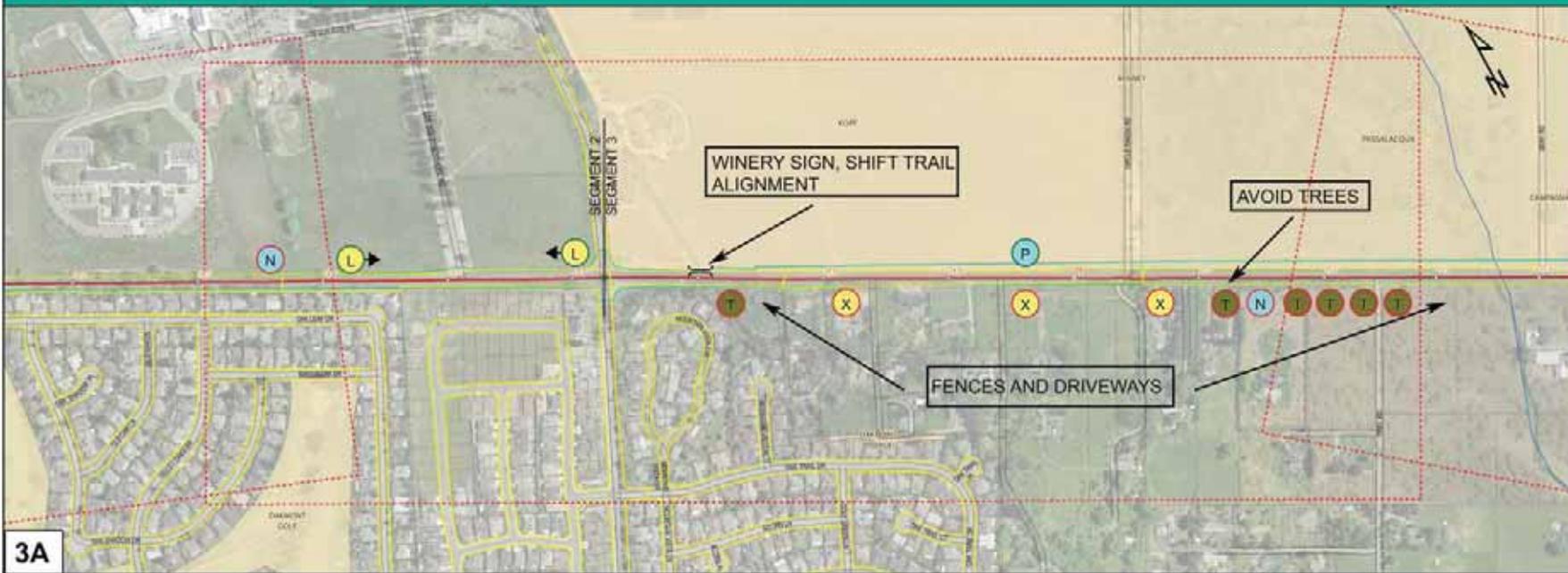


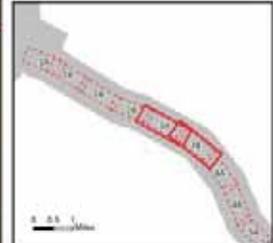
FIGURE : 6-3



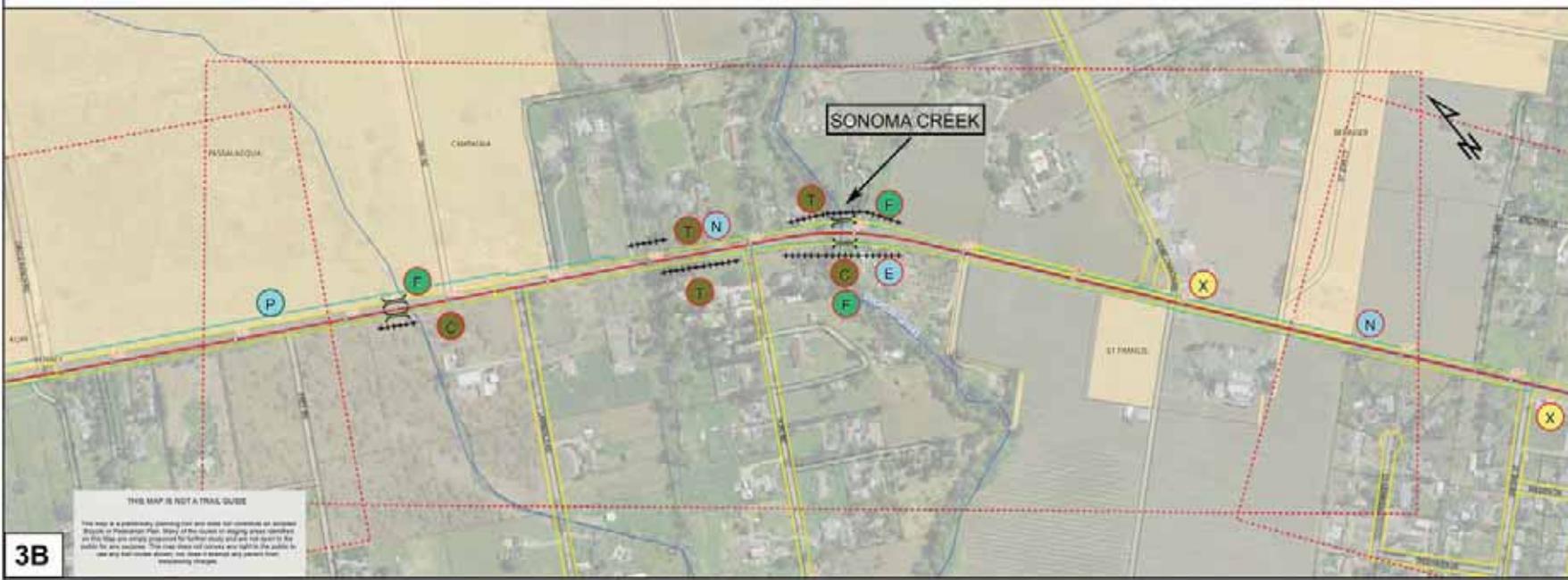
THIS MAP IS NOT A TRAIL GUIDE  
 This study is a preliminary planning tool and does not constitute an attempt to provide a trail guide. It is intended for informational purposes only and is not intended to be used as a trail guide. The map does not provide any liability for the public to use any information shown. The user is advised to consult with a professional mapping.



3A



- Legend**
- Traffic Signal
  - Whole Postmiles
  - Same Postmiles
  - Map Index
  - County Roads Right of Way
  - CalTrans Right of Way
  - Streets
  - Streams
  - Land Holdings > 10 acres
  - Parcels
  - +++++ Guadrail
  - Bridge



3B

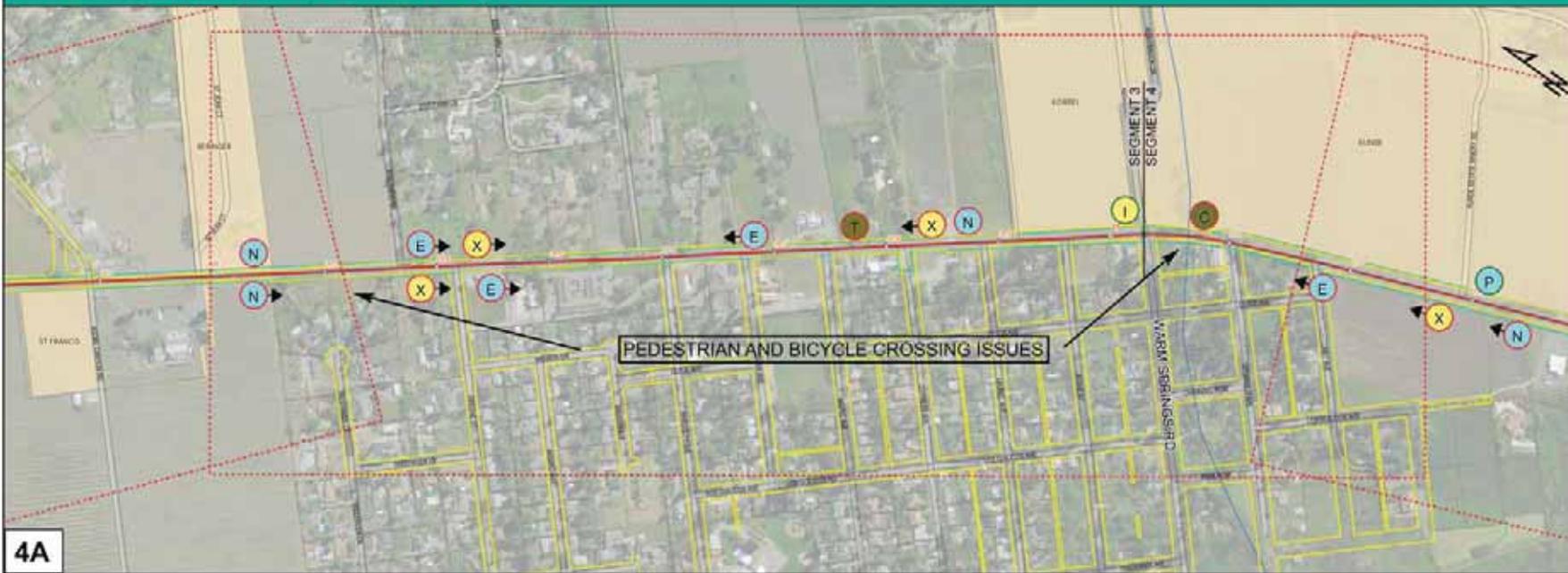
- Opportunities / Constraints**
- |                                  |                                |
|----------------------------------|--------------------------------|
| <b>Aesthetics</b>                | <b>Geology/Soils</b>           |
| O View/Overlook opportunity      | A Potential slope or erosion   |
| <b>Ag Resources</b>              | <b>Hydrology/Water Quality</b> |
| V Ag resources near road         | F Flood prone area             |
| <b>Biology</b>                   | <b>Land Use</b>                |
| W Sensitive bio/wildlife species | E Encroachment                 |
| M Wetland/Marsh                  | N Narrow public ROW            |
| C Creek crossing                 | P Wide public ROW              |
| T Oak trees                      | <b>Transportation/Traffic</b>  |
| <b>Cultural Resources</b>        | I Signalized intersection      |
| H Historic features (Bridges)    | X Congested area               |
|                                  | L Adjacent to public land      |



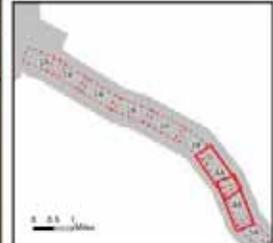
FIGURE : 6-4

**THIS MAP IS NOT A TRAIL GUIDE**  
 This map is a preliminary planning tool and does not constitute an approved design or construction plan. Any of the icons or styling areas identified on this map are simply proposed for further study and are not subject to the public for any reason. This map does not indicate any rights or claims to use any land under design, nor does it represent any parcel from any existing design.





4A

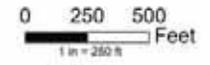


**Legend**

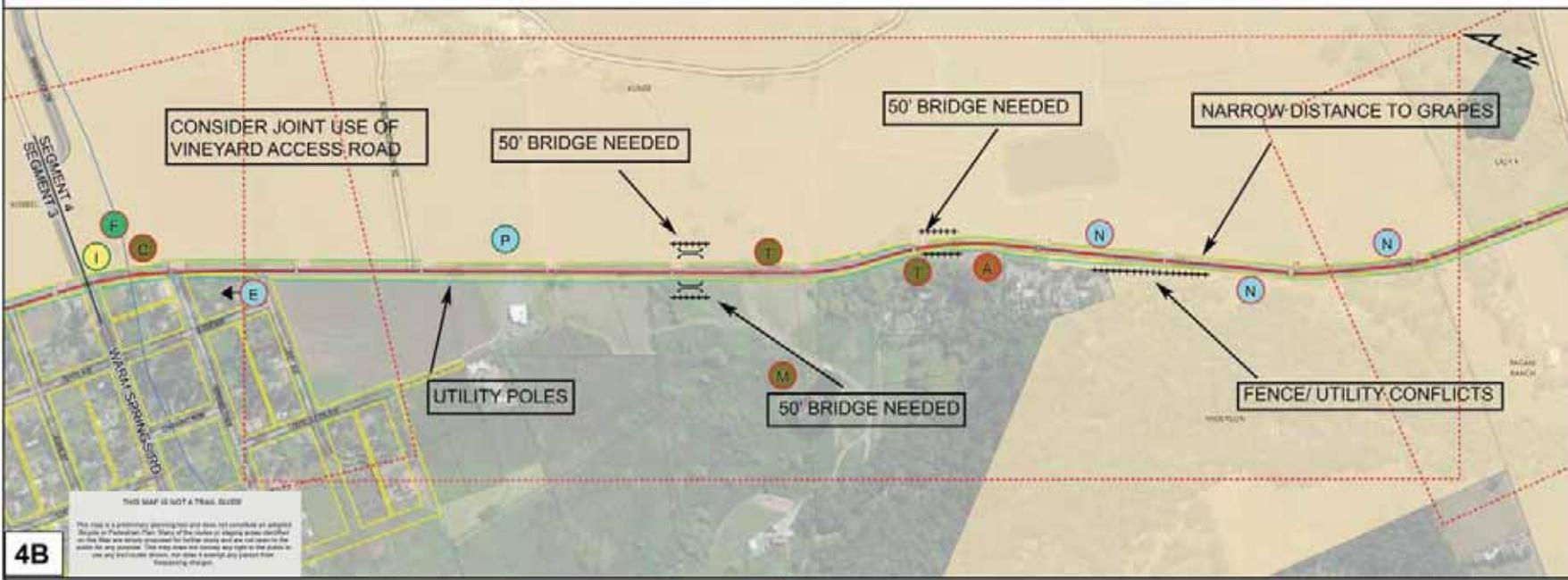
- Traffic Signal
- Whole Properties
- Tenth Properties
- Map Index
- County Roads Right of Way
- CalTrans Right of Way
- Streets
- Streams
- Land Holdings > 50 acres
- Parcels
- Guardrail
- Bridge

**Opportunities / Constraints**

- |                                  |                                |
|----------------------------------|--------------------------------|
| <b>Aesthetics</b>                | <b>Geology/Soils</b>           |
| ○ View/Overlook opportunity      | ○ Potential slope or erosion   |
| <b>Ag Resources</b>              | <b>Hydrology/Water Quality</b> |
| ○ Ag resources near road         | ○ Flood prone area             |
| <b>Biology</b>                   | <b>Land Use</b>                |
| ○ Sensitive bio/wildlife species | ○ Encroachment                 |
| ○ Wetland/Marsh                  | ○ Narrow public ROW            |
| ○ Creek crossing                 | ○ Wide public ROW              |
| ○ Oak trees                      | <b>Transportation/Traffic</b>  |
| <b>Cultural Resources</b>        | ○ Signalized intersection      |
| ○ Historic features (Bridges)    | ○ Compacted area               |
|                                  | ○ Adjacent to public land      |



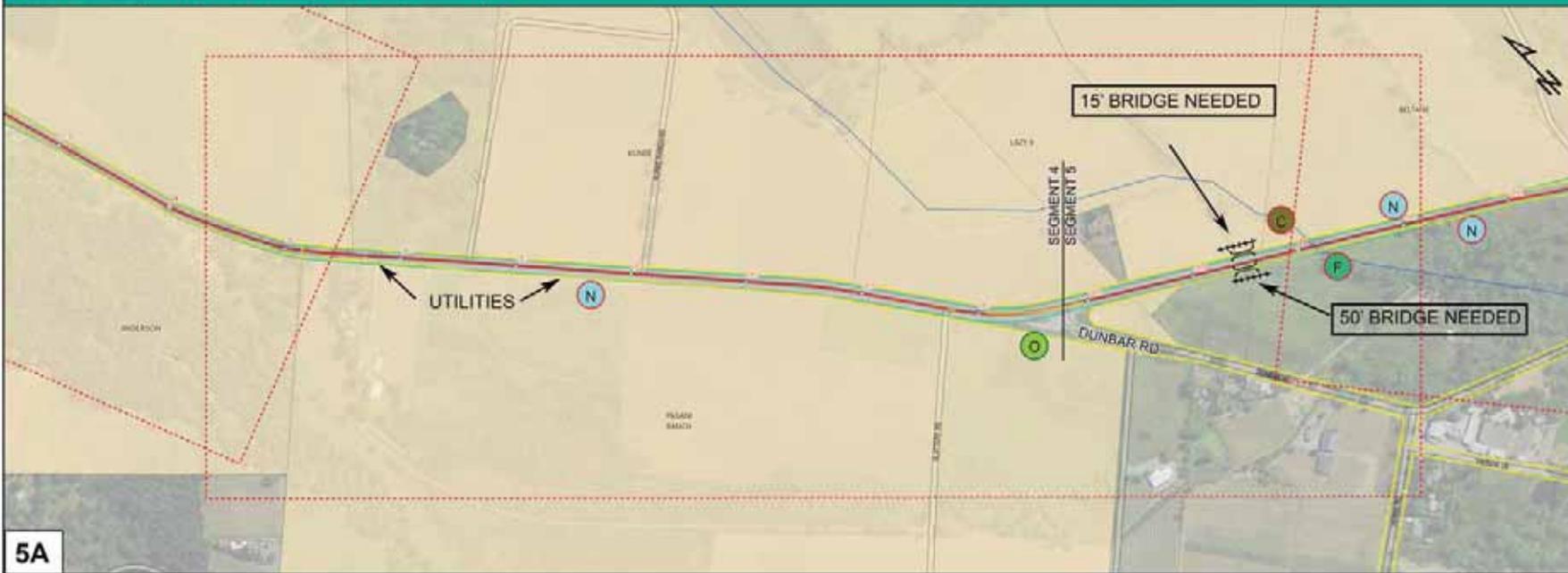
**FIGURE : 6-5**



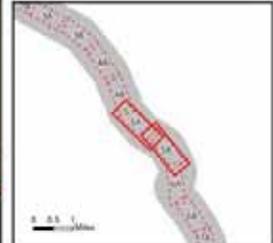
4B

**THIS MAP IS NOT A TRAIL BLUEPRINT**  
 This map is a preliminary planning tool and does not constitute an adopted design or construction plan. Many of the features or design areas identified on this map are shown conceptual for better understanding and are not shown to the public for any purpose. This map does not constitute any right to use public or private lands, nor does it exempt any person from obtaining permits.

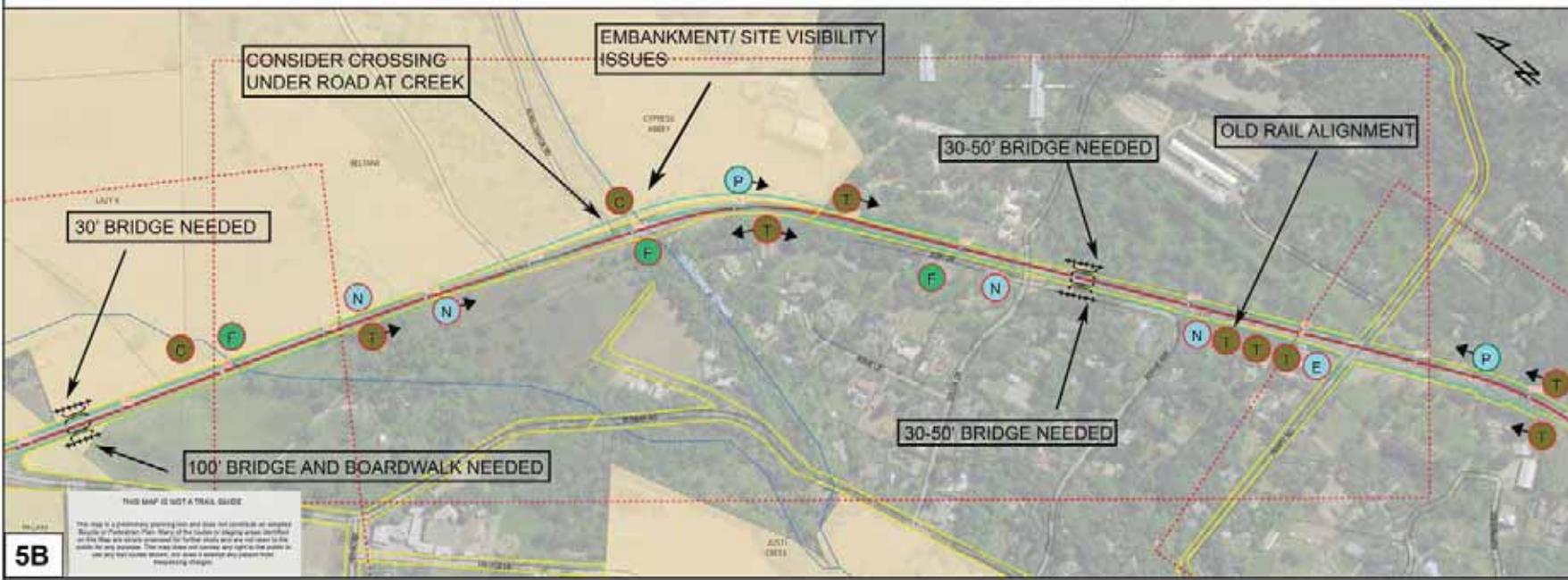




5A



- Legend**
- Traffic Signal
  - Whole Postmiles
  - Third Postmiles
  - ⋯ Map Index
  - ▭ County Roads Right of Way
  - ▭ CalTrans Right of Way
  - Streets
  - Streams
  - ▭ Land Holdings > 50 acres
  - ▭ Parcels
  - +++++ Guardrail
  - ⌒ Bridge



5B

- Opportunities / Constraints**
- |                                  |                                |
|----------------------------------|--------------------------------|
| <b>Aesthetics</b>                | <b>Geology/Soils</b>           |
| ○ View/Overlook opportunity      | ○ Potential slope or erosion   |
| <b>Ag Resources</b>              | <b>Hydrology/Water Quality</b> |
| ○ Ag resources near road         | ○ Flood prone area             |
| <b>Biology</b>                   | <b>Land Use</b>                |
| ○ Sensitive bio/wildlife species | ○ Encroachment                 |
| ○ Wetland/Marsh                  | ○ Narrow public ROW            |
| ○ Creek crossing                 | ○ Wide public ROW              |
| ○ Oak trees                      | ○ Signalized intersection      |
| <b>Cultural Resources</b>        | ○ Historic features (Bridges)  |
| ○ Historic features (Bridges)    | ○ Congested area               |
|                                  | ○ Adjacent to public land      |

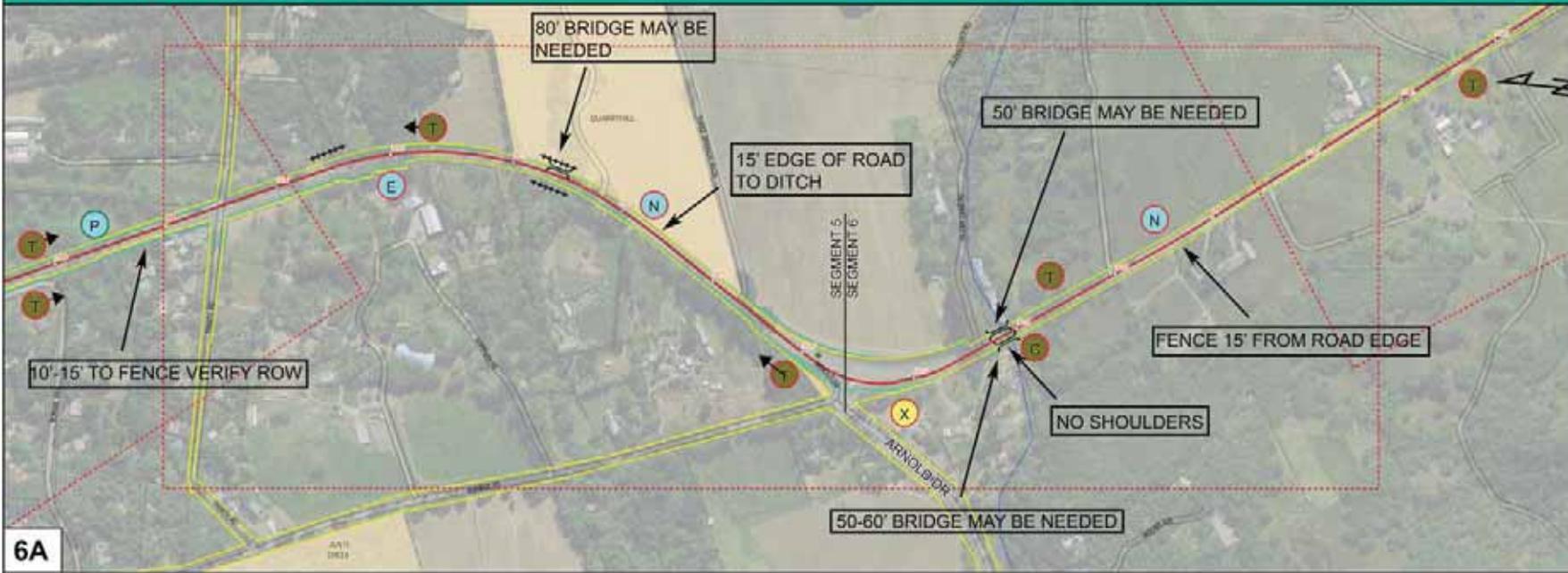
0 250 500 Feet  
1 in = 250 ft

FIGURE : 6-6



THIS MAP IS NOT A TRAIL GUIDE

This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the facilities or signage shown on this map are either conceptual or further study and are not open to the public for any purpose. This map does not constitute any right to the public or use any trail routes shown, nor does it exempt any person from respecting signage.

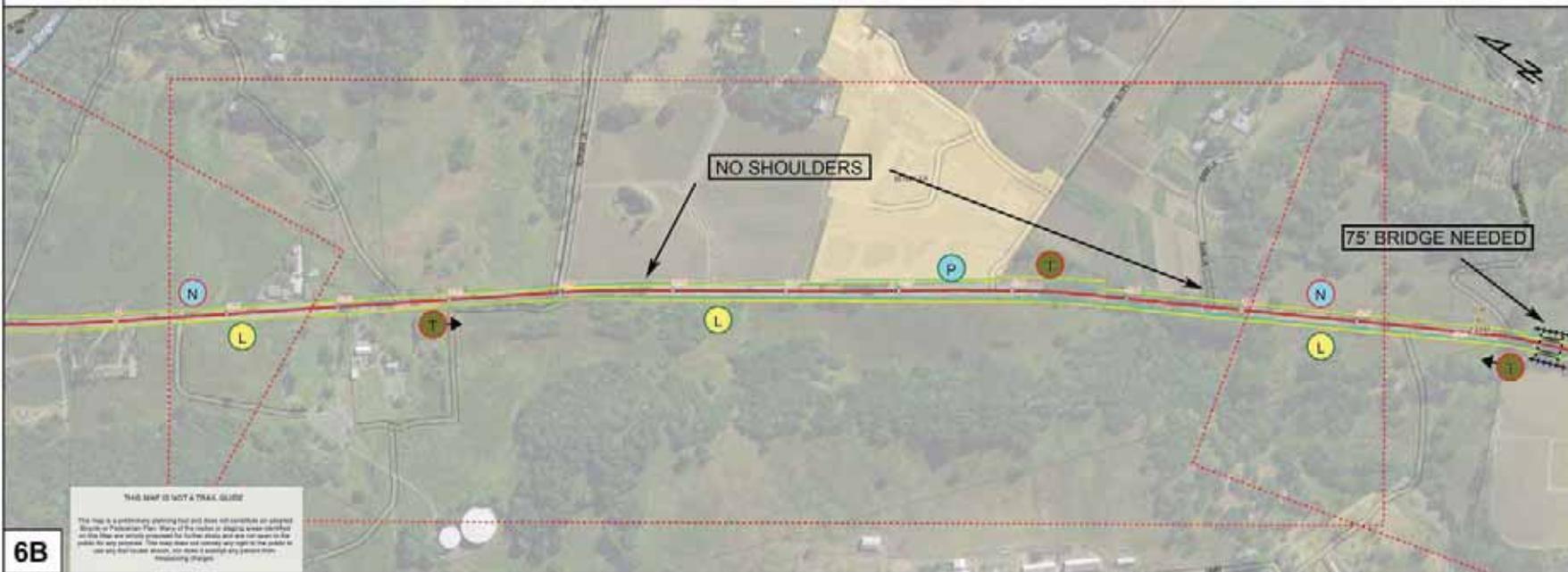


6A



**Legend**

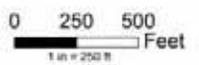
- Traffic Signal
- Whole Postmiles
- Teeth Postmiles
- Map Index
- County Roads Right of Way
- CalTrans Right of Way
- Streets
- Streams
- Land Holdings > 50 acres
- Parcels
- +++++ Guardrail
- Bridge



6B

**Opportunities / Constraints**

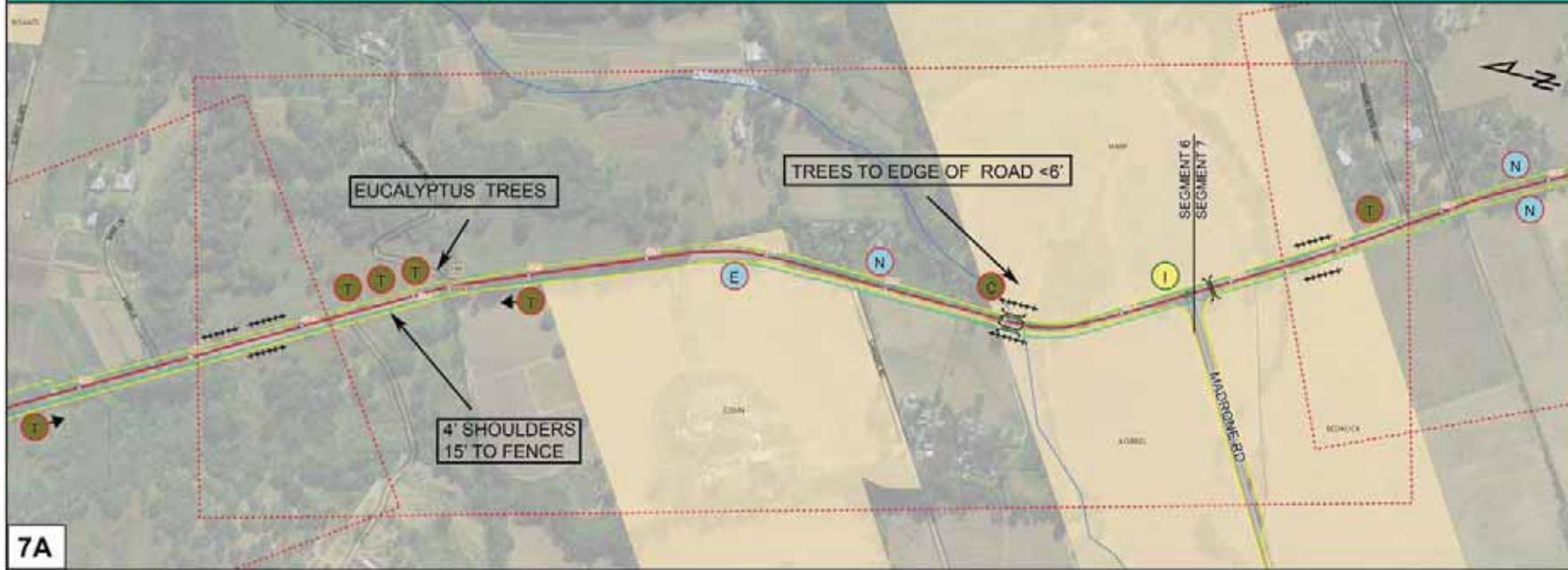
- |   |                                     |
|---|-------------------------------------|
| <b>Aesthetics</b>                       | <b>Geology/Soils</b>                |
| <b>O</b> View/Overlook opportunity      | <b>A</b> Potential slope or erosion |
| <b>Ag Resources</b>                     | <b>Hydrology/Water Quality</b>      |
| <b>V</b> Ag resources near road         | <b>F</b> Flood prone area           |
| <b>Biology</b>                          | <b>Land Use</b>                     |
| <b>W</b> Sensitive bio/wildlife species | <b>E</b> Encroachment               |
| <b>M</b> Wetland/Marsh                  | <b>N</b> Narrow public ROW          |
| <b>C</b> Creek crossing                 | <b>P</b> Wide public ROW            |
| <b>T</b> Oak trees                      | <b>Transportation/Traffic</b>       |
| <b>Cultural Resources</b>               | <b>I</b> Signalized intersection    |
| <b>H</b> Historic features (Bridges)    | <b>X</b> Congested area             |
|   | <b>L</b> Adjacent to public land    |



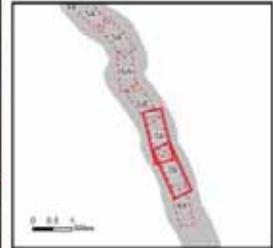
**FIGURE : 6-7**

**THIS MAP IS NOT A TRAIL GUIDE**  
 This map is a preliminary planning tool and does not constitute an adopted Sonoma Valley Trail. Portions of the center or dashed lines identified on this map are merely proposed for further study and are not open to the public for any purpose. This map does not constitute any approval, the creation of, or any other public action, nor does it purport to provide any guarantee, warranty, or assurance of any kind.





7A



**Legend**

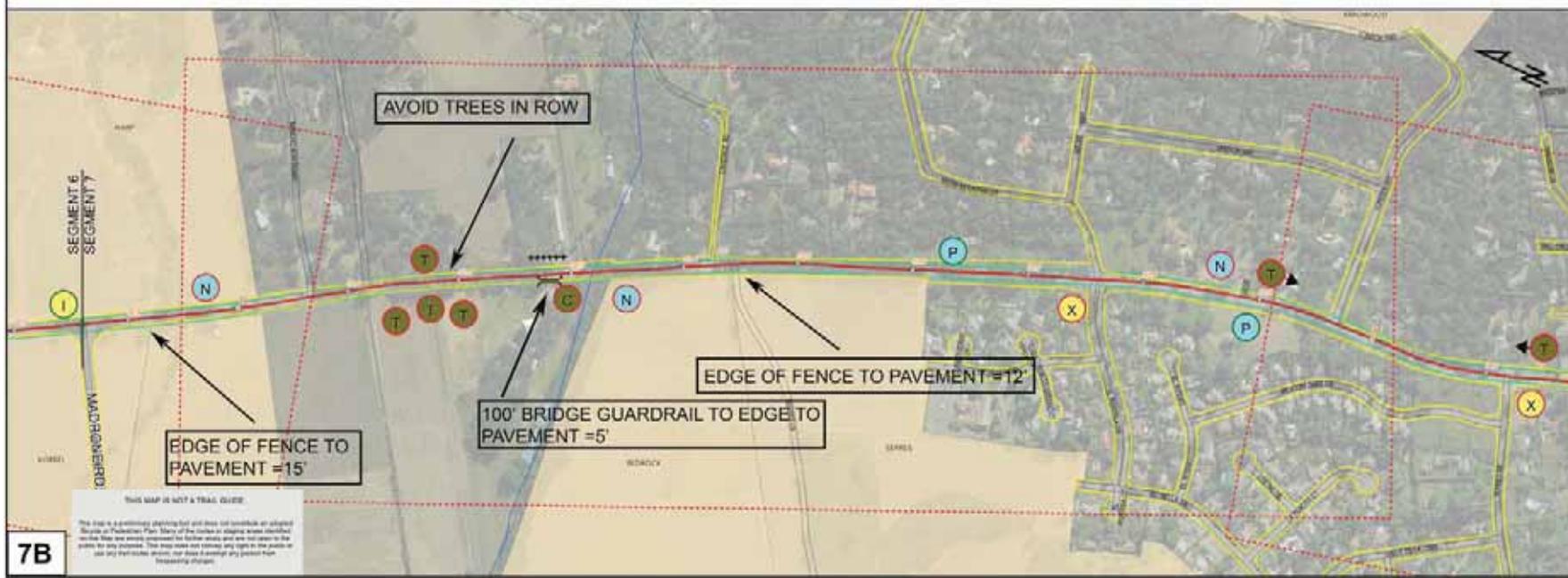
- Traffic Signal
- Whole Postmiles
- Teeth Postmiles
- Map Index
- County Roads Right of Way
- CalTrans Right of Way
- Streets
- Streams
- Land Holdings > 50 acres
- Parcels
- +++++ Guardrail
- Bridge

**Opportunities / Constraints**

- |   |                                     |
|---|-------------------------------------|
| <b>Aesthetics</b>                       | <b>Geology/Soils</b>                |
| <b>O</b> View/Overlook opportunity      | <b>A</b> Potential slope or erosion |
| <b>Ag Resources</b>                     | <b>Hydrology/Water Quality</b>      |
| <b>V</b> Ag resources near road         | <b>F</b> Flood prone area           |
| <b>Biology</b>                          | <b>Land Use</b>                     |
| <b>W</b> Sensitive bio/wildlife species | <b>E</b> Encroachment               |
| <b>M</b> Wetland/Marsh                  | <b>N</b> Narrow public ROW          |
| <b>C</b> Creek crossing                 | <b>P</b> Wide public ROW            |
| <b>T</b> Oak trees                      | <b>Transportation/Traffic</b>       |
| <b>Cultural Resources</b>               | <b>I</b> Signalized intersection    |
| <b>H</b> Historic features (Bridges)    | <b>X</b> Compressed area            |
|   | <b>L</b> Adjacent to public land    |



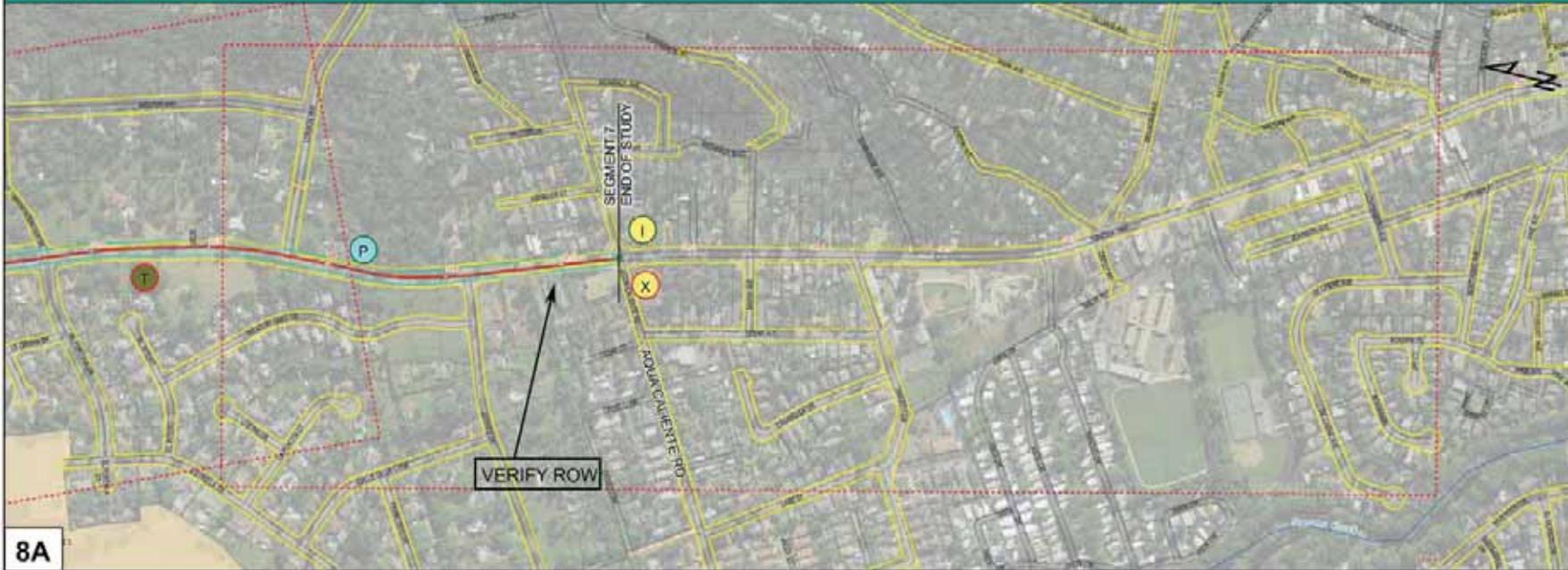
**FIGURE : 6-8**



7B

THIS MAP IS NOT A TRAIL GUIDE  
 This map is a preliminary planning tool and does not constitute an official Feasibility or Production Plan. Many of the features or signage shown are not yet in place and are subject to change. This map is for informational purposes only and is not intended to be used as a trail guide. It is not intended to be used as a trail guide. It is not intended to be used as a trail guide.





**Legend**

- Traffic Signal
- Whole Postmiles
- Tenth Postmiles
- Map Index
- County Roads Right of Way
- CalTrans Right of Way
- Streets
- Streams
- Land Holdings > 50 acres
- Parcels

8A

**Opportunities / Constraints**

- |   |                                     |
|---|-------------------------------------|
| <b>Aesthetics</b>                       | <b>Geology/Soils</b>                |
| <b>O</b> View/Overlook opportunity      | <b>A</b> Potential slope or erosion |
| <b>Ag Resources</b>                     | <b>Hydrology/Water Quality</b>      |
| <b>V</b> Ag resources near road         | <b>F</b> Flood prone area           |
| <b>Biology</b>                          | <b>Land Use</b>                     |
| <b>W</b> Sensitive bio/wildlife species | <b>E</b> Encroachment               |
| <b>M</b> Wetland/Marsh                  | <b>N</b> Narrow public ROW          |
| <b>C</b> Creek crossing                 | <b>P</b> Wide public ROW            |
| <b>T</b> Oak trees                      | <b>Transportation/Traffic</b>       |
| <b>Cultural Resources</b>               | <b>I</b> Signalized intersection    |
| <b>H</b> Historic features (Bridges)    | <b>X</b> Compsted area              |
|   | <b>L</b> Adjacent to public land    |



**FIGURE : 6-9**

THIS MAP IS NOT A TRAIL GUIDE

This map is a preliminary planning tool and does not constitute an official map or representation that either on the ground or mapping services provided on this map are being provided for future study and are not subject to the public for any purpose. This map does not create any right in the public to use any trail routes shown, nor does it represent any current or future changes.





Table 6-2 Environmental, Social and Economic Constraints and Opportunities

Segment/ Alignment Alternative	Planning Consistency			Environmental Constraints and Opportunities							Social and Economic Issues			TOTAL (score)*	
	Maximum access for a variety of users, including pedestrians, bicyclists and equestrians	Connections to existing and planned local trails	User Experience (noise, safety)	Aesthetics/Visual Resources	Agricultural/Forestry Resources	Biological Resources	Geology, Soils	Hydrology and Water Quality	Land Use (easement or ROW needed)	Transportation/Traffic	Accessibility/ Topography	Health and transit connections for underserved communities	Engineering Complexity/Cost	Compatibility with adjacent uses and community input	*Preferred Alignment based on points
1W	5	6	5	5	5	4	4	5	6	6	5	5	5	5	71
2E	5	6	5	4	5	5	5	5	5	4	5	4	5	4	67
2W	3	5	2	4	6	3	5	4	2	3	5	4	3	1	50
3E	4	5	4	5	4	5	5	4	4	3	5	3	5	3	59
3W	5	5	4	5	4	5	5	4	3	3	5	4	4	3	59
4E	4	5	4	5	4	4	4	4	4	4	5	3	5	5	60
4W	4	5	4	5	4	2	3	2	4	4	4	4	4	5	54
5E	3	6	4	5	4	4	5	4	4	4	4	3	4	4	58
5W	3	5	4	5	4	4	5	4	3	4	4	3	4	3	55
6E	4	6	5	5	5	4	5	4	4	4	4	3	4	4	62
6W	6	6	6	6	4	5	4	5	5	5	4	4	5	5	70
7E	4	5	4	5	5	4	3	5	3	4	4	6	3	4	59
7W	5	6	5	5	4	5	5	4	5	5	5	6	4	4	69

Key: Opportunity or minima issue = 5-6 points  
 Moderate Constraint or issue = 3-4 points  
 Severe Constraint = 1-2 points



The least constrained segments are those listed in **Table 6-3**. These trail segments have the fewest environmental issues, have generally adequate right of way or possess other characteristics that may facilitate trail implementation. Identification of least constrained segments may be useful when determining funding and implementation priorities and is discussed further in **Section 9**.

<b>Segment</b>	<b>Ranking</b>	<b>Points</b>
1W	2	71
6W	1	70
7W	4	69
2E	2	67
4E	6	60
3E	8	59
3W	9	59



## 7 DRAFT TRAIL CONCEPTS

### 7.1 Preferred Alignment

One primary goal of the Sonoma Valley Trail is an implementable, connected route between the Springs and Santa Rosa. Timely implementation of a complete and connected trail within Sonoma Valley will depend on landowner consent (including public agencies such as Caltrans and Sonoma County Water Agency), funding availability, and public support for the trail.

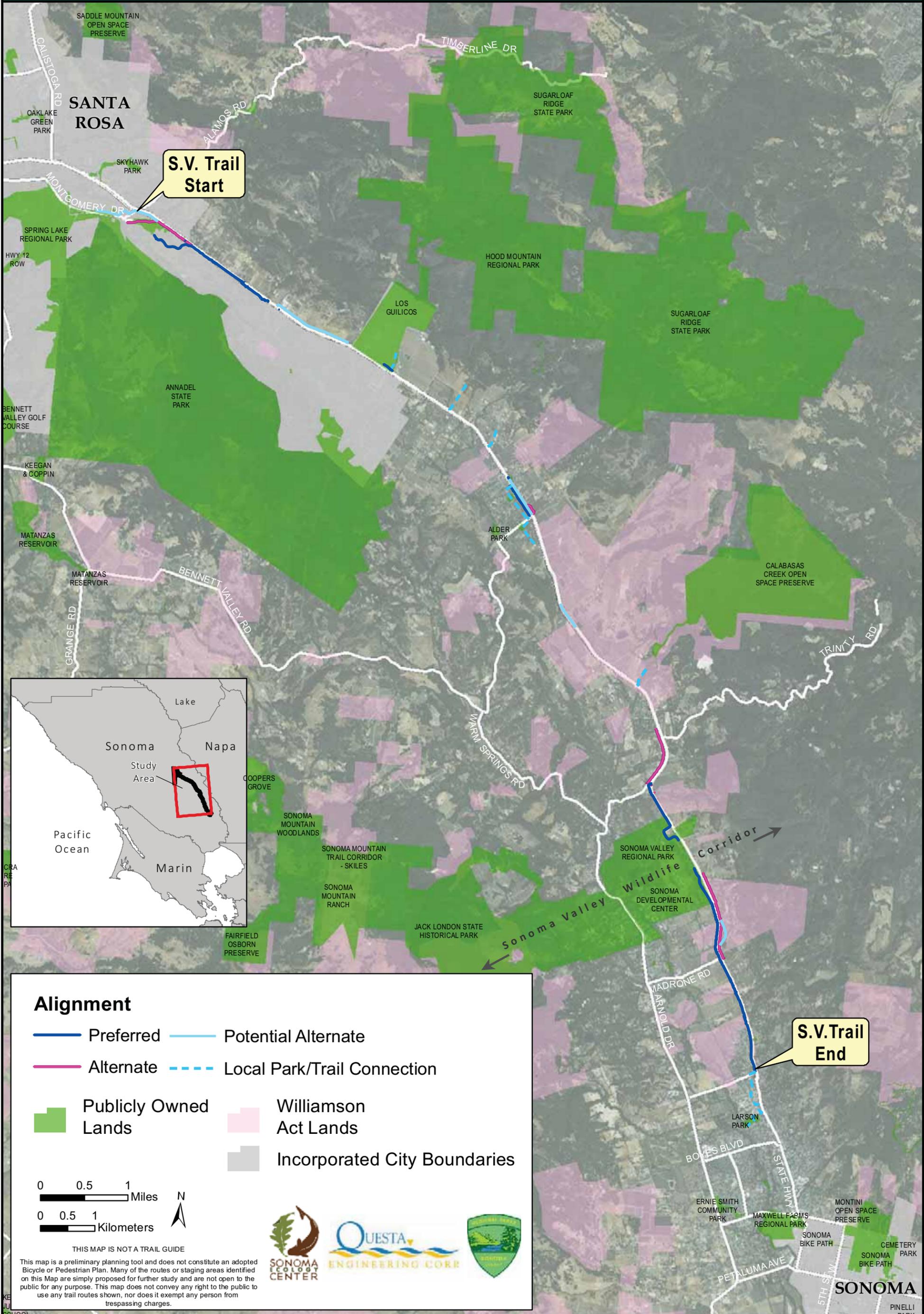


In some areas, agreement with adjacent landowners may be needed to avoid constrained areas. In some areas, the trail implementation can be required as part of project development, especially where the project includes visitor-serving facilities.

To address the potential for significant gaps in trail implementation due to landowner coordination, project development or environmental constraint, a preferred alignment as well as an alternate route is recommended. In some cases, such as in Kenwood village, improvements may be needed on both sides of the highway to facilitate bicyclists and pedestrians.

Detailed analysis during subsequent design and environmental review process will further refine the preferred alignment to ensure trail connectivity. Implementation as part of individual development projects will also help ensure meeting this goal. **Figures 7-1** through **7-9** provide a detailed vision of the Trail.

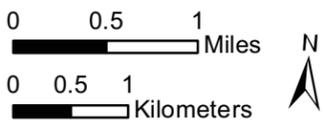
# Sonoma Valley Trail Feasibility Study



## Alignment

- Preferred
- Potential Alternate
- Alternate
- - - Local Park/Trail Connection

- Publicly Owned Lands
- Williamson Act Lands
- Incorporated City Boundaries



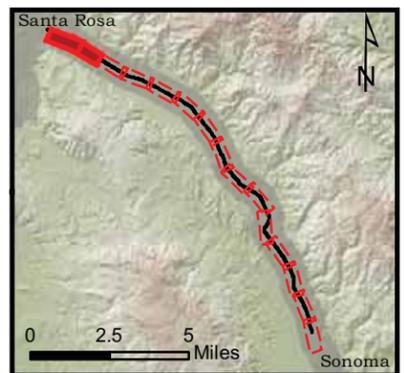
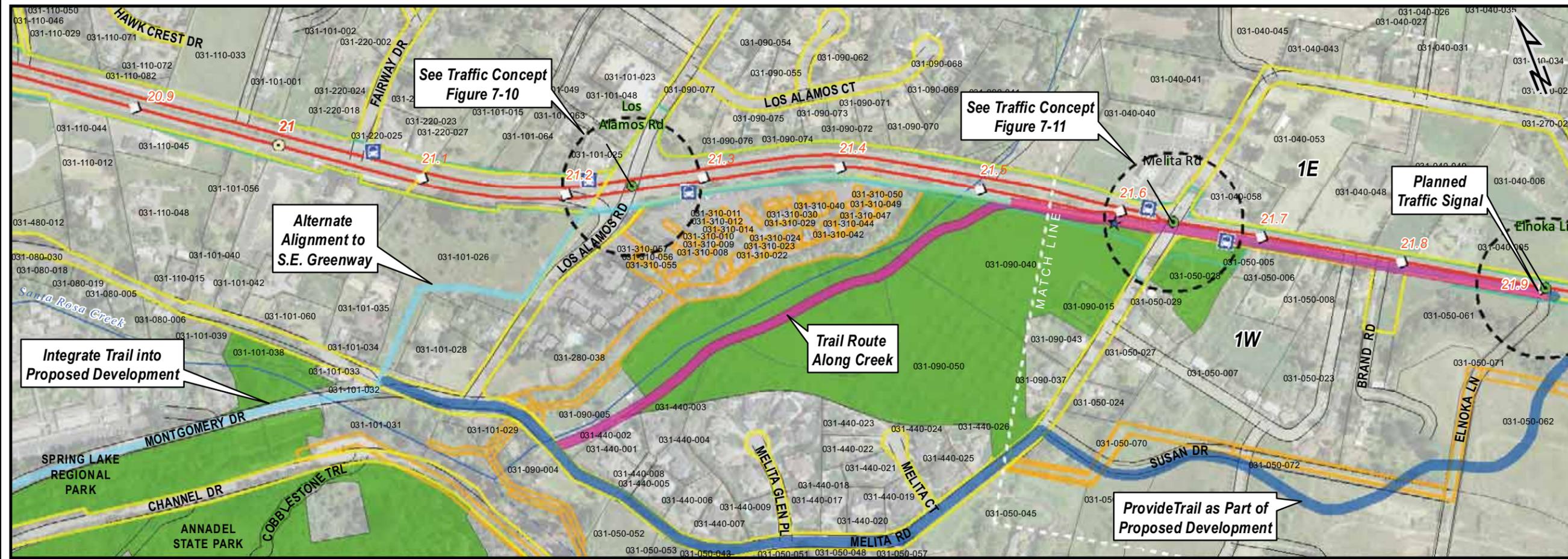
THIS MAP IS NOT A TRAIL GUIDE

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## 7-1 Preferred Trail Alignment (Overview)

# Sonoma Valley Trail Feasibility Study



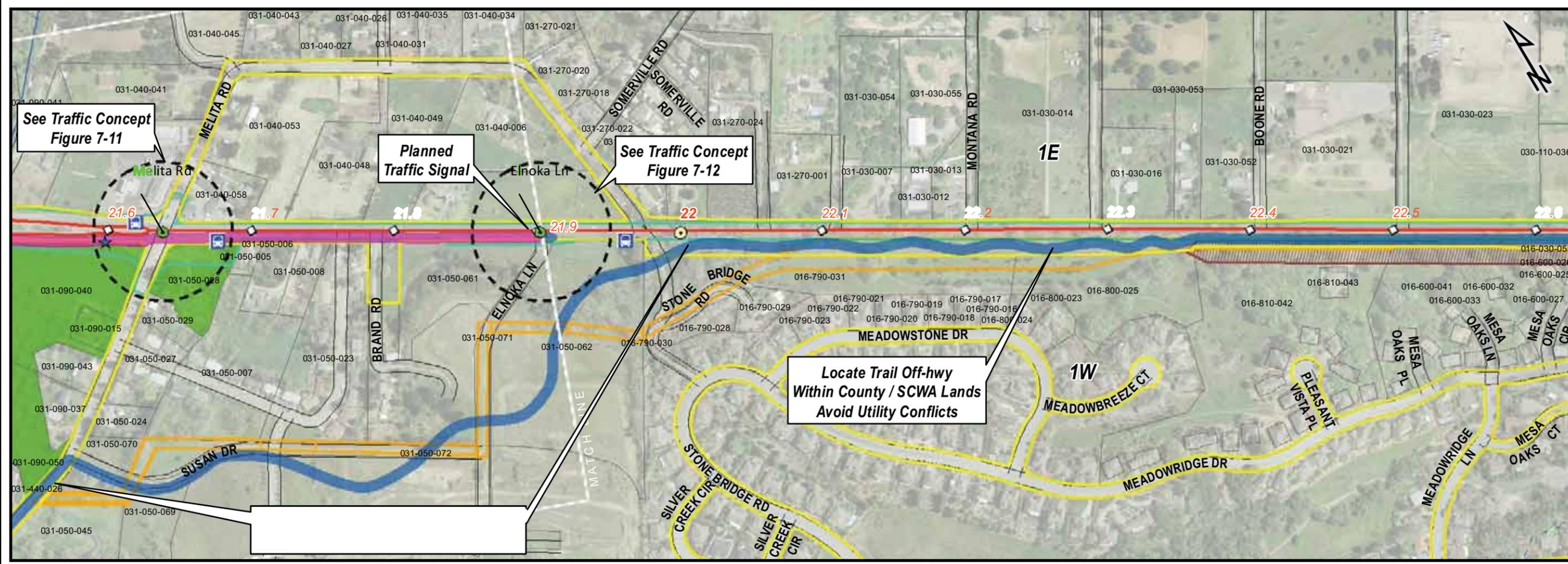
- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - ≡ Bridge
  - ★ Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential Alternate
    - Local Park / Trail Connection
  - Intersection
  - Match Line
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft    Map Date: 01/05/2016

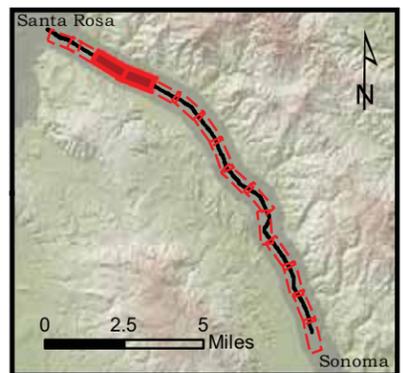
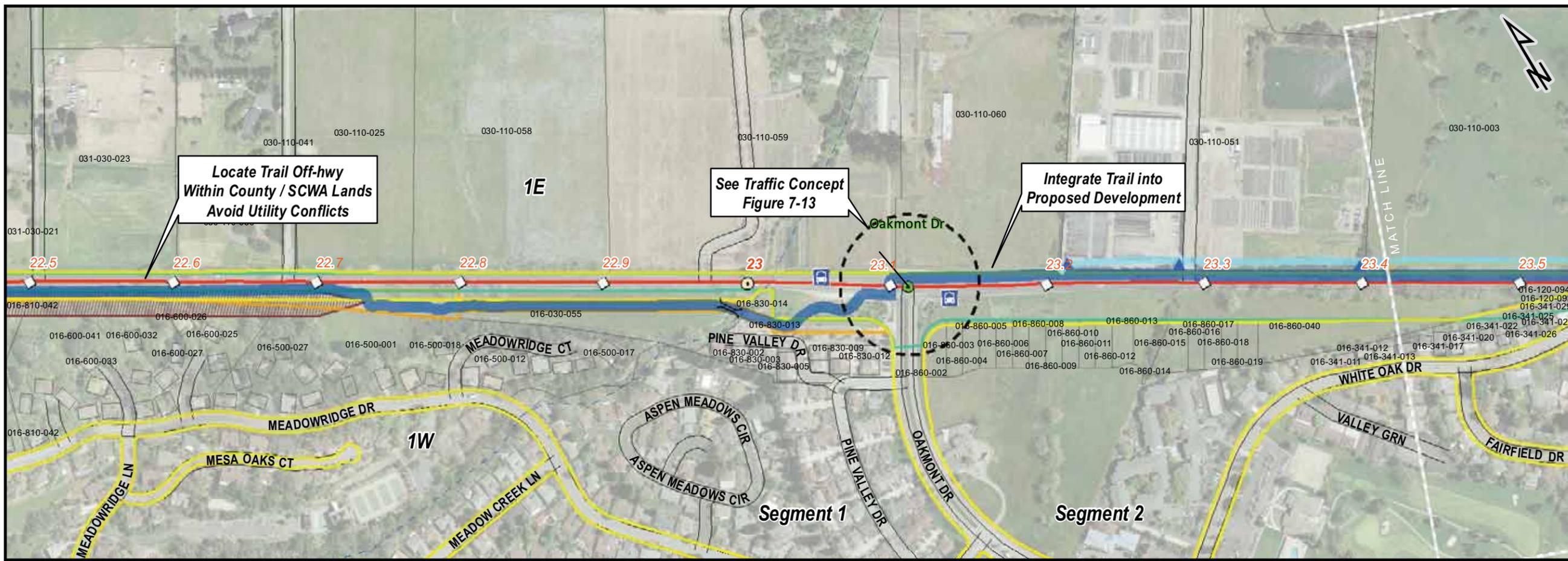
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## 7-2 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study

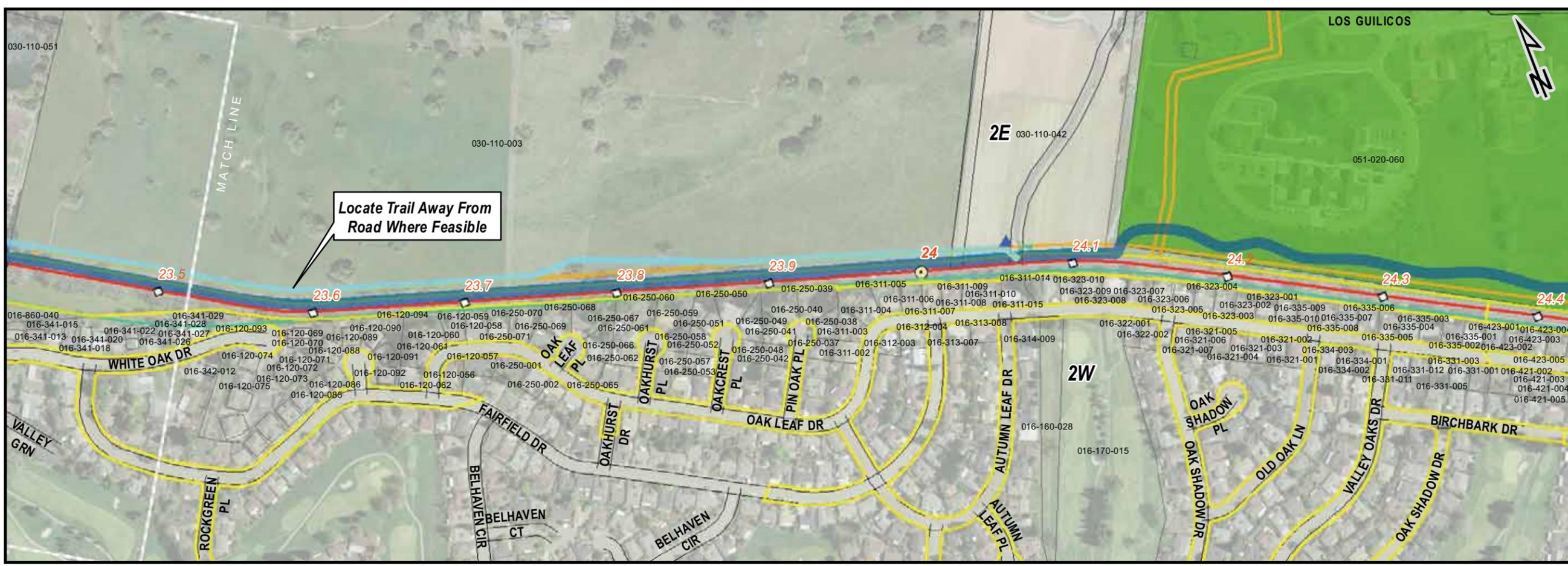


- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - ≡ Bridge
  - ★ Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
  - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft    Map Date: 01/05/2015

**THIS MAP IS NOT A TRAIL GUIDE**

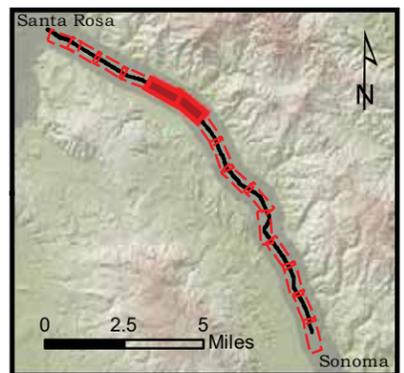
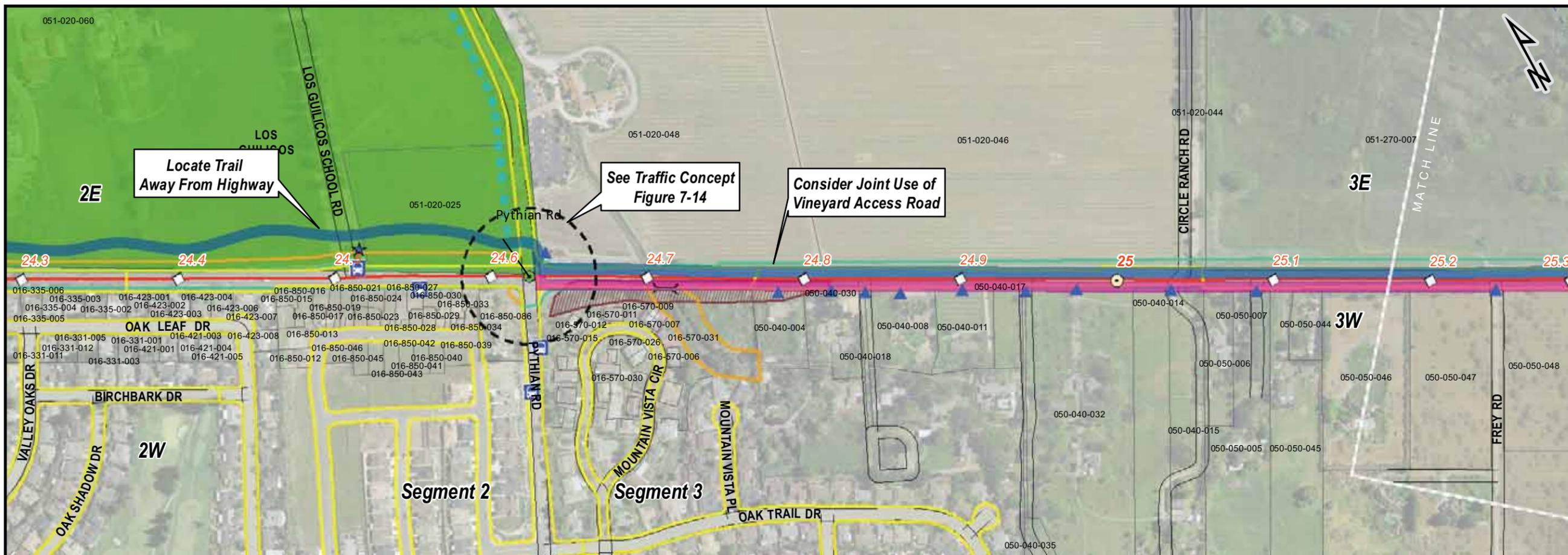
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## 7-3 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study



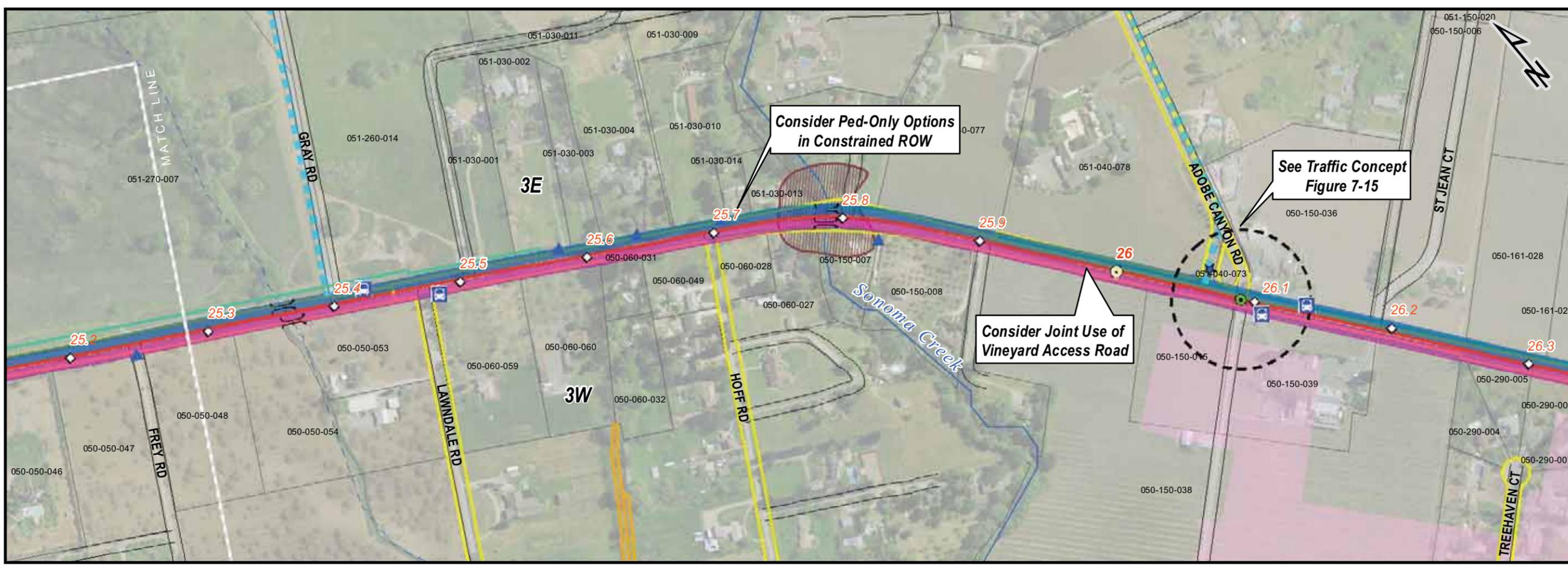
- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - Bridge
  - Trail Amenities
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential Alternate
    - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

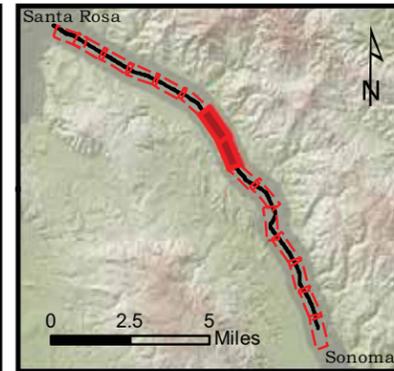
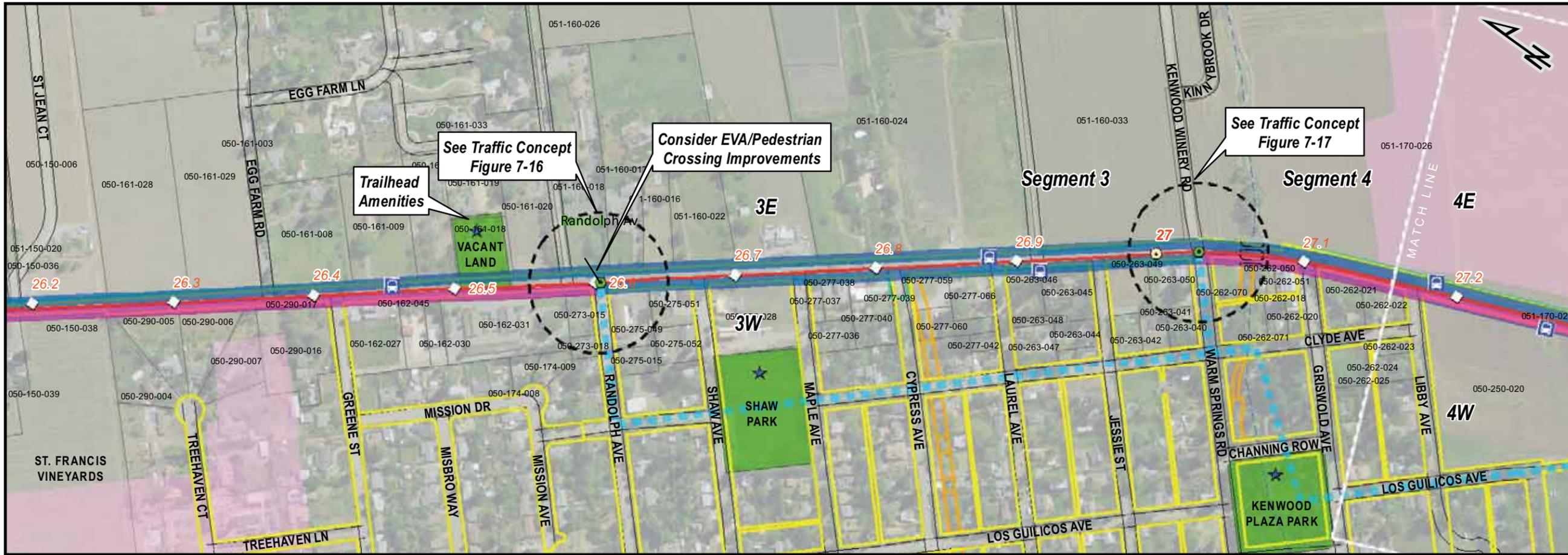
1 in = 400 ft Map Date: 01/05/2015

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## 7-4 PREFERRED ALIGNMENT





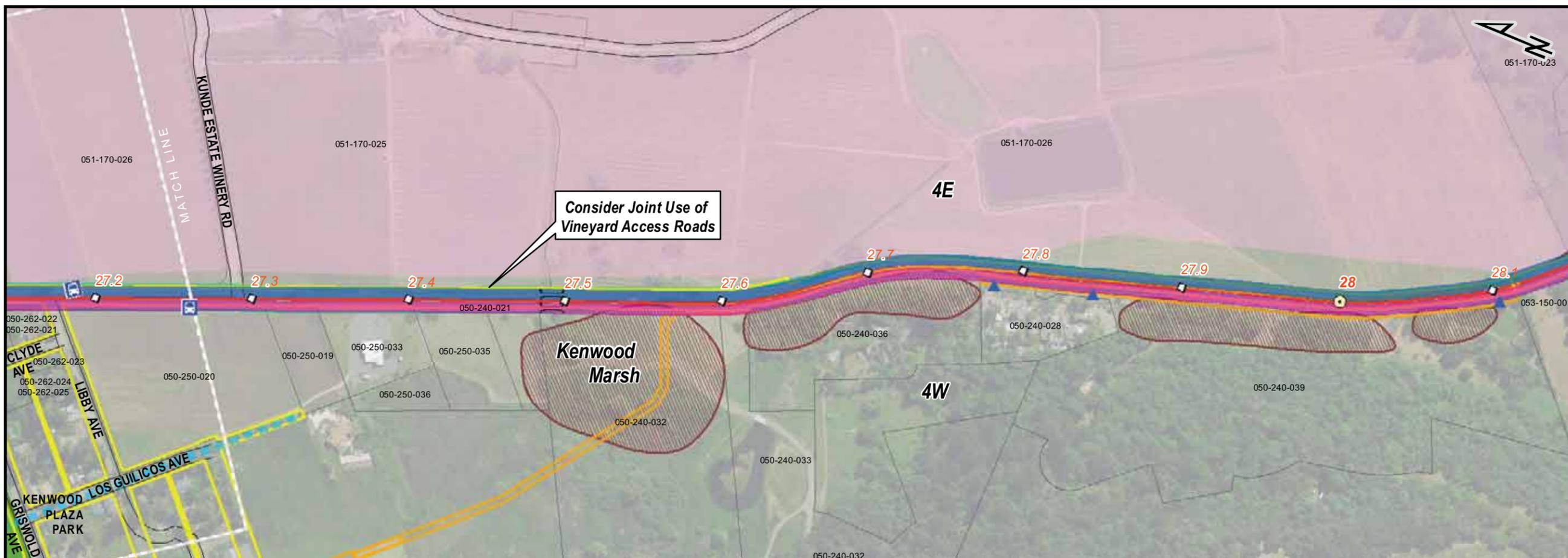
- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - ⌒ Bridge
  - ★ Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
    - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement
  - Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft    Map Date: 01/05/2016

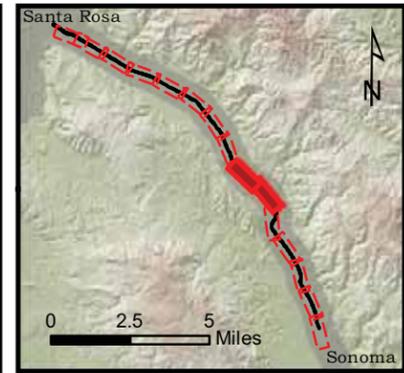
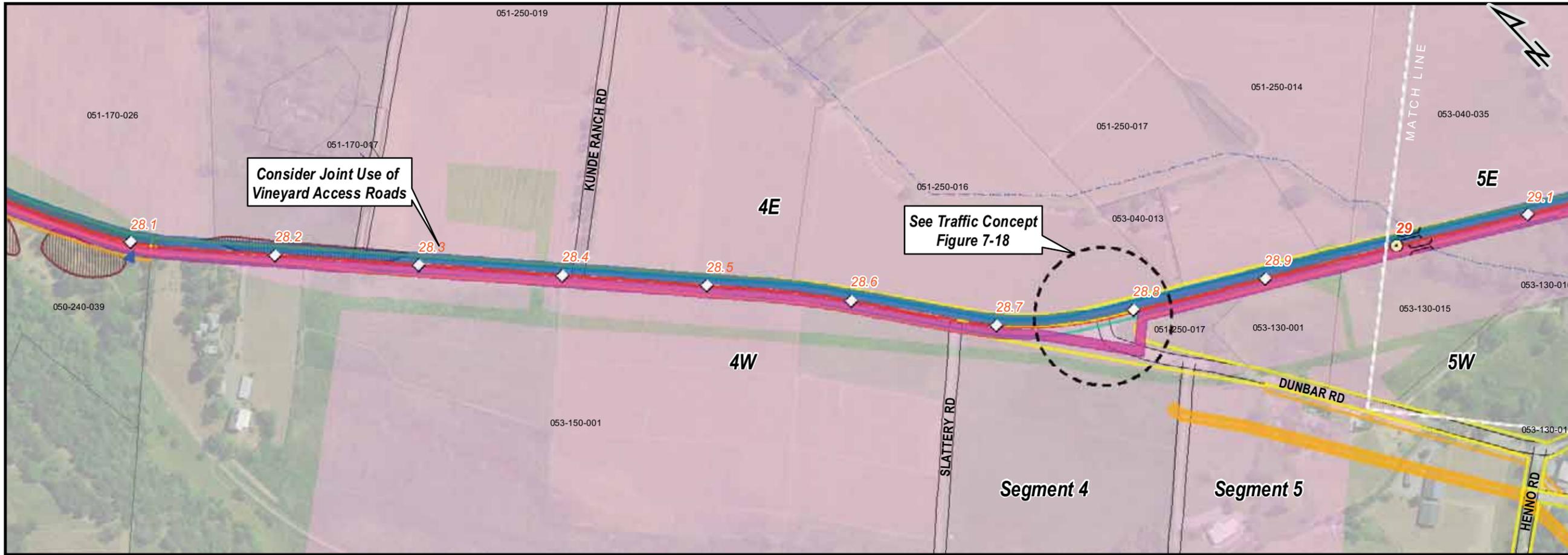
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## 7-5 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study



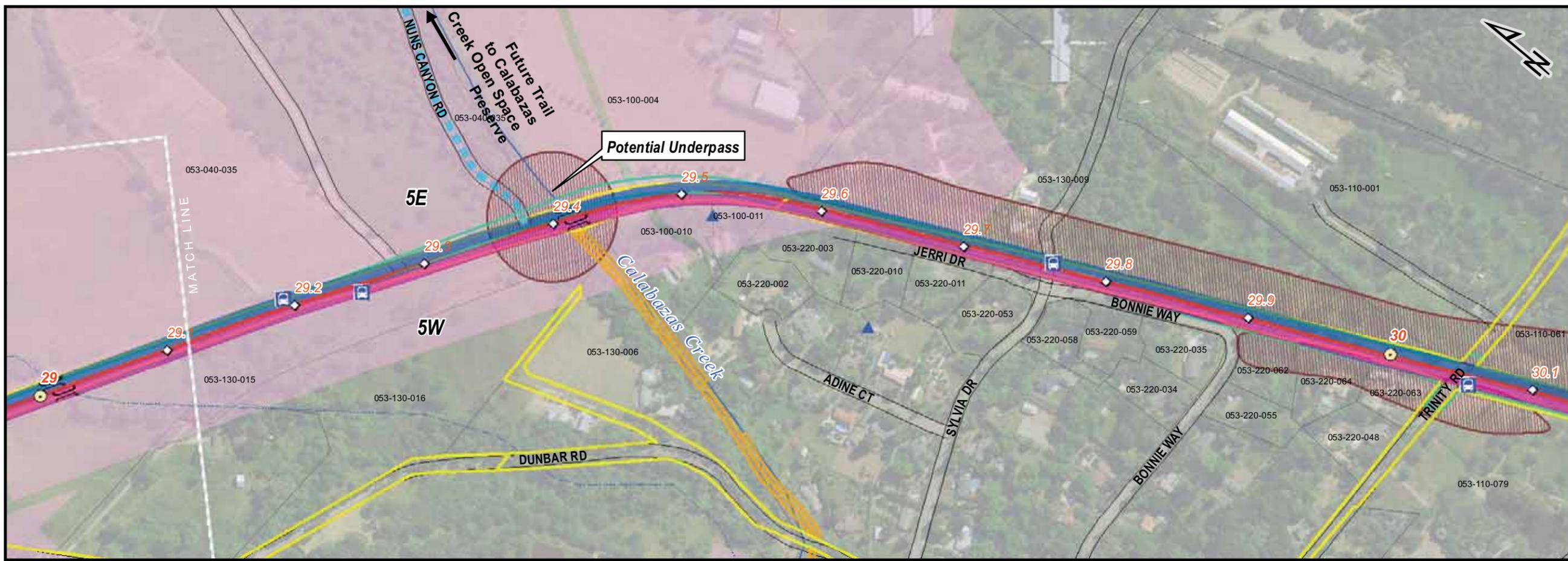
- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - ⌒ Bridge
  - ★ Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
    - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft Map Date: 01/05/2016

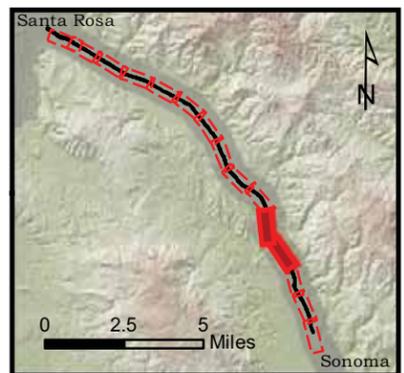
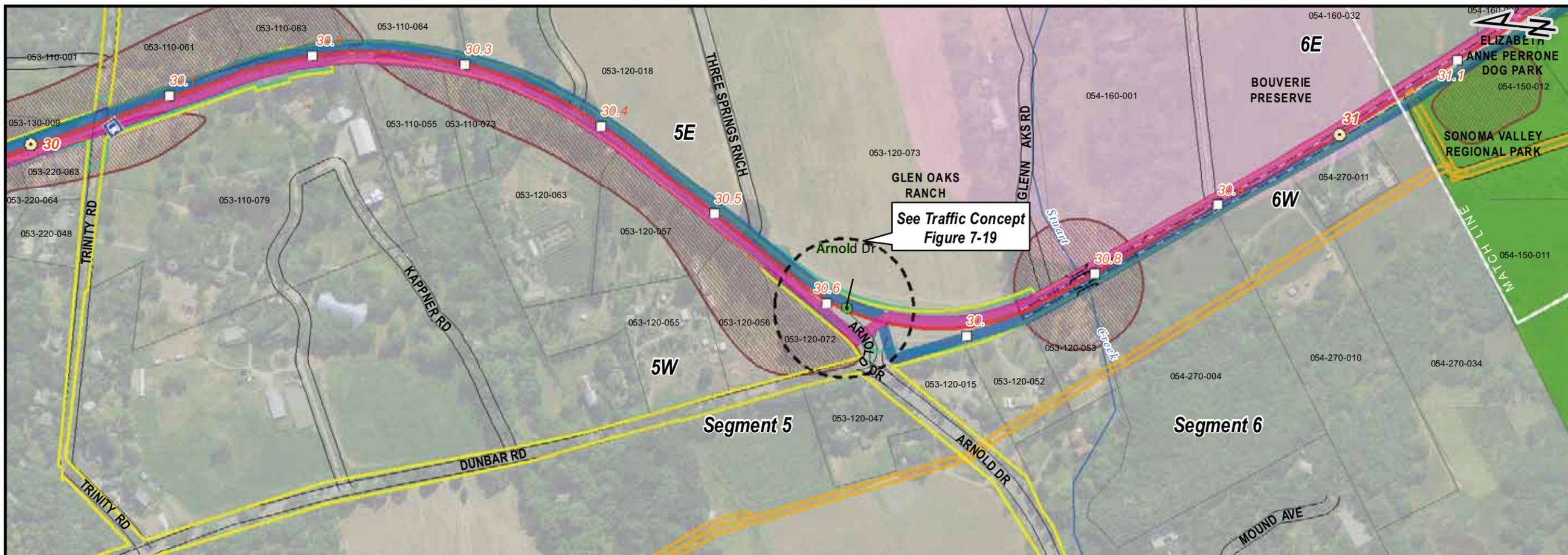
**THIS MAP IS NOT A TRAIL GUIDE**  
 This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.



## 7-6 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study



- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - Bridge
  - Trail Amenities
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
    - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft      Map Date: 01/05/2015

**THIS MAP IS NOT A TRAIL GUIDE**

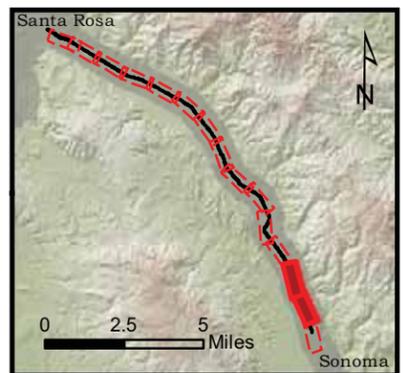
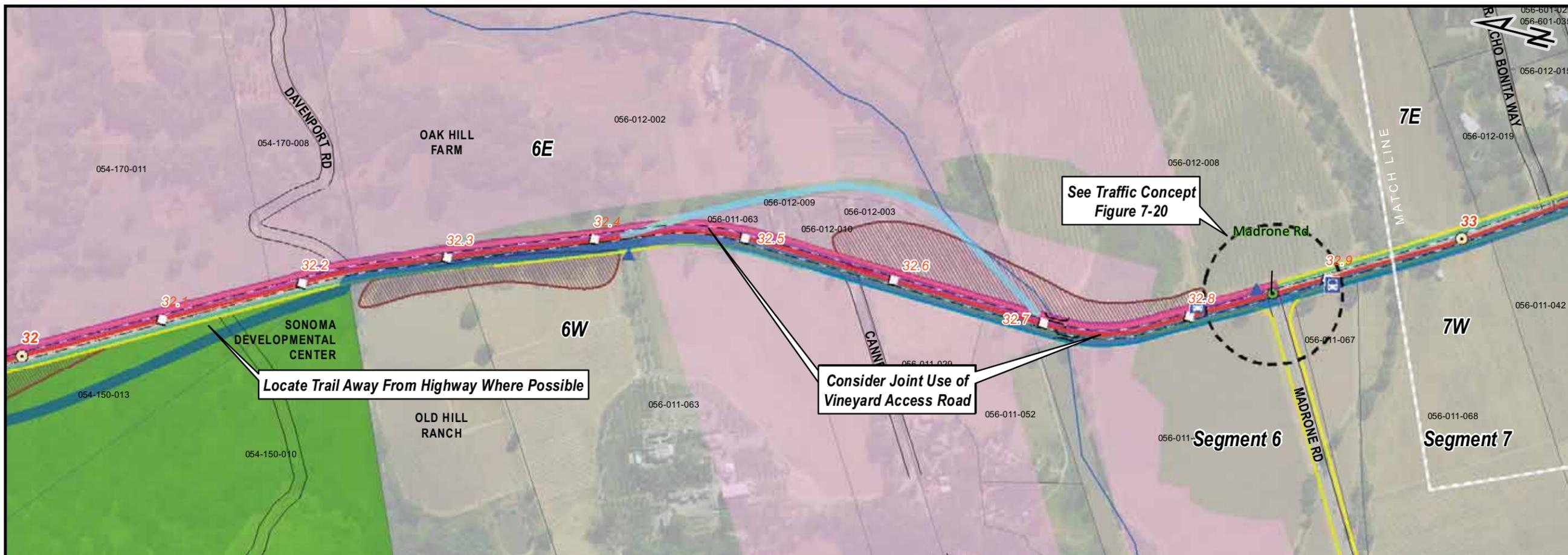
This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.



## 7-7 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study



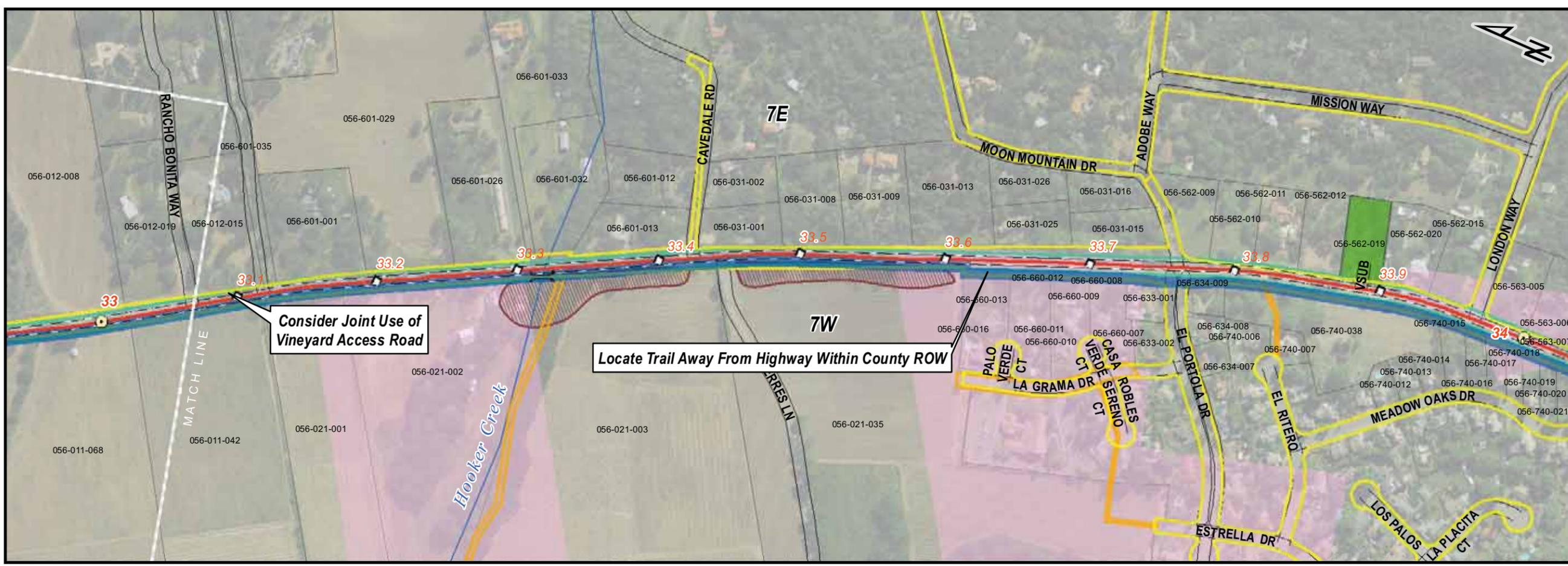
- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - Bridge
  - Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
  - Local Park / Trail Connection
  - Intersection
  - Map Index
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement
  - Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

1 in = 400 ft Map Date: 01/05/2016

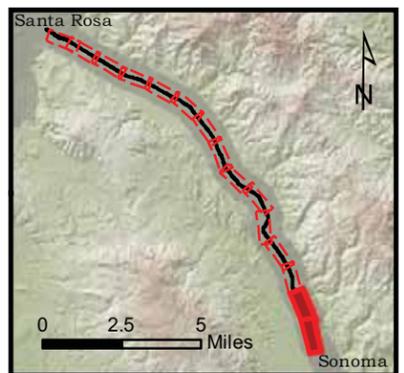
**THIS MAP IS NOT A TRAIL GUIDE**  
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## 7-8 PREFERRED ALIGNMENT



# Sonoma Valley Trail Feasibility Study



- Legend**
- Whole Postmiles
  - Tenth Postmiles
  - ⌒ Bridge
  - ★ Trail Amenities
  - Trail Alignment
    - Preferred
    - Alternate
    - Potential
    - Alternate
    - Local Park / Trail Connection
  - Intersection
  - Parcels
  - SCWA Easement
  - Publicly Owned Lands
  - Infrastructure Conflict
  - Traffic Signal
  - Bus Stops
  - Pavement Edge (15 ft)
  - Highway 12
  - Streets
  - Named Creek
  - Intermittent Creek
  - County Roads Right of Way
  - CalTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands

Future Trail Connection ■■■■ Class I ■■■■ Class II ■■■■ Class III

1 in = 400 ft Map Date: 01/05/2015

**THIS MAP IS NOT A TRAIL GUIDE**

This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.



## 7-9 PREFERRED ALIGNMENT





## 7.2 Highway 12/ Trail Crossings

This section presents a discussion on design issues and options at potential Sonoma Valley Trail intersection crossings. **Figures 7-10** through **7-21** illustrate the conceptual design of the preferred alignment, and outline in dashed lines the general alignment of the alternative alignment.

In general, trail crossings across Highway 12 should be designed to minimize the number of conflicts with oncoming traffic. Where highway crossings may be needed, the optimal location will occur at existing traffic signals. A warning beacon is proposed to facilitate a trail crossing in one location in Kenwood where an existing traffic signal does not exist.

Trail crossings at stop-controlled, minor streets (i.e., roadways other than Highway 12), are shown with high-visibility crosswalks markings. Crossing control measures, like warning beacons and traffic signals, are not recommended because the minor-street traffic are already controlled by STOP sign, and yield to through traffic.

### ***Sonoma Highway at Los Alamos Road (Figure 7-10)***

The intersection crossing shown at Los Alamos Road is applicable to the alternate trail alignment only.

Near Los Alamos Road, the alternate trail alignment in this area would align the Sonoma Valley Trail from west of Highway 12 to a path running parallel to the highway, south of Las Alamos Road. Moving from the north, the trail would cross the eastbound Los Alamos Road approach within the existing crosswalks. The crossing at the intersection would be facilitated by the existing traffic signal, new high-visibility crosswalk markings, and improved pedestrian and bicycle signal equipment, e.g., countdown pedestrian signals, push buttons and loop detectors.

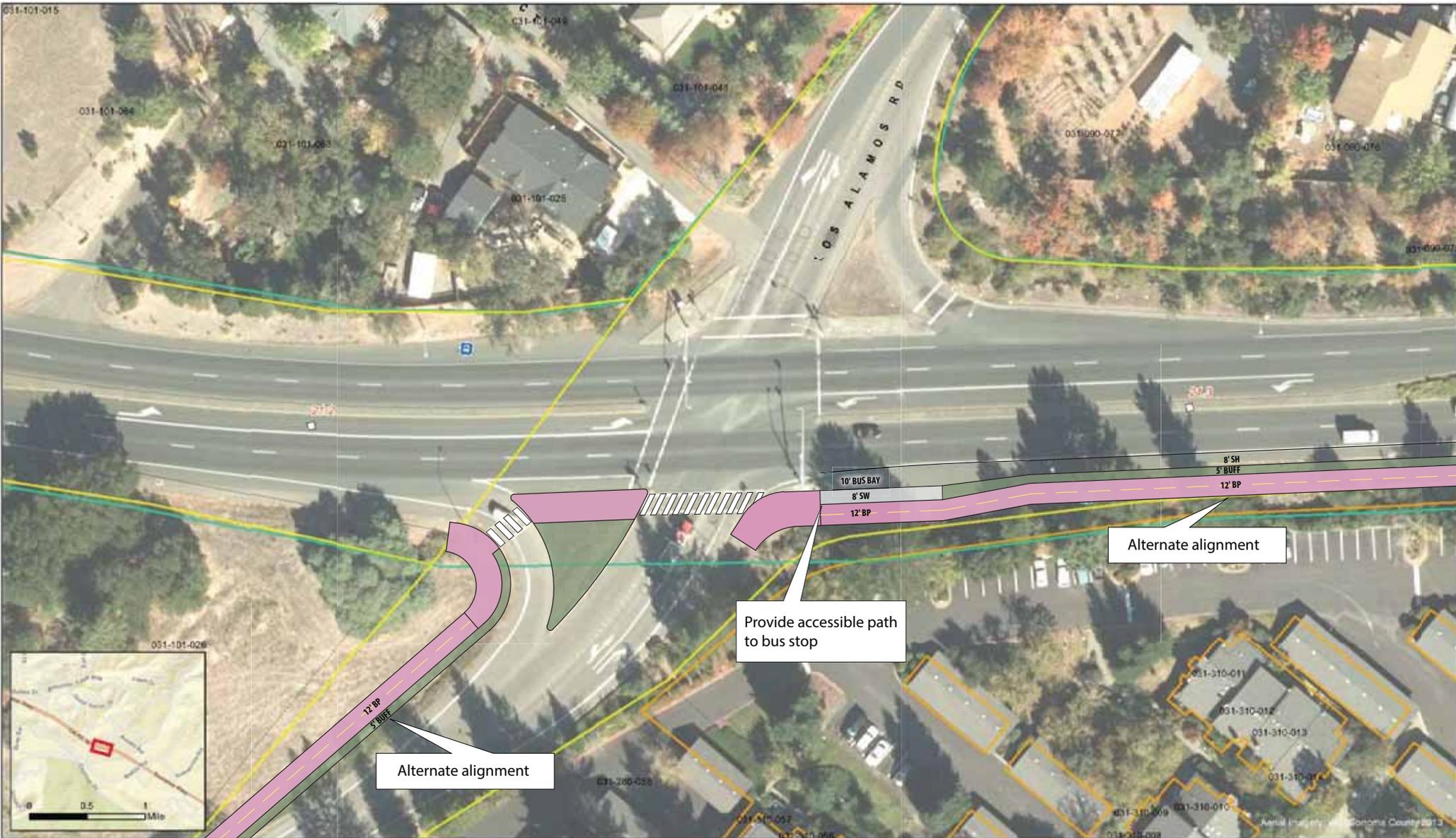
### ***Sonoma Highway at Melita Road (Figure 7-11)***

The intersection crossing shown at Melita Road is applicable to the alternate trail alignment only.

The alternate trail alignment would run along the west side of Highway 12 through the Melita Road intersection. The crossing at the intersection would be facilitated by the existing traffic signal, new high-visibility crosswalk markings, and improved pedestrian and bicycle signal equipment, e.g., countdown pedestrian signals, push buttons and loop detectors.

### ***Sonoma Highway at Elnoka Lane (Figure 7-12)***

The preferred trail alignment in this area would align the Sonoma Valley Trail from west of Highway 12 to a path running parallel to the highway, south of Elnoka Lane. The existing bus stop at the southwest corner of the intersection could be relocated to avoid a potential conflict with the proposed path.



Whole Postmiles  
 Teeth Postmiles  
 Infrastructure Conflict  
 Bridge  
 Bus Stops  
 Possible Trailhead  
 Note: This is NOT A FINAL MAP  
 This map is a preliminary planning tool and should not be used for construction or other legal purposes. Many of the features on this map are subject to change and are not intended to be used for any other purpose. This map does not constitute any right to the property for any person. This map does not constitute any right to the property for any person. This map does not constitute any right to the property for any person.

**Trail Alignment**  
 Preferred  
 Alternate  
 Potential Alternative  
 Future Trail Connection  
 Proposed Edge (if any)

**Parcels**  
 SCWA Easement  
 County Roads Right of Way

**CalTrans Right of Way**  
 Resource Avoidance  
 Williamson Act Lands  
 Publicly Owned Land

1 inch = 50 feet  
 0 25 50 Feet



Figure 7-10  
**SR12 at Los Alamos Rd**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY  
 YUMA VALLEY TRAIL FEASIBILITY STUDY



Alternate alignment

Provide accessible path to bus stop

- Whole Postmiles
- Tenth Postmiles
- Infrastructure Conflict
- Bridge
- Bus Stop
- Possible Trailhead

**THIS IS NOT A FINAL MAP**  
 This map is a preliminary planning tool and does not constitute an adopted project or a project plan. Many of the features on this map are identified on the map as simply proposed. It is not intended to be used for the purpose of any project. This map does not convey any right to the public to use any trail routes shown, nor does it guarantee any project development strategy.

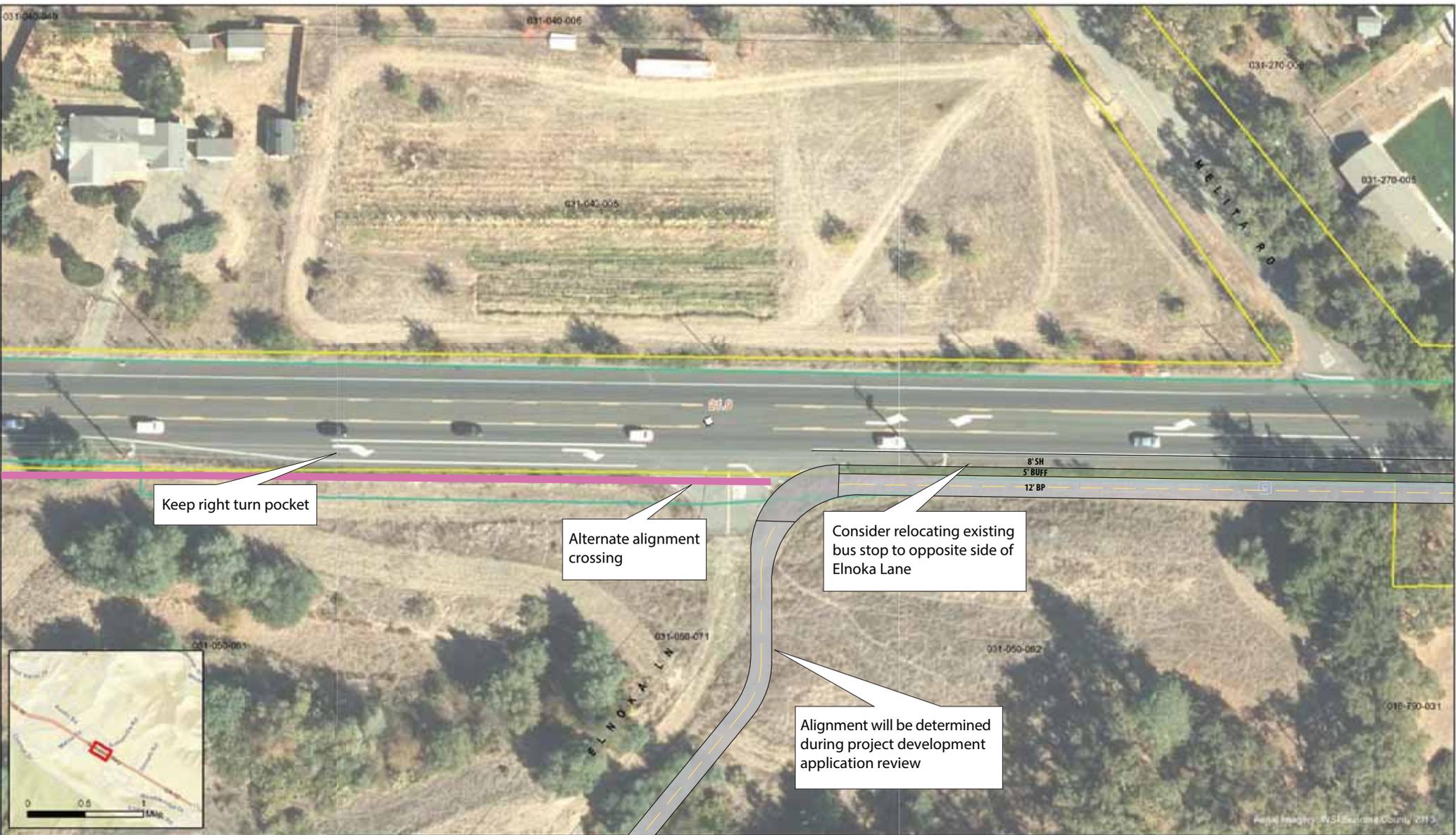
- Preferred Trail Alignment
- Alternate Trail Alignment
- Potential Alternate Trail Alignment
- Future Trail Construction
- Pavement Edge (15 ft)

- Parcels
  - SCWA Easement
  - County Roads Right of Way
  - CallTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands
  - Publicly Owned Land
- 1 inch = 50 feet



Figure 7-11

# SR12 at Melita Rd



Keep right turn pocket

Alternate alignment crossing

Consider relocating existing bus stop to opposite side of Elnoka Lane

Alignment will be determined during project development application review



- Whole Postmiles
- Tenth Postmiles
- Infrastructure Conflict
- Bridge
- Possible Trailhead
- Bus Stop

**THIS IS NOT A TRAIL MAP**  
 This map is a preliminary planning tool and does not constitute an official record or project plan. It is intended to provide a general overview of the study area and is not intended to be used as the basis for any project. This map does not constitute a right to use any trail routes shown or to be used in any way without the permission of the project sponsor.

- Trail Alignment**
- Preferred
- Alternate
- Potential Alternate
- Future Trail Connection
- Pavement Edge (75.0)

- Parcels
  - SCWA Easement
  - County Roads Right of Way
  - CarTrans Right of Way
  - Resource Avoidance
  - Williamson Act Lands
  - Publicly Owned Land
- 1 inch = 50 feet



Figure 7-12  
**SR12 at Elnoka Ln**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



The alternate trail alignment would run along the west side of Highway 12 through the Elnoka Lane intersection. The local street crossing could be accommodated with high-visibility crosswalk markings and signage.

### ***Highway 12 at Oakmont Drive (Figure 7-13)***

The preferred trail alignment at Oakmont Drive would transition from the west side of Highway 12, north of Oakmont Drive, to the east side of the highway. The highway crossing would occur at the north leg of the intersection within the existing crosswalk. Trail users would be detected at the traffic signal with improved pedestrian and bicycle detectors, e.g., push buttons and loop detectors.

There is no alternate trail alignment in this area.

### ***Highway 12 at Pythian Road (Figure 7-14)***

The preferred trail alignment in this area would run along the east side of Highway 12 and cross Pythian Road at an existing signalized intersection. The crossing could be improved with high-visibility crosswalk markings and signage. The trail design would need to account for existing drainage features at the northeast and northwest corners.

The alternate trail alignment would cross Highway 12 from the east, north of Pythian Road, to the west. The highway crossing would occur at the west and south legs of the intersection within the existing crosswalks.

### ***Highway 12 at Adobe Canyon Road (Figure 7-15)***

The preferred trail alignment in this area would run along the east side of Highway 12 and include an intersection crossing at Adobe Canyon Road. As a local street crossing, the multiuse path could be accommodated with a high-visibility crosswalk and signage. The trail design would need to accommodate access to the existing uses on the southeast corner of the intersection. The conceptual design proposes a permeable buffer, such as a paved area with paint hatching.

The alternate trail alignment would run along the west side of Highway 12. The driveway crossing at Adobe Canyon Road could be accommodated with high-visibility crosswalk markings and signage.

## ***Kenwood***

Highway 12 within the community of Kenwood, between Randolph Avenue and Warm Springs Road, is a special segment of the Sonoma Valley Trail. This Study recognizes a desire to provide access to the west side of Highway 12 because of fronting businesses and access within the community. The preferred alignment of the trail south of Randolph Avenue and north of Warm Springs Road is the east side of the highway.



**Legend**

- Whole Postmiles
- Tenth Postmiles
- Infrastructure Conflict
- Bridge
- Bus Stops
- Possible Trailhead

This map is a preliminary planning tool and does not constitute an offer of insurance or other financial product. Please consult your agent for more information. This map does not constitute any right to the public to use any real estate. Please refer to the project's final engineering drawings.

**Trail Alignment**

- Preferred
- Alternate
- Potential Alternate
- Future Trail Connection
- Pavement Edge (12 ft)

**Other Features**

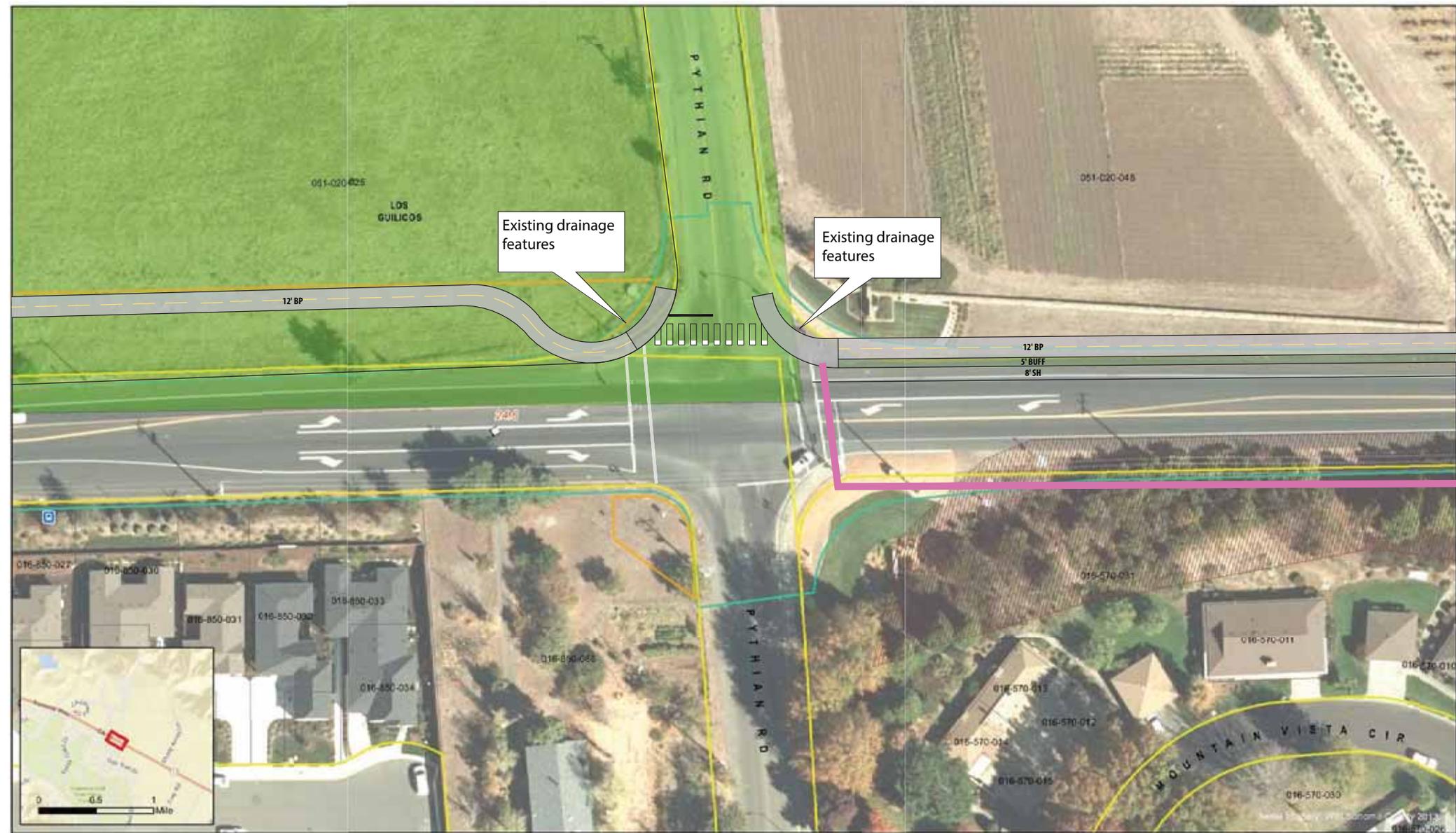
- Parcels
- SCWA Easement
- County Roads Right of Way
- CalTrans Right of Way
- Resource Avoidance
- Williamson Act Lands
- Publicly Owned Land

1 inch = 50 feet

0 25 50 Feet



Figure 7-13  
**SR12 at Oakmont Dr**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



Whole Possibles  
 Tent Possibles  
 Infrastructure Conflict  
 Bridge  
 Bus Stops  
 Possible Trailhead  
 Trail ID: SR12-17-24-001

This map is a preliminary planning tool and does not constitute an approved project or project plan. Major decisions or changes are identified on this map as being proposed for further study and are not user-ready guides for any purpose. This map does not contain any rights-of-way, easements, or other legal interests. Users are advised to consult with the appropriate agencies for more information.

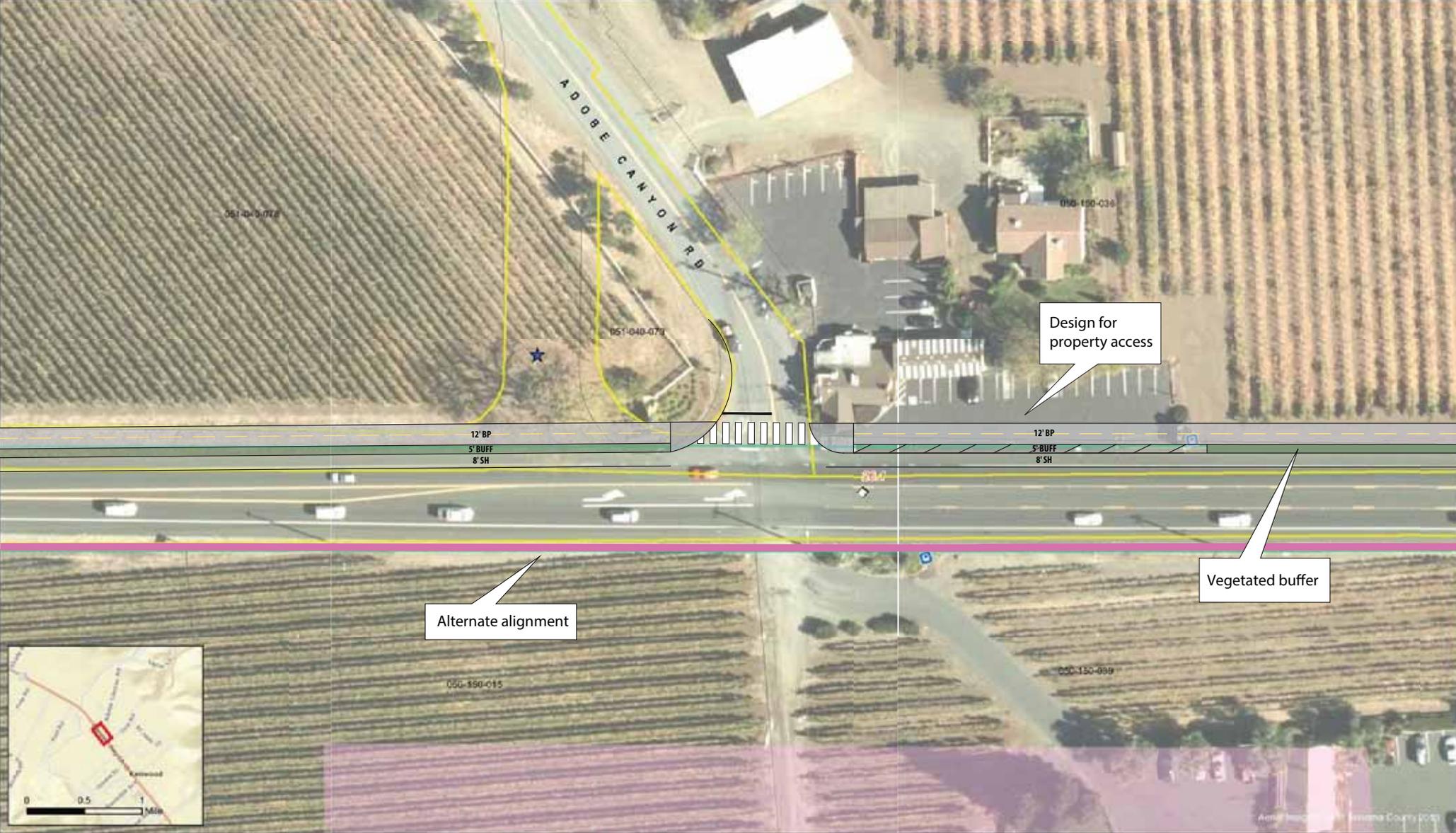
**Trail Alignment**  
 Preferred  
 Alternate  
 Potential Alternate  
 Future Trail Connection  
 Pavement Edge (15 ft)

Parcels  
 SCWA Easement  
 County Roads Right of Way  
 CalTrans Right of Way  
 Resource Avoidance  
 Williamson Act Lands  
 Publicly Owned Land

1 inch = 50 feet

0 25 50 Feet

Figure 7-14  
**SR12 at Pythian Rd**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



- Whole Possibles
- Tenth Possibles
- Infrastructure Conflict
- Possible Trailhead
- Bridge
- Bus Stops

- Trail Alignment
- Preferred
- Alternate
- Potential Alternate
- Future Trail Connection
- Payment Edge (15 ft)
- Parcel
- SCWA Easement
- County Road Right of Way
- Car/Tram Right of Way
- Resource Avoidance
- Williamson Act Lands
- Publicly Owned Land

SONOMA STATE UNIVERSITY  
ECONOMICS CENTER

QUESTA  
ENGINEERING CORP

Parisi  
TRANSPORTATION CONSULTING

Figure 7-15  
SR12 at Adobe Canyon Rd  
SONOMA VALLEY TRAIL FEASIBILITY STUDY  
JOMA VALLEY TRAIL FEASIBILITY STUDY



Given these constraints, the study proposes a one-way northbound buffered bicycle lane on the east side of the highway to accommodate trail users traveling through Kenwood. On the west side of Highway 12, the preferred trail concept is a two-way separated 10-foot multiuse path that would allow for both bicycle and pedestrian access. If the available right-of-way is not sufficient to allow for a two-way facility, the alternate trail concept would be a one-way, southbound buffered bicycle lane, similar to the northbound side of the highway.

Both the buffered bicycle lane and multiuse path would be designed to allow for fronting property access into driveways and parking lots.

The northbound (and potentially southbound) bicycle lane would follow CA MUTCD guidance for buffered bicycle lanes, which are separated from the adjacent general-purpose lane by a pattern of standard longitudinal markings, and may include chevron or diagonal markings (CA MUTCD Section 9C.04.42-52). The bicycle lane and buffer would be considered part of the roadway shoulder (CA HDM, 302.1).

The two-way multiuse path on the west side of Highway 12 would provide a five-foot buffer in addition to the eight-foot shoulder. The buffer could be constructed as either a paved or unpaved section, although the buffer would be paved at driveways to allow access to Highway 12.

### ***Sonoma Highway at Randolph Avenue (Figure 7-16)***

The preferred trail alignment at Randolph Avenue would transition southbound trail users from the east side of Highway 12, north of Randolph Road, to the west side of the highway. As described above, northbound trail users have the option of staying on the east (northbound) side of Highway 12 through Kenwood, or traveling on the west side in the two-way multiuse path.

There is an existing fire station at the intersection of Sonoma Highway and Randolph Avenue. The proposed trail concept would install a warning beacon at the south leg of the intersection. The warning beacon could be activated by the fire station when there is an emergency call. Pedestrians and bicyclists wishing to cross Sonoma Highway could also activate the warning beacon with a push button. The highway crossing design would include advance warning signs and warning lights, and high visibility crosswalk markings.

The alternate trail alignment in this area would run along the west side of Highway 12, and would not require a highway crossing. The local street crossing at Randolph Avenue could be accommodated with high-visibility crosswalk markings and signage.

### ***Highway 12 at Warm Springs Road (Figure 7-17)***

The preferred trail alignment at Warm Springs Road would transition southbound trail users from the west side of Sonoma Highway, north of Warm Springs Road, to the west side of the highway.



● Whole Possibilities  
 □ Tentative Possibilities  
 ▲ Infrastructure Conflict  
 ★ Possible Trailhead  
 Bus Stops

This map is a preliminary illustration and does not constitute an approved bicycle or pedestrian plan. None of the routes or staging areas detailed on this map are simply proposed. Further study will be required in the public for any proposal. This map shows tent options and rights to the public to use any trail under study, not those to occur or any project from responding requests.

**Trail Alignment**  
 Preferred  
 Alternative  
 Potential Alternative  
 Future Trail Connection  
 Pavement Edge (11.5 ft)

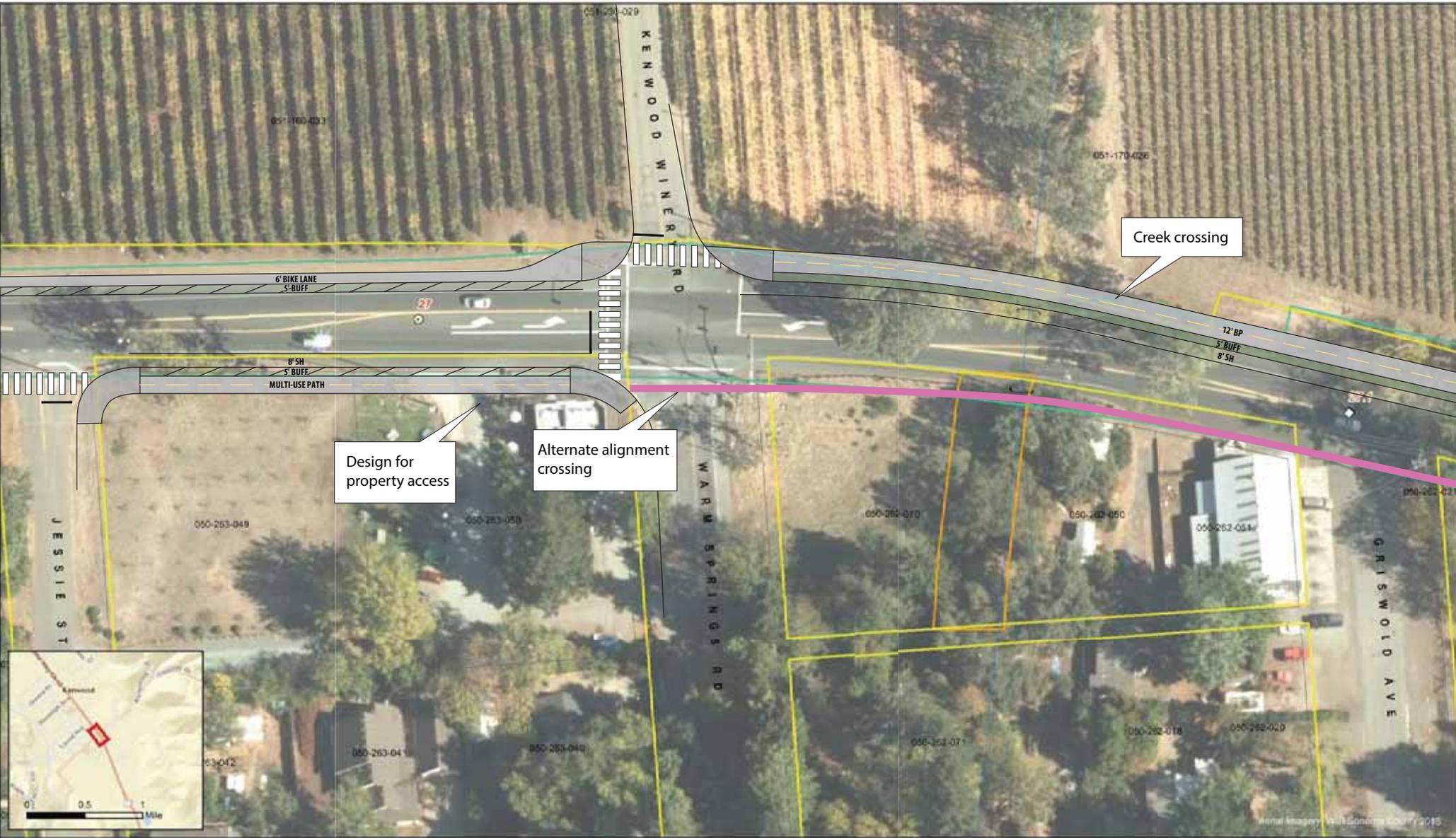
**Parcel**  
 SCWA Easement  
 County Roads Right of Way

**Right of Way**  
 CalTrans Right of Way  
 Resource Avoidance  
 Williamson Act Lands  
 Publicly Owned Land

1 inch = 50 feet  
 0 25 50 Feet



Figure 7-16  
**SR12 at Randolph Ave**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



<ul style="list-style-type: none"> <li> Whole Possibilities</li> <li> Youth Possibilities</li> <li> Infrastructure Conflict</li> </ul>	<ul style="list-style-type: none"> <li> Bridge</li> <li> Bus Stops</li> <li> Possible Trailhead</li> </ul>	<p><b>Trail Alignment</b></p> <ul style="list-style-type: none"> <li> Preferred</li> <li> Alternate</li> <li> Potential Alignment</li> <li> Future Trail Connection</li> <li> Permanent Edge (11.5)</li> </ul>	<ul style="list-style-type: none"> <li> Parcels</li> <li> SCWA Easement</li> <li> County Roads Right of Way</li> <li> CarTrans Right of Way</li> <li> Resource Avoidance</li> <li> Williamson Act Lands</li> <li> Publicly Owned Land</li> </ul>	<p>1 inch = 50 feet</p>	
--	--	--	--	-------------------------	--

Figure 7-17  
**SR12 at Warm Springs Rd**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



Northbound trail users would have the option of continuing on the east (northbound) side of the highway or crossing to the two-way multiuse path on the west side.

There is an existing traffic signal at the Warm Springs Road intersection. The trail crossing across Highway 12 would occur at the north leg of the intersection within the existing crosswalk.

The alternate trail alignment in this area would run along the west side of Highway 12, and would not require a highway crossing. The local street crossing at Warm Springs Road could be accommodated with high-visibility crosswalk markings and signage. Trail users would be detected at the traffic signal with push buttons.

### ***Highway 12 at Dunbar Road (Figure 7-18)***

The preferred trail alignment in this area would run along the east side of Highway 12, and would not require an intersection crossing. The alternate trail alignment would run along the west side of Sonoma Highway. The local street crossing at Dunbar Road could be accommodated with high-visibility crosswalk markings and signage.

### ***Sonoma Highway at Arnold Drive (Figure 7-19)***

The preferred trail alignment at Arnold Road would transition from the east side of Highway 12, north of Arnold Drive, to the west side of the highway. As a highway crossing, the multiuse path would leverage traffic control afforded by the existing traffic signal. The preferred trail crossing would occur across the south leg of the intersection, which would allow trail users to cross the highway in a signal phase. Trail users would be detected at the traffic signal with push buttons.

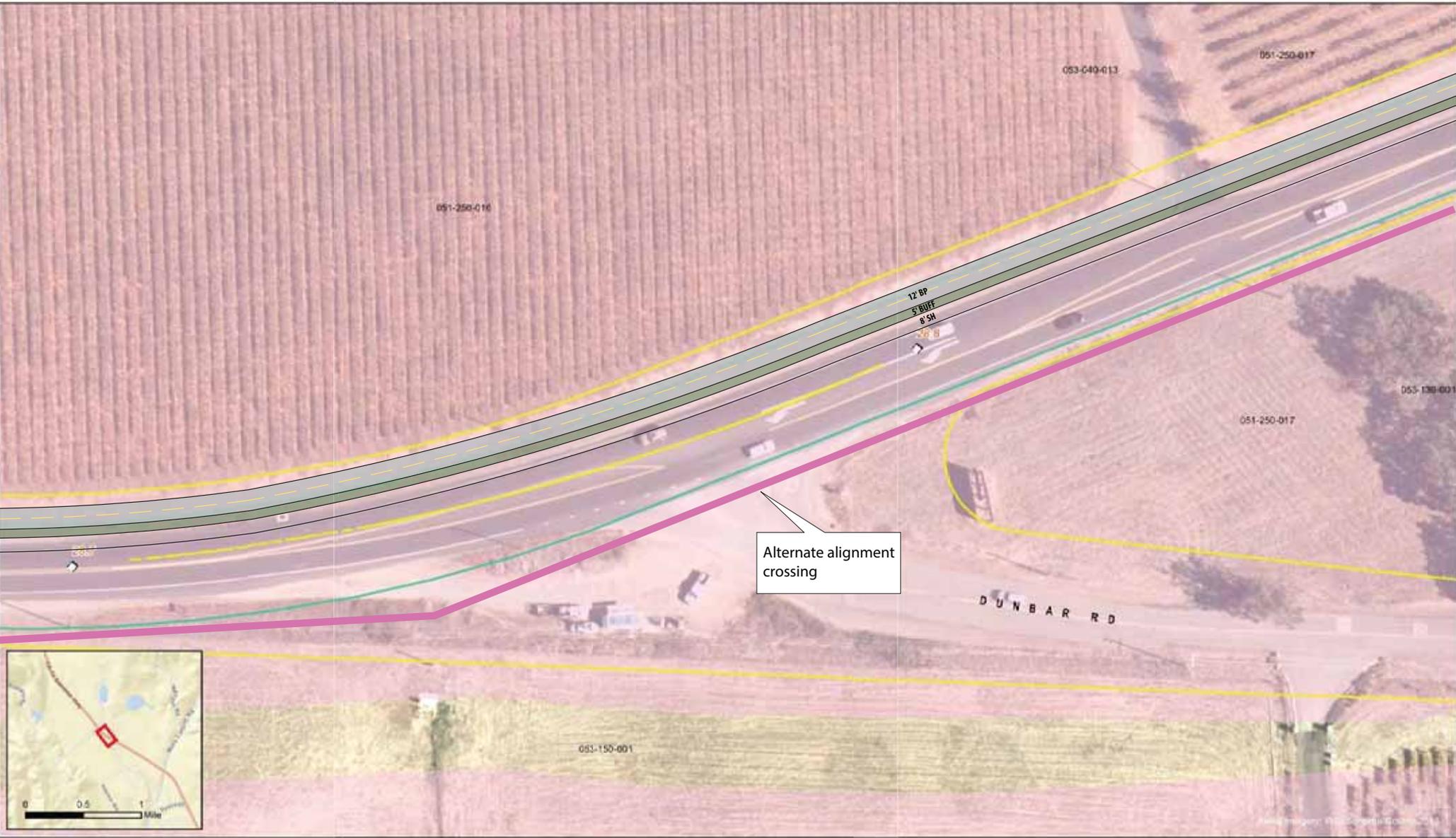
The detailed design should account for the existing roadway super-elevation and its effect on compliance to ADA standards for crosswalk longitudinal slopes and cross-slopes.

The alternate trail alignment would transition the trail from the west side of Highway 12, north of Arnold Drive, to the east side of the highway. Under the alternate alignment condition, the trail crossing would occur across the north leg of the intersection.

### ***Highway 12 at Madrone Road (Figure 7-20)***

The preferred trail alignment in this area would run along the west side of Highway 12. The Madrone Road crossing would be facilitated by the existing traffic signal and improved pedestrian and bicycle detectors, e.g., push buttons and loop detectors.

The alternate trail alignment would transition the trail from the east side of Highway 12, north of Madrone Road, to the west side of the highway. The alternate alignment crossing would occur across the south leg of Sonoma Highway within the existing crosswalk.



- Whole Possibilities
- Tenth Possibilities
- Infrastructure Conflict
- Bridge
- Bus Stops
- Possible Trailhead

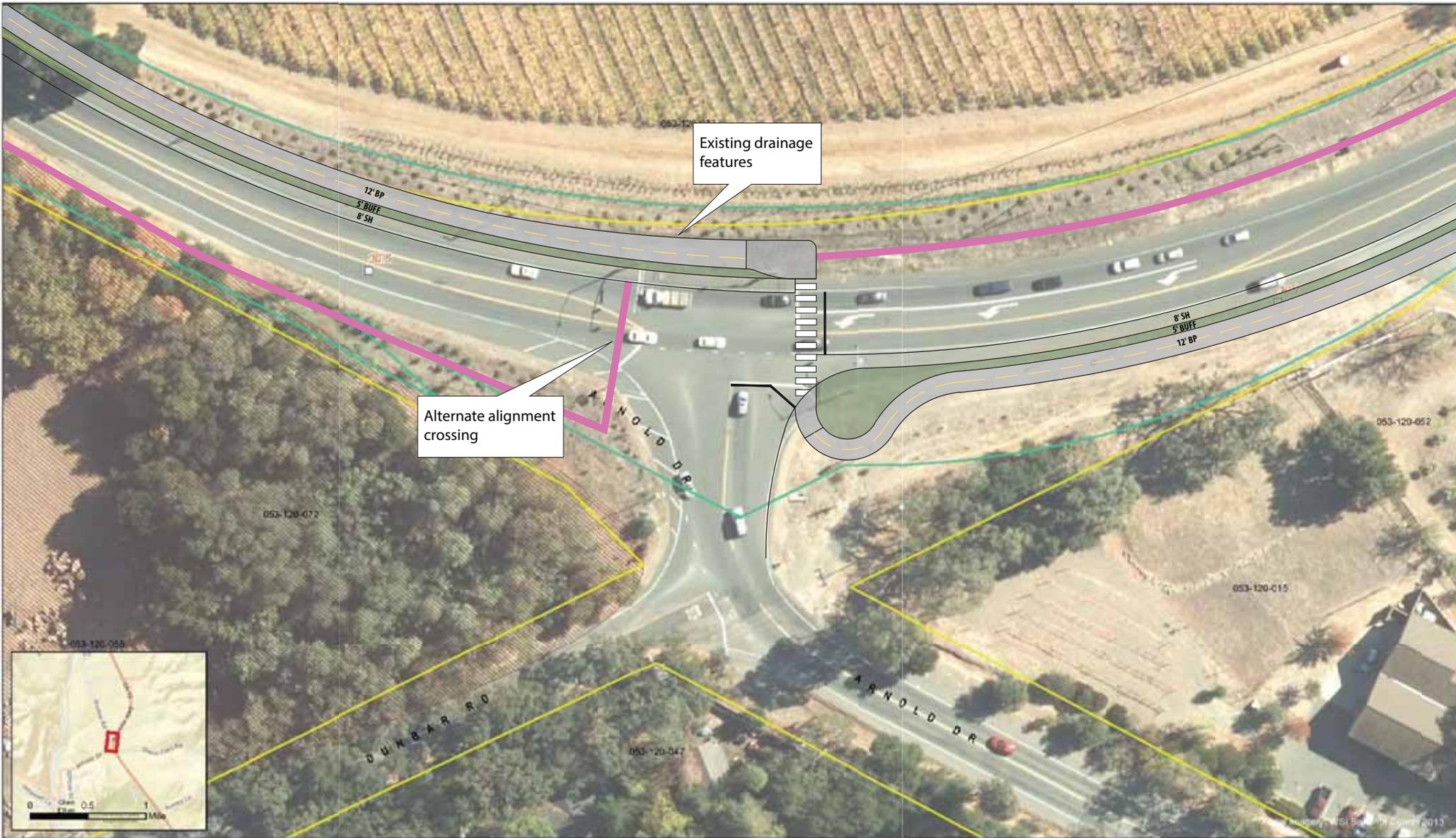
- Trail Alignment**
- Preferred
- Alternate
- Potential Alternate
- Future Trail Connection
- Pavement Edge (10 ft)
- Parcels
- SCWA Easement
- County Roads Right of Way
- CarTrans Right of Way
- Resource Avoidance
- Williamson Act Lands
- Publicly Owned Land



Figure 7-18

# SR12 at Dunbar Rd

SONOMA VALLEY TRAIL FEASIBILITY STUDY  
SONOMA VALLEY TRAIL FEASIBILITY STUDY



Whole Postmiles  
 Teeth Postmiles  
 Infrastructure Conflict  
 Bridge  
 Bus Stops  
 Possible Trailhead  
 053-120-059  
 053-120-072  
 053-120-052  
 053-120-015  
 053-120-047  
 053-120-058  
 053-120-057  
 053-120-056  
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 053-120-006  
 053-120-005  
 053-120-004  
 053-120-003  
 053-120-002  
 053-120-001

**To R Alignment**  
 Proposed  
 Alternate  
 Potential Alternate  
 Future Trail Corridor  
 Parcel Edge (15 ft)

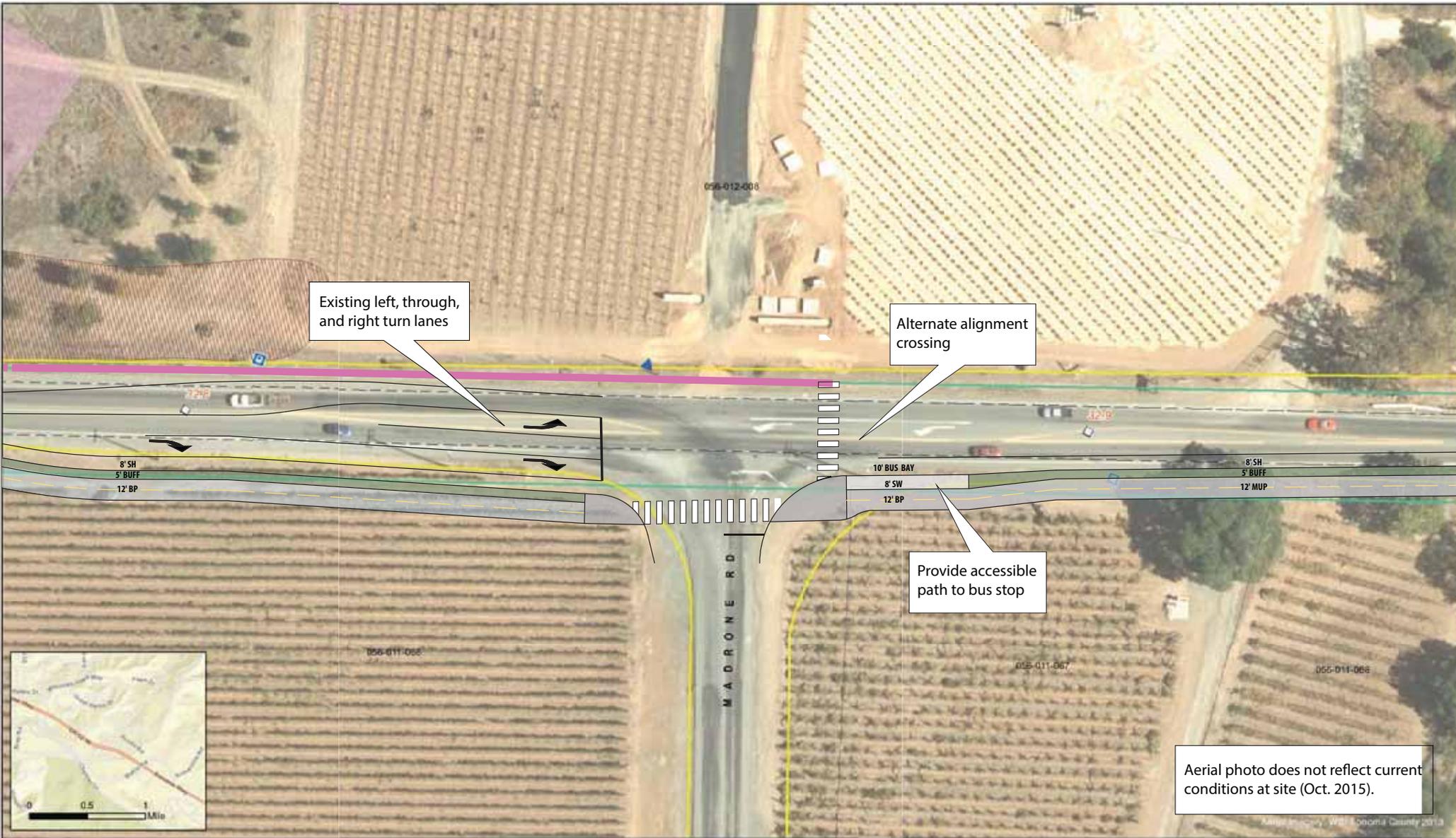
**Parcels**  
 SCMA Easement  
 County Roads Right of Way

**CalTrans Right of Way**  
 Resource Avoidance  
 Williamson Act Lands  
 Publicly Owned Land

1 inch = 50 feet  
 0 25 50 Feet



Figure 7-19  
**SR12 at Arnold Rd**  
**SR12 at Arnold Dr**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY  
 YOMA VALLEY TRAIL FEASIBILITY STUDY



Existing left, through, and right turn lanes

Alternate alignment crossing

Provide accessible path to bus stop

Aerial photo does not reflect current conditions at site (Oct. 2015).



- Whole Parcels
- Tenm Parcels
- Infrastructure Conflict
- Bridge
- Bus Stops
- Possible Trailhead

- Trail Alignment
  - Preferred
  - Alternate
  - Potential Alternate
  - Future Trail Connection
  - Pavement Edge (15 ft)

- Parcels
- SCWA Easement
- County Roads Right of Way

- Calltrans Right of Way
- Resource Avoidance
- Williamson Act Lands
- Publicly Owned Land





### ***Sonoma Highway at Agua Caliente Road (Figure 7-21)***

Agua Caliente Road represents the southern extent of this trail alignment study. The preferred trail alignment is the west side of Sonoma Highway, which currently has a five-foot sidewalk and landscaping. The conceptual trail design would widen the sidewalk facility to a multiuse path standard that could be shared between pedestrians and bicyclists.

There is no alternate trail alignment in this area.



On-street parking

Keep right-turn lane

Class II Connection to Central Sonoma Valley Trail

Sonoma Valley Fire Department



- Whip Postholes
- Trench Postholes
- Infrastructure Conflict
- Bus Stops
- Trail Alignment
- Alternative
- Potential Alternative
- Future Trail Connection
- Pavement Edge

- Parcels
- SCWA Easement
- County Roads Right of Way
- CallTrans Right of Way
- Resource Avoidance
- Wildern Act Lands
- Publicly Owned Land



Figure 7-21  
**SR12 at Agua Caliente Rd**  
 SONOMA VALLEY TRAIL FEASIBILITY STUDY



## 8 DESIGN GUIDELINES

The goal of the Sonoma Valley Trail is to provide a separate multiuse trail facility where possible, with design to comply with regulatory requirements for width, clearances, grade, separation from highways, design speed, sight distance and horizontal and vertical curves. Portions of the trail within Kenwood may likely be built with a combination of bicycle lanes, pedestrian paths, or separate bicycle facilities to accommodate local intensive use. It should also be noted that any trail segments proposed in Caltrans ROW would need to fulfill requirements of the Americans with Disabilities Act, which is also a goal of the Sonoma County Regional Parks Department.

This Section discusses design standards and guidelines to be applied toward the conceptual design of the Sonoma Valley Trail. The design guidelines reflect the management needs, operational responsibilities and regulatory authority of project stakeholders, as well as community concerns regarding the Trail expressed at the Community Workshops and comments received on the project website. The California Department of Transportation (Caltrans) Highway Design Manual (HDM), Chapter 1000 and the California Manual on Uniform Traffic Control Devices (CA MUTCD) set the standard for bikeway design in California. These manuals differentiate between the following types of bikeways:

- **Class I bikeways (bike paths)** are defined as facilities with exclusive right of way for non-motorized vehicles. Both bicycles and pedestrians may use Class I bikeways unless there is an adjacent, adequate pedestrian facility.
- **Class II bikeways (bike lanes)** are a designated space for bicyclists located adjacent to vehicular lanes. Bike lanes are demarcated with pavement striping and signage, and may include a painted buffer between the bicycle lane and general purpose lane.
- **Class III bikeways (bike routes)** are facilities shared with motor vehicles on the street, which are established by placing bike route signs along roadways. Additional enhancement of Class III facilities may be provided by adding shared roadway markings, or “sharrows”, along the route. There are no Class III bikeways proposed for this section of the Sonoma Valley Trail.



Caltrans is currently developing design guidance for **Class IV bikeways (separated bikeways)**, which are also known as cycle tracks. Separated bikeways are an exclusive facility for bicycles located within or directly adjacent to the roadway, and that is physically separated from motor vehicle traffic with a vertical element. Separated bikeways are differentiated from Class I bikeways by their more proximate relationship to the adjacent roadway, and from Class II bikeways by the vertical element.

The Design Guidelines form the basis for decision-making regarding trail alignment, type and amenities, including:

- Trail Use
- Signage and Wayfinding
- Bikeway and Pedestrian Facilities in Caltrans Right of Way
- Accessibility
- Aesthetic Considerations
- Transportation and Traffic Improvements

Implementation of the trail will require a precise design that complies with a variety of local, state and federal guidelines for pedestrian and bicycle facilities.

## 8.1 Design and Regulatory Standards

The following documents provide supplemental bikeway design guidance for aspects not explicitly addressed by the CA HDM and CA MUTCD:

- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, 2<sup>nd</sup> ed. (2012).
- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition (2012).
- Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide. (May 2012).

### ***Caltrans Bikeway and Pedestrian Facilities Guidelines***

Caltrans is responsible for operation of the state's Highway network, which includes Highway 12 in the Study Area. Although Caltrans has traditionally focused on the provision of transportation facilities for motor vehicles, in recent years there has been an increased interest in multimodal facilities to serve the needs of bicyclists, pedestrians and other modes of travel within the highway network. It is likely that some portions of the trail will need to be located in or cross Caltrans ROW. In addition, depending on the funding source, bicycle and pedestrian improvement projects may need to comply with Caltrans standards and regulations.



## Complete Streets

Caltrans has, at a policy level, endorsed the concept of providing for a network of multimodal facilities, including bicycle and pedestrian facilities, as part of a complete roadway network, or “Complete Streets”.

Since 2003, Complete Streets has evolved as a policy, planning and design process that enables roads to be planned, designed, constructed, operated, and maintained to provide safe access for all users, regardless of age, ability, or mode of transportation. At a federal, state and local level, policies and funding for transportation projects now include consideration of facilities to make the roadway network better and safer for drivers, transit users, pedestrians, and bicyclists.

In 2008 California legislature adopted Assembly Bill 1358, the Complete Streets Act of 2008, which is complementary to Caltrans policy. This required Cities and Counties, when modifying their General Plan Circulation Elements, “modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and Highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan”. It also required the Office of Planning and Research create new guidelines for the Circulation Element. These guidelines were published in January 2010.

Furthermore, Caltrans, in response to Deputy Directive-64-R1 (Complete Streets – Integrating the Transportation System) developed the Complete Streets Implementation Action Plan in 2010. This plan outlines the process by which they will address Complete Streets through various documents and departments. As of the 2012 Progress report, many documents have been or are in the process of being updated, including Deputy Directive 64-R2.

In 2014 Caltrans endorsed the National Association of Transportation Professionals (NACTO) design guidelines, supporting flexibility in design of multimodal facilities. In addition, Caltrans’ issuance of a memorandum (previously discussed) endorsing flexibility in the provision of multimodal facilities within the state’s roadway network may help facilitate funding and implementation of portions of the Sonoma Valley Trail.

In addition to operational improvements along Highway 12, the following documents provide general direction regarding design standards for non-motorized facilities within Caltrans ROW:

- Caltrans Highway Design Manual (HDM), (includes Chapter 1000: Bikeway Planning and Design, May 7, 2012; portions revised July 2015)





- Caltrans Design Information Bulletin (DIB) 82-05 Pedestrian Accessibility Guidelines For Highway Projects, October 2013
- Caltrans Project Development Procedures Manual, July 1999. Chapter 17, Encroachments in Caltrans Right of Way
- Caltrans Project Development Procedures Manual, July 1999. Chapter 31, Nonmotorized Transportation Facilities

### ***Caltrans Highway Design Manual (HDM)***

The Caltrans Highway Design Manual contains the policies and procedures for design of all facilities that are part of the state’s transportation system. Shared-use trails, such as this, also fall under the regulatory requirements of Caltrans Highway Design Manual. Where possible, the trail will be designed to comply with both federal guidelines as well as Caltrans standards for shared use, which are contained in the Highway Design Manual. This is especially important where the trail is within Caltrans’ ROW, or where a Caltrans Design Exception will be needed.

Caltrans policies have recently shifted to allow for more flexible accommodation of bicycle and pedestrian facilities within the state roadway system, with a special emphasis on safety. This includes issuance of a memorandum from Caltrans Design Chief<sup>19</sup> to allow greater flexibility in design as it relates to the provision of multimodal facilities. The memorandum states that Caltrans is continually improving its standards and processes to provide flexibility while maintaining the safety and integrity of the state’s transportation system, including a recent update to the Highway Design Manual (HDM) to facilitate the design of Complete Streets, recognizing that the State Highway system needs to be multimodal, not just for cars and trucks. The memorandum further states:

*“Caltrans and local entities are encouraged to work proactively with their communities to provide convenient, safe, and context-sensitive facilities that promote increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics as appropriate. This approach has resulted in successful flexible design solutions in the past and the Department endorses its use as a fundamental principle of planning and design.”*

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<sup>19</sup> Memorandum to Highway Design Manual Holders from Timothy Craggs, Chief, Division of Design, April 10, 2014. “Design Flexibility in Multimodal Design”



## 8.2 Design Standards for Caltrans Facilities

Much of the trail will be located within or adjacent to Highway 12, and designed to conform to Caltrans Standards, as discussed in this section.

### ***Class I Bikeways (Bike Paths)***

**Width.** Per the California Highway Design Manual Chapter 1000, the minimum paved width of travel way for a two-way bike path shall be eight feet, 10 feet is preferred. A minimum two-foot wide shoulder, composed of the same pavement material as the bike path or all weather surface material free of vegetation, shall be provided adjacent to the traveled way of the bike path when not on a structure. (CA HDM, 1003.1(1))

**Separation from Adjacent to Streets and Highways.** The minimum separation between the edge of pavement of a bicycle path and the edge of traveled way of a parallel road or street shall be five feet plus the standard shoulder widths (CA HDM, 1003.1(7)). The mandatory standard for a two-lane freeway and expressway is eight feet (CA HDM, Table 302.1).

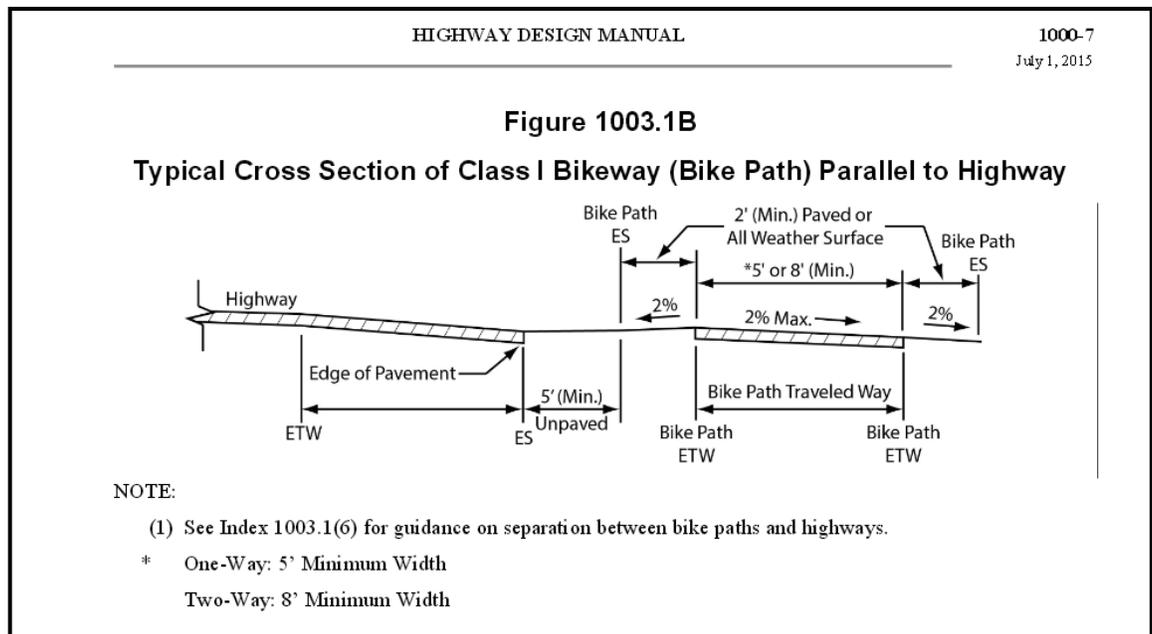
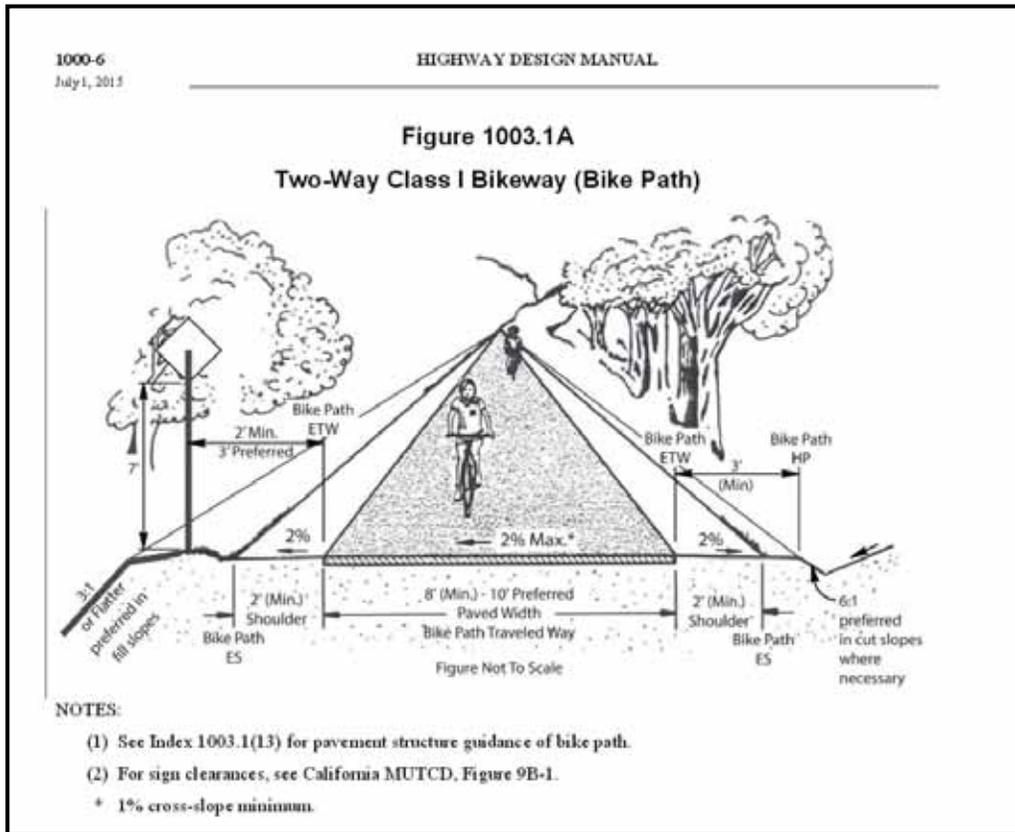
**Design Speeds.** The CA HDM mandates a minimum design speed of 20 mph on bike paths with mopeds prohibited, and 30 mph on long downgrades (steeper than four percent and longer than 500 feet) (CA HDM, Table 1003.1). Further parameters on the horizontal alignment, stopping sight distance, and horizontal and vertical curves follow the design speed (CA HDM, 1003.1(9-13)). Trail speed is a potential issue with use of motorized bicycles on multiuse paths.

**Grades.** The maximum grade rate recommended for bike paths is five percent. Sustained grades should be limited to two percent. (CA HDM, 1003.1(14)).

**Pavement.** The pavement material and structure of a bike path should be designed in the same manner as a highway. The material should maintain a smooth, well drained, all-weather riding surface with skid resistant qualities. Principal loads will normally be from maintenance and emergency vehicles. (CA HDM, 1003.1(15)).

**Drainage.** The bike path should have a minimum cross-slope of one percent and maximum of two percent. Sloping of the traveled way in one direction is the preferred practice. The bike path shoulder shall slope away from the traveled way at two to five percent. (CA HDM, 1003.1(16)).

CA HDM Figure 1003.1B illustrates the guidance for cross-slopes of the bike path traveled way and shoulders.





### ***Class II Bikeways (Bike Lanes)***

**Width.** Per the CA MUTCD, the minimum width of a bike lane is four feet without an adjacent gutter, and minimum five feet with an adjacent gutter (Figure 9C-102(CA)). The preferred width is six feet or more. A Class II facility alone does not accommodate pedestrian use.

All proposed bike lane segments in this study also include a bike lane buffer. Per the CA MUTCD, a bike lane buffer area may be used to separate a bike lane from an adjacent general-purpose lane. The buffer may include chevron or diagonal markings. (CA MUTCD Section 9C.04.42-52). The minimum width of the buffer area is 18 inches. Chevron or diagonal markings are recommended when the buffer is four feet or wider. (CA MUTCD Figure 9C-104).

**Separation from Adjacent to Streets and Highways.** Class II bikeways are typically part of the shoulder width (CA HDM, 302.1). Therefore, no additional provisions for lateral separation for bike lanes are required. However, the width of the bike lane and buffer must conform to the mandatory standard for shoulders on a two-lane freeway and expressway, which is eight feet (CA HDM, Table 302.1).

**Design Speeds, Grades, Pavement, and Drainage.** Class II bikeway design typically follows the standards of design for the adjacent roadway facility.

### ***Separated Bikeways (Class IV Bikeways or Cycle Tracks)***

Separated bikeways are a type of bikeway design that affords a greater degree of separation between bicycles and motor vehicles. Separated bikeways are differentiated from Class I bikeways by their more proximate relationship to the adjacent roadway, and from Class II bikeways by a vertical element. The vertical element may include but is not limited to on-street parking, raised curbs, bollards, and flexible posts. Separated bikeways can operate as one-way or two-way facilities. (FHWA 2015, p. 13).

**Width.** The preferred combined width of a two-way separated bikeway is 12 feet (FHWA 2015, p. 81).

**Separation from Adjacent to Streets and Highways.** The preferred width of the horizontal buffer area for a separated bikeway is three feet. As noted above, vertical elements located within the horizontal buffer may include delineator posts, bollards, concrete barriers, and raised curbs. (FHWA 2015, pp. 84-87).

**Design Speeds, Grades, Pavement, and Drainage.** Separated bikeway design typically follows the standards of design for the adjacent roadway facility.

### ***Driveway Design***

Driveways and side-streets that intersect with separated bike lanes may create a potential crash risk due to the conflict between turning motor vehicles and through bicyclists. Within this study, this may occur when drivers do not expect the contra-flow direction of travel that occurs on two-way separated bike lanes.



The FHWA separated bikeway guide provides guidance on designing for two-way separated bikeways at driveways, including pavement marking treatments to improve the visibility of the separated bike lane. Signs on side streets or driveways can alert drivers to expect two-way bicycle traffic.

## **Separation between Path and Highway**

Caltrans HDM Chapter 1000 provides the following directive regarding separation of the path and highway:

### **1003.1 (7) Bike Paths Parallel and Adjacent to Streets and Highways**

*A wide separation is recommended between bike paths and adjacent highways (see Figure 1003.1B). The minimum separation between the edge of pavement of a one-way or a two-way bicycle path and the edge of traveled way of a parallel road or street shall be 5 feet plus the standard shoulder widths. Bikepaths within the clear recovery zone of freeways shall include a physical barrier separation. The separation is unpaved and does not include curbs or sidewalks. Separations less than 10 feet from the edge of the shoulder are to include landscaping or other features that provide a continuous barrier to prevent bicyclists from encroaching onto the highway.*

*Suitable barriers may include fences or dense shrubs if design speeds are less than or equal to 45 miles per hour. Obstacles low to the ground or intermittent obstacles (e.g., curbs, dikes, raised traffic bars, posts connected by cable or wire, flexible channelizers, etc.) are not to be used because bicyclists could fall over these obstacles and into the roadway.*

*Bike paths immediately adjacent to streets and highways are not recommended. While they can provide separation between vehicles and nonmotorized traffic, they typically introduce significant conflicts at intersections. In addition, they can create conflicts with passengers at public transit facilities, and with vehicle occupants crossing the path. They are not a substitute for designing the road to meet bicyclist's mobility needs. Use of bicycle paths adjacent to roads is not mandatory in California, and many bicyclists will perceive these paths as offering a lower level of mobility compared with traveling on the road, particularly for utility trips. Careful consideration regarding how to address the above points needs to be weighed against the perceived benefits of providing a bike path adjacent to a street or highway. Factors such as urban density, the number of conflict points, the presence or absence of a sidewalk, speed and volume should be considered.*

## **Caltrans Design Information Bulletin (DIB) 82-05 Pedestrian Accessibility Guidelines for Highway Projects, October 2013**

This Design Information Bulletin provides guidance for the placement of pedestrian facilities within Caltrans ROW. Trails within the State Highway ROW are considered to be pedestrian facilities if pedestrians may traverse the path, either for their exclusive use or shared with other users.



Every Highway within the State Highway right-of-way, regardless of the project sponsor, that proposes to construct pedestrian facilities must be designed in accordance with these policies and standards. There is a design exception process for structural or technical infeasibility. This applies to all work, including facilities maintenance and pavement management, which would necessitate the installation or retrofit of curb ramps and crosswalks within existing ROW. Facility requirements include:

- Curb ramps or sloped areas with detectable warning surface are required to eliminate barriers between street and pedestrian walkway
- Vehicular lanes and shoulders are not required to be accessible, but if determined to be a pedestrian route, then shall be accessible
- All surfaces on an accessible route shall be stable, firm, and slip resistant
- Stamped asphalt or concrete is not recommended, color is acceptable
- Vertical clearance shall be 80 inches high minimum
- If an accessible route has less than 60 inches clear width, then passing spaces at least 60 inches by 60 inches shall be located at intervals not to exceed 200 feet
- All walks with continuous gradients shall have resting areas, 5 feet in length, at intervals of 400 feet maximum
- Where pedestrian access routes are contained within a street or Highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or Highway. Where pedestrian access routes are not contained within a street or Highway right-of-way, the grade of pedestrian access routes shall be 5.0% maximum.
- The cross slope of pedestrian access shall be 2.0% maximum.
- Slopes that are greater than 1V:20H (5.0%) will be considered ramps and must not exceed a 30-inch rise without landings.
- The maximum slope of a ramp shall not exceed 1V:12H (8.3%).
- Design must be in accordance with the *Highway Design Manual* for the appropriate bikeway classification (see above)
- Interpretive exhibits are also subject to accessibility requirements

### ***Caltrans Project Development Procedures Manual, July 1999. Chapter 17, Encroachments in Caltrans Right of Way***

Chapter 17 of the Caltrans Project Development Procedures Manual describes the policies and procedures for allowing encroachment of facilities within Caltrans ROW, and requirements for obtaining an Encroachment Permit. An encroachment, as defined in Section 660 of the Streets and Highways Code, can be any structure or object which is within the ROW but not a part of the Caltrans facility. Encroachments allow temporary or permanent use of Highway ROW by a utility, a public entity, or a private party.



- *“Ensure the safety of the traveling public, Highway workers and permittees.*

*Protect, maintain and enhance the quality of the State Highway system during and after permitted work,* Encroachments also include any temporary or permanent break in access or use of the Highway ROW: for grading, excavating, filling or removing of materials by public agencies, developers or private individuals.

As stated in the Pedestrian Accessibility Guidelines discussed above, placement of pedestrian facilities within Caltrans property requires an Encroachment Permit, and facilities must be designed or retrofitted to be accessible. This documentation is required at the time of encroachment permit application.

According to the Caltrans Encroachment Permit Application Guide (Caltrans, August 2013), encroachment permits are necessary to:

- *Ensure that the proposed encroachment is compatible with the primary uses of the State Highway system,*
- *Protect the State’s and public’s investment in the Highway facility, and*
- *Ensure that temporary uses of State Highway right of way for special events, filming etc. are conducted safely and with minimum inconvenience to the traveling public. “*

Typically, for Caltrans to approve a longitudinal encroachment permit, the following must be demonstrated as part of the permit process:

- There are no other feasible alternatives
- The encroachment area is not needed for maintenance or other traffic or safety improvements
- The facility design is safe for trail users and users of the adjacent Highway facility and follows Caltrans Design Standards
- There are no significant environmental issues that cannot be mitigated.

### ***Caltrans Project Development Procedures Manual, July 1999. Chapter 31, Nonmotorized Transportation Facilities***

This Manual contains guidance for a “non-motorized transportation facility” which is a facility designed primarily for the use of pedestrians, bicyclists, or equestrians. It may be designed primarily for one of these uses or it may be designed as a joint-use facility. A non-motorized transportation facility may be part of the Highway (such as a shoulder) or it may be separated from Highway traffic for exclusive non-motorized use (such as a bike path or sidewalk). Any new projects for non-motorized transportation facilities along a State Highway or within its ROW will generally fall into one of the following categories:

- Replacement of an existing major route for nonmotorized traffic that is being severed or destroyed by freeway construction (S&H Code -- Section 888)
- Provision of a non-motorized facility along a new freeway corridor where non-motorized facilities do not exist (S&H Code -- Section 888.2)



- Provision of a non-motorized facility along a State Highway under a Cooperative Agreement at the request of a local agency (S&H Code -- Section 887.6)
- Provision of a nonmotorized facility along a State Highway based upon a finding that the traffic safety or capacity of the Highway will be increased (S&H Code -- Section 887.8). The finding is made in consultation with appropriate law enforcement agencies.

In addition, any development of a State Highway project should address features beneficial to non-motorized traffic, including (but not limited to) widening shoulders, striping, and signing.

Money is allocated each year in the state budget for provision of non-motorized facilities. Section 887.8 of the S&H Code states that Caltrans may construct and maintain non-motorized transportation facilities approximately paralleling State Highways (after consulting with the law enforcement agency having jurisdiction over the Highway). If Caltrans determines that a non-motorized facility approximately paralleling the Highway would increase traffic safety or traffic capacity on the Highway, Caltrans pays for the construction and maintenance of the non-motorized facility. Design of the non-motorized facilities must also be in accordance with the Highway Design Manual.



### 8.3 Trail Accessibility

To the extent feasible, the Sonoma Valley Trail will be designed to comply with applicable federal and state guidelines for disabled access. The Sonoma Valley Trail is intended to be an all-weather shared-use trail, capable of accommodating pedestrians, bicycles, equestrians and universally accessible modes. Accessibility guidelines are provided by multiple agencies, and compliance would be applicable depending on the type of facility, implementing agency, and funding source. Guidelines include:



- Americans With Disabilities Act (ADA) [www.Access-Board.Gov](http://www.Access-Board.Gov)
- Title 24, California Building Code
- Architectural Barriers Act, Final Guidelines For Outdoor Developed Areas, November 25, 2013
- American Association of State Highway and Transportation Officials (AASHTO)
- Manual Of Uniform Traffic Control Devices (MUTCD)
- Institute Of Traffic Engineering (ITE)
- Federal Highway Administration/National Highway Institute (FHWA, NHI)



The trail will be designed in accordance with ADA accessibility guidelines wherever feasible, which require a firm, stable surface for trails, and design accommodations for grade, cross-slope, width, etc. There are many design standards that provide guidance regarding trail design, and the trail segments will need to comply with one or more standards, depending upon funding, trail classification (hiking only, shared use, bikeway, etc.) and feasibility for compliance with applicable standards. There are numerous standards that may be applicable to implementation of the trail.

Access to project facilities by people of all abilities is subject to regulations and standards set forth by the United States Access Board. The Access Board is an independent federal agency that promotes equality for people with disabilities, and develops and maintains design criteria for the built environment. The Board provides technical assistance and training on these requirements and on accessible design and continues to enforce accessibility standards that cover federally funded facilities. Accessibility is regulated under the Americans with Disabilities Act (ADA), Title 24 of the California Building Code, and may be subject to standards of the Architectural Barriers Act (ABA), which applies to facilities on federal lands (or with federal funding).



**Americans with Disabilities Act.** The United States Congress enacted the Americans with Disabilities Act (ADA) in 1990 to address discrimination against individuals with physical and mental disabilities. The ADA requires that all facilities and buildings open to the public be accessible to those with disabilities. ADA standards for outdoor areas have not been finalized, but will likely be similar to standards for outdoor areas adopted as part of the ABA (see below). Design and implementation of portions of the trail that connect to parking areas, restrooms, trailheads or other physical facilities might also need to comply with federal regulations contained in the *ADA Accessibility Guidelines for Buildings and Facilities* (ADAAG) <http://www.access-board.gov/adaag/html/adaag.htm#4.3>. These guidelines require a 36 inches minimum clear trail width, with passing space at minimum 200-foot intervals if the trail is less than 60 inches wide, depending upon the anticipated trail use.

**Title 24, California Building Code.** The State of California has also adopted a set of design guidelines for accessible facilities, incorporating ADA guidelines. These requirements are contained in the California Code of Regulations, Title 24, Part II, California Building Code (CBC)<sup>20</sup>. CBC contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. Most project facilities including trailheads, access points and related facilities will be subject to ADA and state accessibility Title 24 regulations. Site furnishings and facilities such as benches, picnic tables, accessible parking areas, routes of travel to restrooms or buildings are regulated under Title 24.

**Architectural Barriers Act.** Standards issued under the Architectural Barriers Act (ABA) apply to facilities designed, built, altered, or leased with certain federal funds. Passed in 1968, the ABA is one of the first laws to address access to the built environment. The law applies to projects built or altered with federal grants or loans.

To address the need for accessibility standards for outdoor areas, the Access Board developed the Architectural Barriers Act Accessibility Guidelines; Outdoor Developed Areas, which became effective November 25, 2013<sup>21</sup>. These guidelines have been incorporated into Chapter 10 of the ABA Standards, and include design standards for facilities such as piers and platforms; outdoor constructed features such as picnic tables, benches and viewing scopes; viewing areas; outdoor recreation access routes; and trails. The standards also outline the conditions for exceptions to accessibility compliance. These guidelines set forth recommended trail width, gradient, cross slope and other factors that affect trail accessibility. Depending upon the type of use, guidelines call for a maximum trail gradient of 5%, or 1 ft. rise in 20 feet of distance, with a maximum 2% cross slope. Under some circumstances, depending on the type of anticipated use and connections to accessible facilities, short distances of trail at up to 10-12% grade may be allowed if a landing is provided:

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<sup>20</sup> California Code of Regulations, Title 24 Part 2, November 1, 2013.

<sup>21</sup> Architectural and Transportation Barriers Compliance Board, September 26, 2013, Architectural Barriers Act Accessibility Guidelines; Outdoor Developed Areas, Final Rule, 36 CFR Part 1191 RIN 3014-AA22.



- 1:20 (5%) any length
- 1:12 (8.33%) for up to 200 feet
- 1:10 (10%) for up to 30 feet
- 1:8 (12.5%) for up to 10 feet
- No more than 30% of the total trail length shall exceed 1:12

### **AASHTO Guidelines**

The primary design guide for bicycle and shared use facilities is the “Guide for the Development of Bicycle Facilities” from the American Association of State Highway and Transportation Officials (AASHTO), 1999. The AASHTO Guide defines a “shared use path” as a facility on exclusive right-of-way and minimal cross flow by motor vehicles. Users generally include bicyclists, skaters, and pedestrians. In most cases, the AASHTO Guide requires a greater level of accessibility when designing trails for pedestrians, including bicyclists and skaters than the ABA guidelines, but trails should ideally be designed to comply with both standards.

NACTO’s *Urban Street Design Guide* and *Urban Bikeway Design Guide* (<http://nacto.org/usdg/>) also incorporates AASHTO guidelines for the design of complete roadway facilities and shared use paths.

### **Accessibility Exceptions**

The final trail design should be in compliance with all applicable guidelines and regulations for accessibility. Most guidelines also contain conditions for exceptions to meeting trail accessibility goals, which might apply for some steeper areas where there are constrained areas, steep slopes and environmentally sensitive areas that must be avoided. Conditions for exceptions should be documented as each trail segment is implemented.

Analysis of segment opportunities and constraints included evaluation of slope and terrain, and has been incorporated into the summary of constraints rankings. It is likely that some trail segments would require a documented exception. Segments with grades over 5% would need to be designed with ramps, structures or other design elements to comply with accessibility requirements. However, segments that are within existing street ROW are generally exempted from meeting bikeway grade requirements. Documentation of exception conditions would be need to be included in the detailed design planning for each segment as it is implemented, including Caltrans Design exception for any non-compliant trail segments within Caltrans ROW. Exception conditions include:

- Condition 1. Compliance Would Cause Substantial Harm to Cultural, Historic, Religious, or Significant Natural Features or Characteristics
- Condition 2. Compliance Would Substantially Alter the Nature of the Setting or the Purpose of the Facility, or Portion of the Facility
- Condition 3. Compliance Would Require Construction Methods or Materials That Are Prohibited by Federal, State, or Local Regulations or Statutes



- Condition 4. Compliance Would Not Be Feasible Due to Terrain or the Prevailing Construction Practices

In some cases, design exceptions would also have to comply with Caltrans requirements. Cost is generally not an allowable design exception.

## 8.4 Aesthetic Considerations

The Study Area is located within a scenic region, and portions would be subject to design and aesthetic considerations to minimize visual intrusion. Design to minimize excessive cut or fill slopes, setbacks, buffers, and/or barrier design for built elements would be subject to review to minimize potential visual impact.

### **Earthwork and Grading**

Earthwork to create an accessible trail has the potential to disturb existing slopes. The County's Grading Standards within and outside the Coastal Zone limit grading on slopes and near environmentally sensitive habitat. Special attention is given to public view corridors in Section 23.05.034, which states:

*“Grading, vegetation removal and other landform alterations shall be minimized on sites located within areas determined by the Planning Director to be a public view corridors from collector or arterial roads. Where feasible, contours of finished grading are to blend with adjacent natural terrain to achieve a consistent grade and appearance.”*

### **Barriers**

Barriers or guardrails may be needed in some locations where the trail must be located within Caltrans ROW, and there is inadequate separation from the vehicular lane to the trail.

Design of any barriers or railings in this area should consider aesthetic conformance with adjacent landscape features, as well as to minimize visual intrusion.





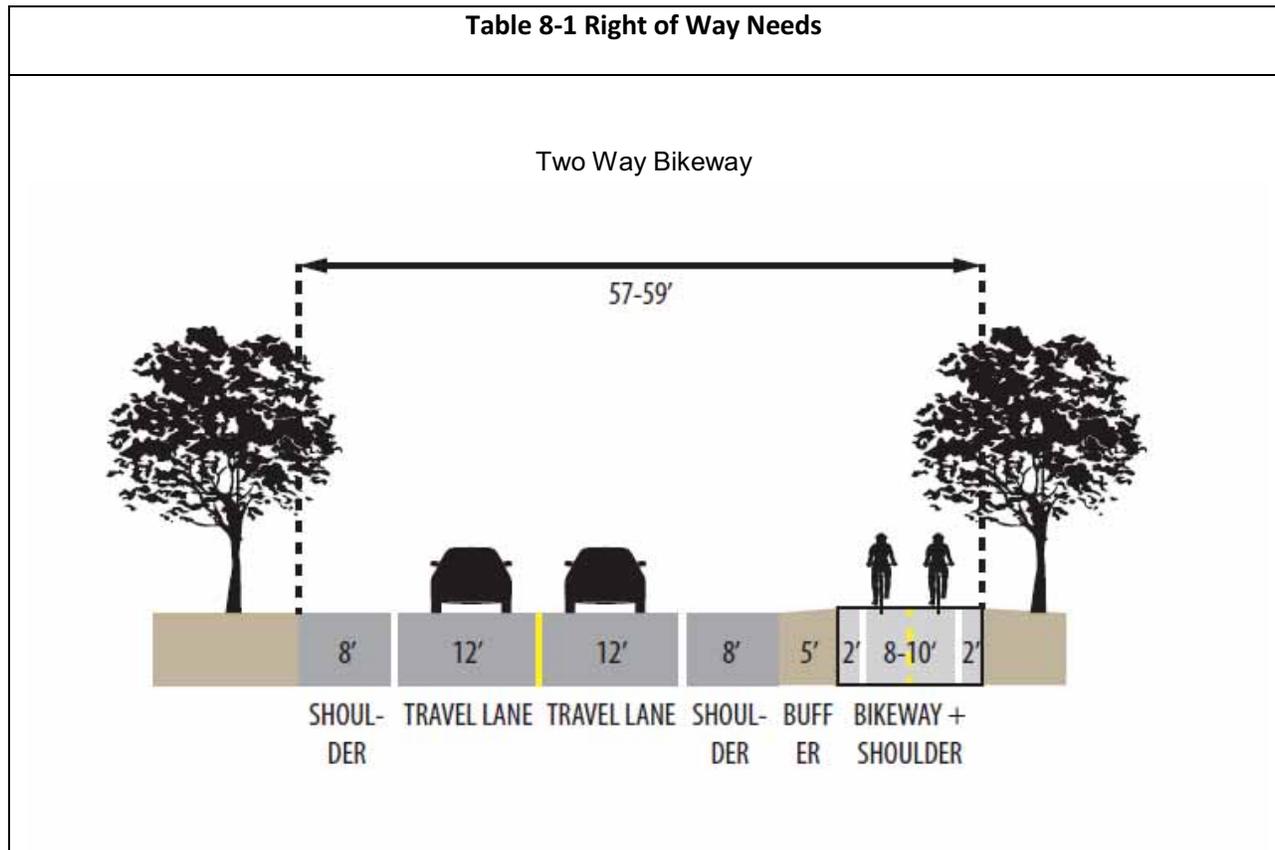
## 8.5 Trail Elements

### *What will the Trail look like?*

Depending on the final alignment location, easement width, proximity to a road or highway, and surrounding topography or environmental conditions, the Sonoma Valley Trail might be a combination of paved bikeways, bike lanes and natural, stabilized surface paths, as well as separated structures including bridges and boardwalks, and would likely be similar to one of the following trail sections (Figures 8-1 through 8-4).

### *Right of Way Needs*

To accommodate a separate trail facility along Highway 12, there must be enough available width to support the traffic lane, buffer, trail and other facilities. In some areas along Highway 12, there is available right of way that has been acquired for widening (or freeway improvements in the past) that may be sufficient for trail implementation. Detailed property surveys may be needed to verify land availability. Table 8-1 illustrates the minimum right of way needed depending on trail configuration and facilities.





## Class I Multi-Use Path

Class I Bikeways are also known as multi-use paths. Class I bikeways provide bicycle travel on an all-weather surface within a right-of-way that is for exclusive use by pedestrians, bicyclists and other non-motorized modes. Class I bikeway surface must be compliant with provisions of the Americans with Disabilities Act (ADA). These bikeways are intended to provide superior safety, connectivity, and recreational opportunities as compared to facilities that share right-of-way with motor vehicles. (Source: The 2010 Sonoma County Bicycle and Pedestrian Plan)



(Source: [www.napabike.org](http://www.napabike.org))



(Source: [www.mtdemocrat.com/news/northside-trail-opened/](http://www.mtdemocrat.com/news/northside-trail-opened/))

Figure 8-1



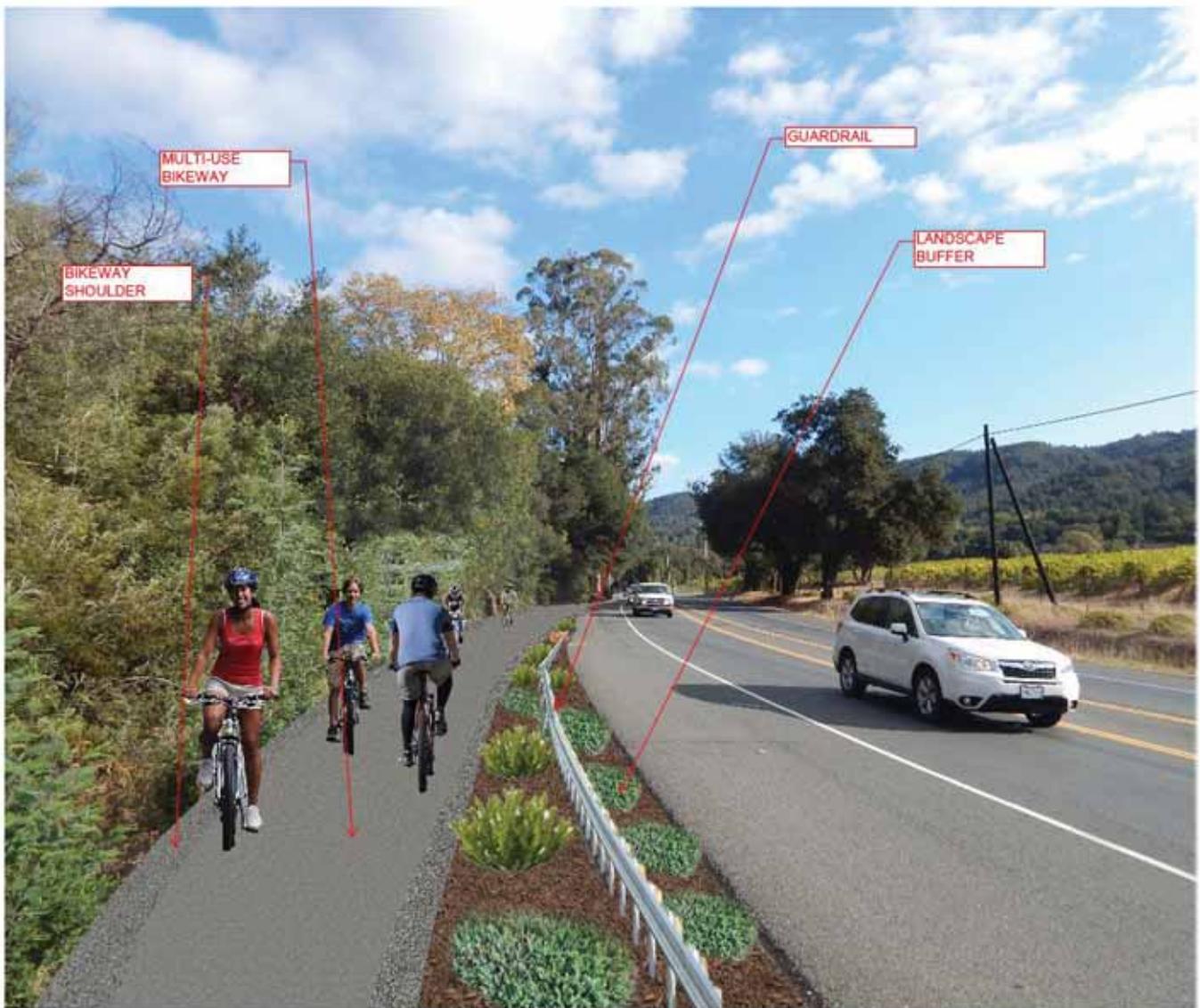


Figure 8-2

**Class I Path With Barrier**  
SONOMA VALLEY TRAIL FEASIBILITY STUDY



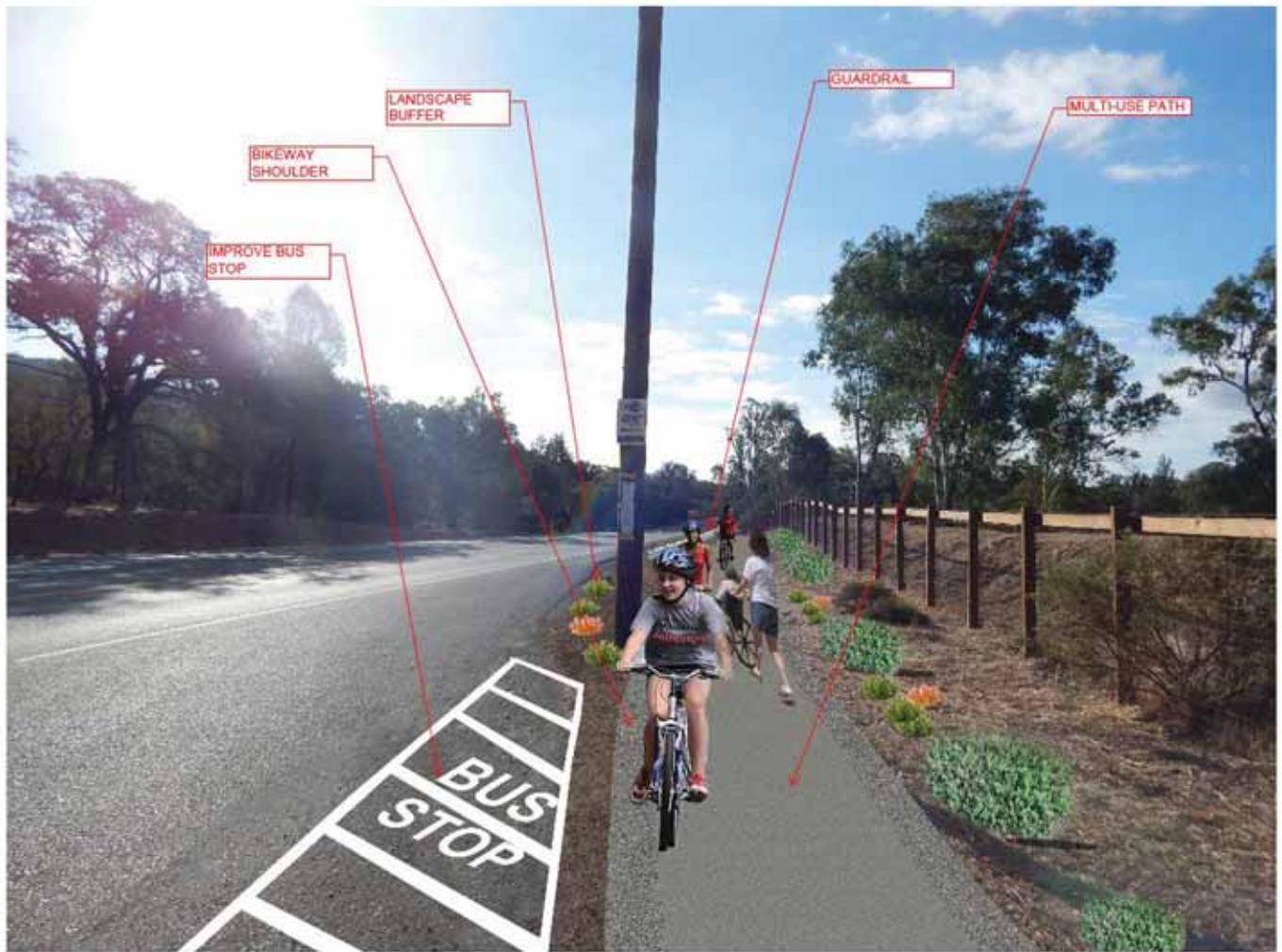


Figure 8-3

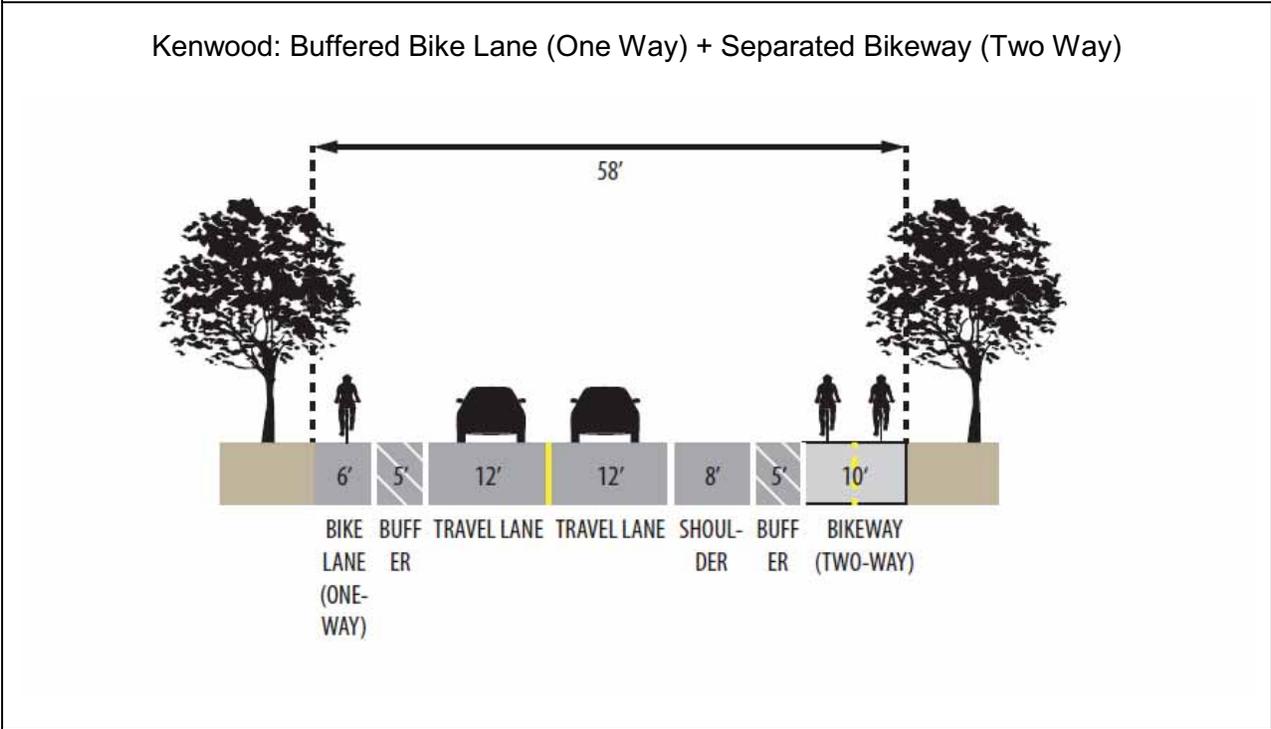
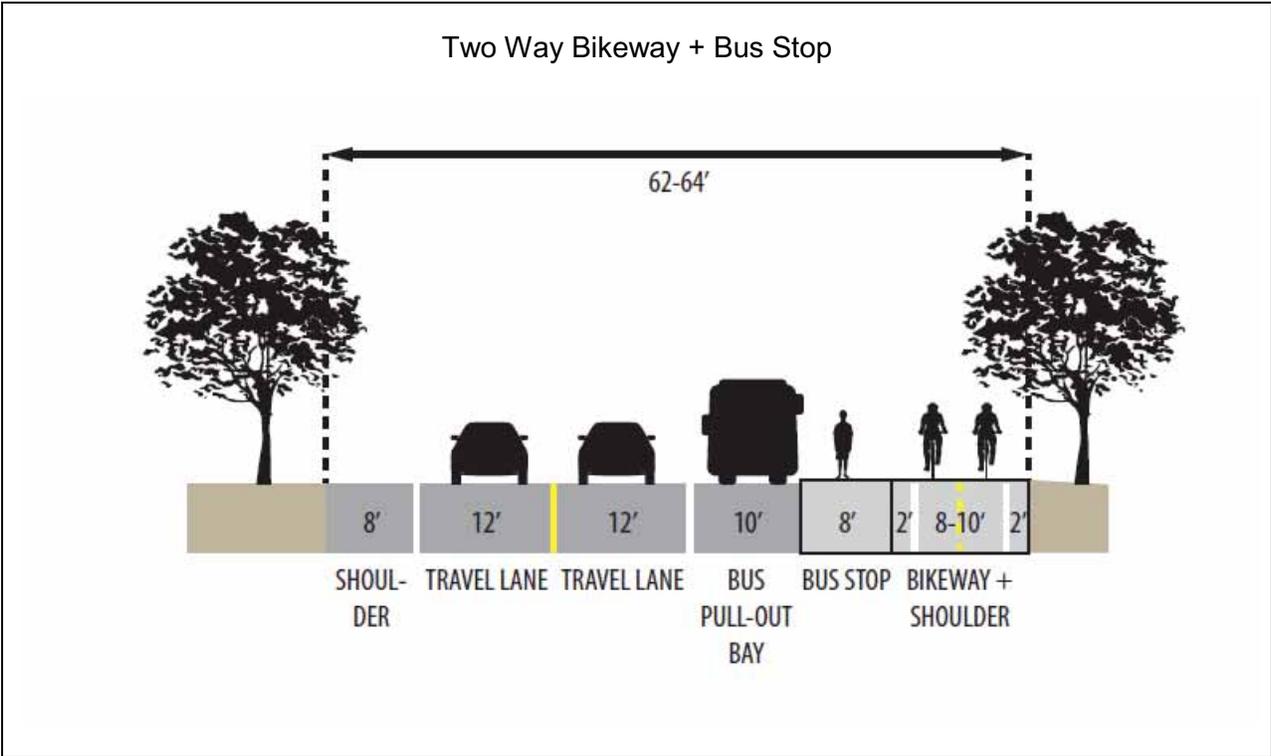




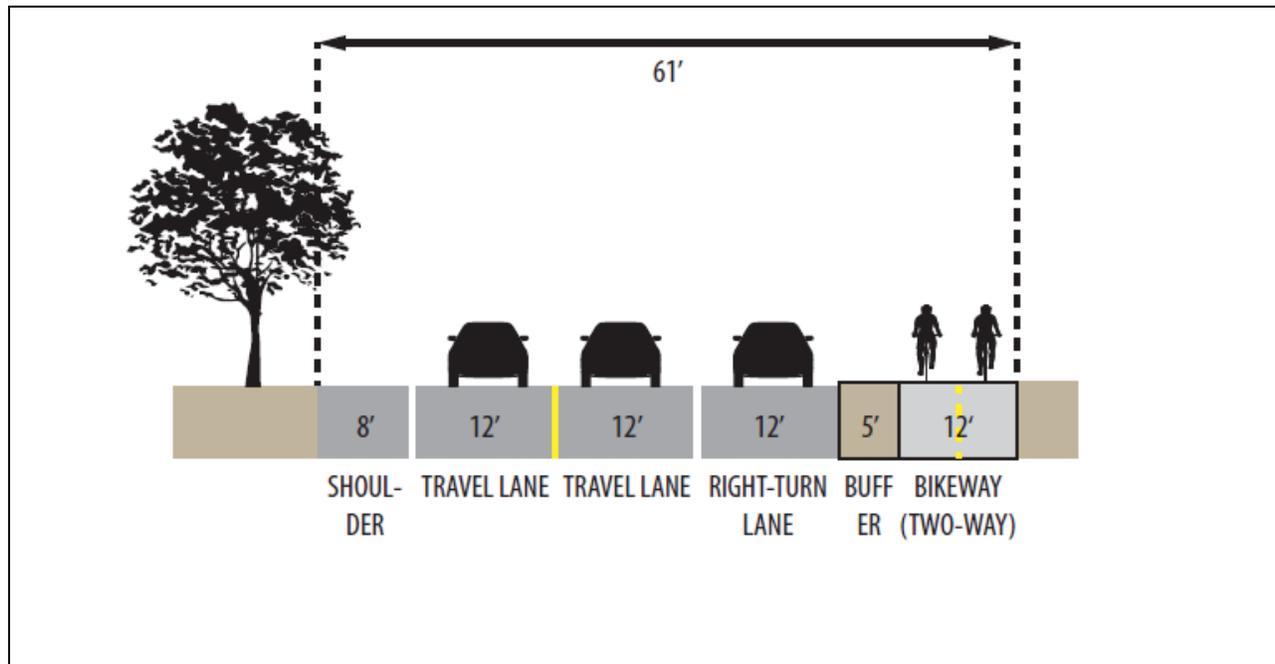
Figure 8-4



**Shared Agricultural Use**  
SONOMA VALLEY TRAIL FEASIBILITY STUDY



Agua Caliente: Separated Bikeway



### **Trail Width**

Most of the trail would be located in the County and therefore would be designed consistent with the standards employed by Sonoma County Regional Parks, and in compliance with Caltrans standards. Trail tread widths, horizontal and vertical clearances, and maximum gradients for each trail type is identified, as well as sight distance and surfacing options. It also provides guidance on trail amenities, including tree planting, sign posts, fencing, and erosion control, all of which are applicable for trail implementation.

Sonoma Valley trail segments would generally be multi-use, separated paths, with accommodations for equestrian use outside the City limits. This would include a 10 foot (minimum) paved or stabilized trail section and a separate facility for horses. To accommodate site conditions and separated use, a minimum acquisition of 25 feet ROW is recommended, with a larger ROW where equestrian use is anticipated. Segments of the trail that are located on existing roads, such as Highway 12, would utilize standard signs and/or striping to delineate areas for bicycle use.



### **Trail Surface**

The trail must have a firm and stable surface to be ADA compliant. In general, to accommodate bicycles and occasional motorized use by vehicles, the trail surface would be paved asphalt or concrete. In some



areas, a permeable trail surface such as stabilized quarry fines or decomposed granite is appropriate to blend in with the natural setting. Paving designs should be selected that provide permeability, where appropriate, and fit with the rural setting. In some locations, it will be appropriate to remain as “natural” as feasible, and, as noted above, could be constructed as a permeable path with cemented quarry fines over aggregate base or other stabilizer. Trail sections along ramps, bridges, rail crossings and boardwalk approaches, and any trails that will be routinely utilized by motorized vehicles for access and maintenance should be paved. The trail should generally be elevated slightly above existing grade, with a cross slope of 2% to provide drainage and trail compaction.

### ***Fencing and Barriers***

There are three primary fencing or barrier types that may be needed to implement the Sonoma Valley Trail:

- Fencing on portions of the trail that are not directly adjacent to roadways, to separate adjacent land uses from trail users, and to define the trail corridor;
- Barriers, such as fencing or walls that separate the trail user from vehicular traffic where the trail must be located within Caltrans ROW; and
- Gates and Bollards, where needed to preclude vehicular entry or to allow access to adjacent lands.

**Fencing.** Fencing, if needed, along portions of the Trail that are not adjacent to roadways would generally consist of wire strand field fencing. Farm field fencing is appropriate in agricultural operations to preclude trail users from entering farm fields.



Split rail fence, such as fencing installed at Los Guilicos, may also be used to define the trail path.

At trailheads, stone monuments or other thematic fencing design could be utilized to provide a visual cue for public access and to reflect the scenic setting. This would be appropriate at entry locations such as trailheads and at





key intersections. The design of fencing should be in keeping with the historic character and scenic nature of the area.

**Barriers.** Highway 12 is a Caltrans facility. According to the Caltrans Highway Design Manual, a physical barrier is required when a Class I Bike Path is closer than five feet from the edge of the shoulder. Suitable barriers include a chain link fence or dense shrubs. Low barriers next to a Highway are not recommended because bicyclists could fall over them and into oncoming automobile traffic.

Where there is danger of motorists encroaching into the trail (CRZ - clear recovery zone), a positive barrier (such as concrete barrier or steel guardrail) is required. The primary function of guardrail is to shield fixed objects that cannot be removed from the roadway's Clear Recovery Zone, or to shield embankment drop-offs. There are strict guidelines regarding guardrail installation. Considered as fixed objects themselves, guardrails should not be installed solely as a fence/barrier to separate motorized and non-motorized traffic.

Where anticipated road speeds are greater than 45MPH, the CRZ is a minimum of 20 feet wide. Where there is sufficient right of way, alignments should first be explored that are outside of the clear recovery zone. This would ensure that positive barriers are not needed since they can also present a collision potential for both motorists and bicyclists. Trail alignments outside of the clear recovery zone also provide lower noise levels, and likely, a more enjoyable trail experience.

**Gates and Bollards.** Posts at trail intersections and entrances may be necessary in many areas, to keep vehicles from entering. Posts should be designed to be easily moveable by emergency vehicles, such as bollards or a pipe gate and bollard, but consistent with the rural setting. Pipe gates are appropriate at locations where vehicular access will be needed, and would need to be designed to permit wheelchair access. Typically, posts and bollards should only be used if there is a history of motor vehicle encroachment, and are recommended only where such encroachment is likely. Other designs, such as bifurcation of trail with appropriately landscaped median at intersections, should be considered, as they create less clipping hazard, especially for bikes with trailers.





## Bridges and Crossings

Bridges, boardwalks or drainage structures (culverts) would be needed where the trail crosses creeks, drainages or other floodplain areas. As discussed in the Biological Resources section, creeks and drainages within the Sonoma Valley area part of a network of waterways that drain into San Francisco Bay. In addition to design that does not create a visual barrier or affect aesthetics, bridges and crossings must be designed and installed to avoid potential biological and hydrologic impacts, including clearspan structures where feasible, avoiding displacement or alteration of floodways, and inclusion of avoidance



and minimization measures to protect sensitive wildlife, both during construction and in long term use.

Improvements to existing Caltrans bridges and crossings along Highway 12 should incorporate bicycle and pedestrian facilities as part of any repair or retrofit work.

If new Highway 12 facilities are constructed that will bypass existing historic bridges and structures, these structures should be evaluated for potential conversion to separated bicycle and pedestrian facilities.

## 8.6 Signage, Wayfinding and Interpretive Elements



The trail will be part of a continuous trail network linking trails within the City of Sonoma and Schellville with the Greenway trails in Santa Rosa, Rodota Trail and beyond.

Signage and way-finding are critical to assist trail users for use and enjoyment of the Trail, as well as to provide a guide to local destinations and transit. A common trail signage design scheme should be utilized throughout the corridor.

Multi-use trail signing and markings should follow the guidelines as developed by Caltrans and the Manual on Uniform Traffic Control Devices. This includes advisory, warning, directional, and informational signs for bicyclists, pedestrians, and other users. Striping, marking, and signing plans will be subject to approval by the implementing agency.

In addition, wayfinding elements should reflect the rural character of the area, and may emulate the rustic vernacular



used for winery wayfinding.

Identification signs for the Trail should be placed at all staging areas, trailheads, junctions, and special features:

- Signage along major inland connecting trails should direct users to the Trail.
- The location of staging areas should be indicated from Highways and major roadways.
- Milepost and distance markers to provide context for trail location and destination information, and to assist emergency responders when locating trail users.
- Signs should use international symbols as much as possible.
- ADA-compliant portions of the trail should be clearly indicated.
- Wayfinding signs should be consistent throughout the trail, and sign elements should be grouped and designed to minimize visual intrusion. Sign elements may include acknowledgment of more than one agency (to reflect multiple stakeholders and project partners), as well as directional and informational elements. Signage and design standards that might apply include:
  - Sonoma County Regional Parks
  - Bay Area Ridge Trail
  - City of Santa Rosa
  - Caltrans
  - Local Project Sponsors



## Trail Etiquette

In accordance with proposed accessibility regulations, it is recommended that trail signs provide information about the trails' running slope, width, cross slope, and other characteristics to enable people to make informed decisions about using trails based on the characteristics of the trails. Signs should include GPS coordinates to facilitate emergency access. Trail use regulations such as keeping dogs on leash, no entry into sensitive areas, and other programs to protect sensitive habitat or resources would also be placed at trail access locations.



Signage that encourages appropriate behavior adjacent to agricultural lands will also be essential for successful trail operations. Trail signage can be provided in addition to buffers or fencing where needed to educate trail users about agricultural use. In Napa County, the



[www.agrespect.org](http://www.agrespect.org) program evolved following the adoption of the 2012 Napa Countywide Bicycle Plan, with a signage program and guidelines to encourage appropriate visitor use adjacent to agricultural lands. The program is a partnership of local parks and transit agencies, trail advocacy groups and growers and vintners. A similar cooperative effort is recommended to address trail use and management issues in Sonoma Valley.

### **Traffic Signs**

The Manual of Uniform Traffic Control Devices (MUTCD) defines the standards to install and maintain traffic control devices on all public streets, Highways, bikeways, and private roads open to public traffic. The MUTCD, and adopted in California by Caltrans, contains standards for all traffic control devices, including road markings, Highway signs, and traffic signals.

Traffic control devices are defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency or official having jurisdiction, or, in the case of a private road, by authority of the private owner or private official having jurisdiction.



In general, all signs should be located two to four feet from the edge of the paved surface, have a minimum vertical clearance of 8.5 feet when located above the trail surface and be a minimum of four feet above the trail surface when located on the side of the trail. All signs should be oriented for clarity to the user.

## **8.7 Street/Trail Crossings**

Where possible, the trail should be located to minimize street crossings. Crossings of major streets should be located at signalized intersections, or grade separated. Where there is sufficient clearance under existing bridges, opportunities for provision of a crossing for human use should be explored, provided that resource protection is incorporated.

Trail segments in urban settings within Santa Rosa, Oakmont, Kenwood and Agua Caliente should include pedestrian safety features such as extended curbs, pedestrian signals, refuge medians and decorative pavement to delineate the trail and provide a visual cue to safely guide trail users.



## 8.8 Trailhead Staging Areas

Facilities such as parking, restrooms, overlooks, benches, picnic facilities and other features will be needed along the trail to serve visitor use. The facilities provided at each location vary according to expected level of use and duration. Currently, existing public facilities that could be utilized for staging areas that could be utilized to serve Sonoma Valley trail users are very limited:

- Kenwood Plaza Park, Kenwood
- Shaw Park, Kenwood
- Sonoma Valley Regional Park

Additional trailhead and staging facilities could potentially be provided at the following locations. Improved crossing facilities may be needed if the trail facilities are located opposite the staging area.



- Caltrans property at Melita Road (connection to Santa Rosa Greenway)
- Sonoma County/Los Guilicos facilities at Pythian Road
- County right of way at Adobe Canyon Road (connection to Sugarloaf Ridge State Park)
- Caltrans parcel (between Green Street and Randolph Avenue) in Kenwood
- Dunbar Road vicinity
- Agua Caliente vicinity

Potential staging area improvements could include parking, benches, waste disposal, drinking fountain, interpretive elements and restrooms. These facilities are limited in the study area, and could be incorporated into any new facilities (including minimal parking improvements) to be provided at existing parks, public facilities and other key locations.



## 8.9 Trail Operations and Maintenance

The Sonoma Valley Trail is intended to facilitate bicycle, pedestrian and equestrian use between Agua Caliente and Santa Rosa.

Dog use along the trail would be consistent with policy of the trail management entity (such as City of Santa Rosa or Sonoma County Regional Parks). It is anticipated that some segments of the trail may not be suitable for users with pets, while other areas could accommodate pet use.



## **Liability**

Two California laws provide broad liability protection to property owners who allow public access for recreational purposes: California Recreational Use Statute and California Recreational Trails Act. These laws limit liability to private property owners. In addition, the cities or County Parks (as trail manager) would likely enter into agreements or secure ownership which would formalize trail use and define liability/obligations with property owners and UPRR, if applicable.



Virtually all of the trail segments would be constructed, operated, and maintained by the local government entity in which it occurs, by agreement with land owners. County Parks would likely serve as lead agency for environmental review, project permitting, design, and construction oversight. Any trail segment within the Caltrans right-of-way would likely be constructed and operated under their procedures for an encroachment permit, or completed as part of a roadway improvement or complete streets project.

Acquisition of trail easements or fee title for land that may need to be purchased for construction of trails can be one of the primary costs of project implementation. Since much of the study area is located on private lands, securing agreements or acquisition of lands for trail implementation is a key to project success.

Mechanisms for trail agreements include:

- Purchase in fee title, trail dedication
- Easement
- License Agreement
- Memorandum of Understanding

Some right of way acquisition has occurred in the form of trail dedication as a requirement of a larger project such as the Sonoma Springs Mixed-Use Development. It is critical that such dedications occur within feasible, buildable easements, and within a meaningful time frame.

Another possibility that has occurred in other areas is where individual property owners may voluntarily agree to a trail easement, because of their support of a trail project based on its merits, and value of the small amount of tax deduction that is available. Sonoma County Parks has some easements within the study area for future trails.



### ***Sensitive Habitat Areas***

Fencing may be needed adjacent to sensitive habitat areas to preclude trail users and domestic animals from the area. This can be simple as 3 or 4 strand wire fencing, or welded wire mesh with wood posts. Top rails should be avoided where possible to minimize perching by raptors. Fencing adjacent to Caltrans ROW would need to meet Caltrans standards, unless a regulatory exception is approved.

### ***Geotechnical Considerations***

Slope stability, landslide, erosion potential, seismic design considerations, poor soil conditions and trail drainage issues will need to be carefully evaluated during the design of each trail segment. In general, the trail should be out-sloped to minimize slope disturbance, however, in some areas of steep slopes and less stable terrain, it may be necessary to in-slope the trail and provide drainage swales.

- **Vehicular Load Rating for Emergency Access.** In general, where the trail is located along a road, design for emergency access is not needed. However, trail segments should generally be designed for access by emergency vehicles, with a minimum weight capacity of 10,000 pounds (H-10 load). Heavier load ratings (H-20) may be required by local fire and emergency response units, depending on availability of access and location. This may be desirable in locations where the trail will also provide fire access to landowners.
- **Flood Prone Areas.** Trails located adjacent to areas that may be subject to periodic inundation may need to be reinforced with structural geosynthetics such as geocells to provide a stable trail surface and improve year-round accessibility. The need for structural support will be determined through additional engineering analysis as part of the trail design. Where trails are proposed to cross over such areas, they will require special structures and treatment, such as over-excavation and placement of engineering geotextile such as Geocell, and import of thick section of granular aggregate base. The wettest of these areas will likely require the use of a boardwalk structure supported on short piles or another anchor system.
- **Slope Instability and Erosion Control.** Precise trail siting will be needed to avoid and/or address potentially unstable areas. If the trail will cross areas of slope instability, these areas must be carefully evaluated to ensure that trail safety is maintained, and that further degradation of slope conditions does not occur. Although Sonoma Valley is relatively flat, retaining walls may be needed in some areas, especially where right of way is constrained. These structures can be expensive, and careful placement of site features will be critical. Control of erosion associated with trail construction (to ensure that sediment input into Sonoma Creek is minimized) will also be a critical trail design and implementation issue.
- **Pavement Design.** Depending on soil conditions and pavement design needs, the use of geotextiles and a permeable trail surface, such as stabilized decomposed granite (DG) or stabilized quarry fines (QF), should be considered. A detailed geotechnical assessment should be prepared to identify the appropriate trail surface, thickness of materials and compaction requirements of the pavement.



## ***Safety and Security Issues***

Operation and maintenance of the trail system is an important component of overall trail implementation. Sonoma County Regional Parks operates the West County and Joe Rodota Trail in West County, which bisects multiple jurisdictions. County Parks may be the lead management entity for this trail project, and would provide policing, management and coordination for trail related issues.

Protocols that include law enforcement, mapping of trails, wayfinding and, where appropriate, 911 emergency phones in remote areas can all be included in trail implementation projects. Other strategies include:

- User Education Program for safe trail behavior and conflict prevention.
- Conduct inspections for safety hazards, needed repairs and outreach with neighboring property owners, residents and businesses
- Post and enforce trail rules
- Perform trail maintenance and vegetation management for fire safety and sight distance issues.



It is also expected that ongoing management of the trail route would utilize Integrated Pest Management (IPM) practices to manage pest populations and for vegetation management. This includes ecologically compatible practices and treatment strategies for the control of plant and animal pests, as well as fire management activities to reduce or maintain wildland fuels at acceptable levels.



## 9 IMPLEMENTATION

Implementation of a continuous trail within the Sonoma Valley area, and beyond will be a multi-step process, completed as a number of individual phases or construction of separate segments that will link together over time. It is likely that the segments using available or newly acquired public ROW would be completed by County Parks or County Public Works constructing the project in unincorporated areas. In such cases, where Caltrans ROW is involved, Caltrans could potentially complete some of the work associated with other transportation projects, where funding and the transportation project approval process permit. The trail segments involving private lands are most commonly completed by the property owner, often as a condition of a development agreement or use permit.



### 9.1 Next Steps

This Study provides a relatively general evaluation and analysis of potential trail alignments within Sonoma Valley. Construction of actual trail projects will require additional site-specific planning, environmental review, and design development, with a number of subsequent steps. The actual next steps for any specific project will vary in terms of level of analysis, and the time involved completing them. The following typical steps are required for construction of a public trail project requiring detailed planning, design, environmental review and project permitting prior to construction.

- Review and/or approval of this Feasibility Study by lead agencies and project stakeholders.
- Identify/confirm priority projects, secure funding and program funds for project implementation.
- Continue discussions with stakeholders where easements or right-of-way are needed. Where appropriate, obtain Agreements in Principal or Memorandums of Understanding for right-of-way as individual projects or phases move forward towards construction.



- Prepare Preliminary Engineering Design Documents, with greater focus on phases identified for initial design and construction. Update cost estimates and more clearly identify ROW needed.
- Complete environmental assessment process (CEQA/NEPA, as appropriate). Some areas (within existing road rights of way) may be categorically exempt.
- Obtain regulatory permit approvals.
- Negotiate and complete ROW agreements, including easements, and trail use or licensing agreements.
- Prepare detailed engineering design plans and construction documents.
- Publically bid the project's Construction Plans.
- Construction, including construction oversight of the approved plans by a qualified Contractor to ensure that the project plans, along with all of the environmental mitigation measures and all permit conditions, are followed and implemented as approved.

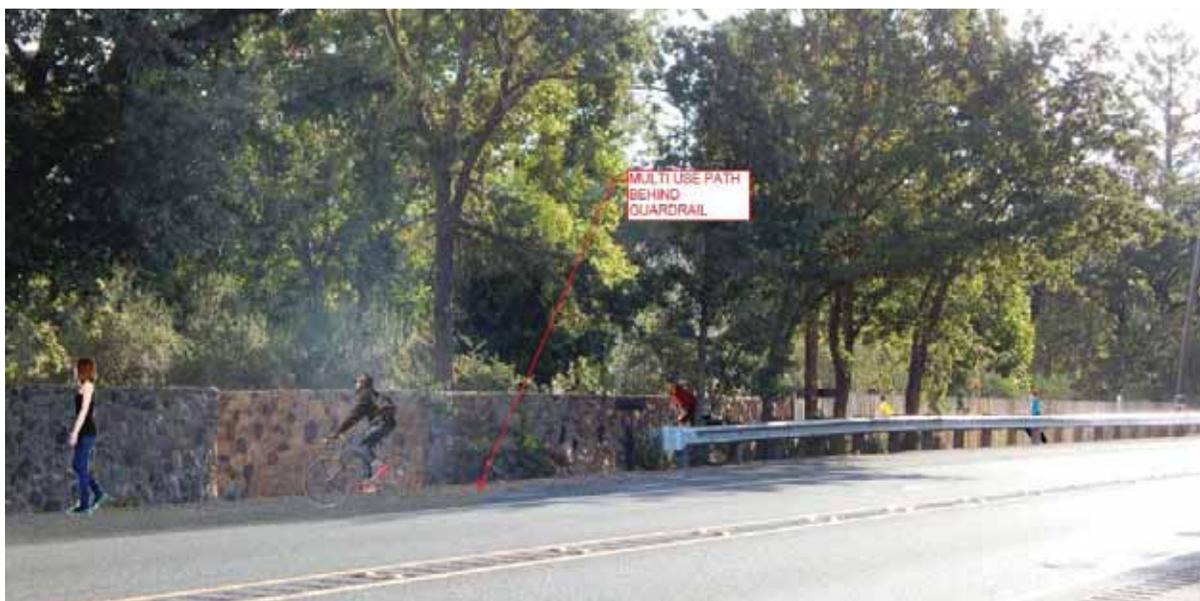
### ***Caltrans Trail Implementation***

Coordination with Caltrans has occurred throughout the study process, and will continue as projects are implemented to ensure that Caltrans capital projects, maintenance activities and operations meet the needs of all travel modes, including pedestrians and bicyclists, on the state Highway system.

### ***Encroachment and Design within Caltrans Right of Way***

Caltrans has established procedures for projects that are completed within state right of way (ROW), or completed with funds administered under their authority as part of the Local Assistance process. It is anticipated that some segments of the trail may be completed under this program.

Facilities that are located within Caltrans ROW must also obtain an encroachment permit.





## 9.2 Priorities and Phasing

It is not presently possible to determine the timing of construction of all of the phases of the Trail. Project priorities and phasing will be driven in large part by the availability of funds, and in some cases the ability to implement trail projects in conjunction with other related projects. Trail construction phasing will be influenced by the relative complexity of projects, difficulty of environmental and permitting issues, problems with right-of-way acquisition, the interest of the public agency stakeholders in building trails within their jurisdictions, and public demand. Presented here is an approach to project phasing for stakeholder and public review and to facilitate further discussion.

This Feasibility Study is intended to facilitate the preparation of grant applications by providing draft trail alignment maps, and baseline environmental information (including opportunities and constraints), descriptions of trail alignments and preliminary costs for the design and construction of the trail segments. This would allow all of the interested stakeholders and public agency landowners within the trail corridor the flexibility and ability to actively pursue projects as needs arise and opportunities for trail construction present themselves.

### *Phase I Priority Projects*

<b>Santa Rosa to Oakmont Drive</b>		
		
<p>Trail connections along the SCWA lands adjacent to Highway 12 provide an opportunity to connect residents in the Oakmont area with Santa Rosa trail system. Planned and proposed development projects within Santa Rosa may increase the population of trail users, and implementation of trail segments associated with these projects will facilitate trail connections.</p>		



**Agua Caliente to Sonoma Valley Regional Park**



Providing trail connections from the densely populated Springs area to the parks and open space lands of Sonoma Developmental Center and Sonoma Valley Regional Park is important for community health and enjoyment. This segment also would provide an opportunity for Safe Routes to School connections for students who attend Dunbar School. This segment would enhance connections to the Sonoma trail system, with opportunities for visitors to safely explore Sonoma Valley car-free.

**Kenwood**



As a population center as well as destination with many visitor serving facilities, Kenwood lacks continuous pedestrian and bicycle facilities. Implementation of trail improvements in this area would facilitate multiuse connections as well as provide opportunities for improved circulation, such as trailhead parking, emergency vehicle access, and improved connections to transit and schools.



## Phase II Priority Projects

### Oakmont Drive to Pythian Road



The trail segment south of Oakmont to Pythian represents an opportunity to construct a significant segment of the trail on public lands and away from Highway 12. This segment would facilitate connections to population centers at Oakmont and Santa Rosa, as well as improve connections to the Bay Area Ridge Trail segment along Pythian Road.

Challenges to implementation include determining right of way availability along the Highway. Integrating the trail into planned and proposed development projects in this segment is recommended.

### Pythian Road to Kenwood



Completing the connection between Kenwood and Santa Rosa is a key element to a regional trail system. Implementation of this segment is challenging due to existing development, resource needs along creeks, right of way availability and encroachment.

Integrating the trail into planned and proposed development projects in this segment is recommended.



### Sonoma Valley Regional Park to Kenwood



A continuous Sonoma Valley Trail will be complete when this segment is implemented. This segment is one of the most challenging due to existing land use/encroachment, right of way availability and resources along the Highway. This segment would facilitate connections to cross valley and park connections along the Mayacamas ridge.

Integrating the trail into planned and proposed development projects in this segment is recommended.

### 9.3 Cost Estimates by Segment

Planning level construction cost estimates were developed for each of the feasible trail segments, adapted from a methodology used to estimate costs for completion of the Bay Trail (*The San Francisco Bay Trail Project Gap Analysis Study, 2005*). The cost analysis, including a total project cost of the preferred trail alignment of about **\$24 million** for the 13.1-mile trail between the City of Santa Rosa and Agua Caliente is based on typical costs for similar constructed trail projects, since preliminary engineering design information (including grading, right of way, scaled cross sections, etc.) are not available at the feasibility study level. As explained subsequently, the total costs also include design, environmental review, and construction administration. Trail construction costs, exclusive of design and construction administration costs average about **\$1.4 million** per mile of trail.

#### TRAIL CONSTRUCTION COST GROUPS

Costs are divided into generalized groupings associated with expected level of difficulty for permitting, environmental review and construction.

Three types of trail construction scenarios were identified for cost estimation purposes:

1. A completely new, separated trail would need to be constructed, in some cases adjacent to a stream or through open space areas (such as SCWA lands, Sonoma Valley Regional Park, Los



Guillicos, or Sonoma Developmental Center fire road improvements). Additional trail components may include:

- a. Trail grading and paving
  - b. Retaining walls
  - c. Bridge or boardwalk
  - d. Fence
  - e. Habitat restoration
  - f. Signs, interpretive displays, benches
  - g. Paved ramps or access points
2. Trail is adjacent to the existing street, roadway, or pathway in a mostly urban corridor but shoulder widening and/or a new closely adjacent and parallel path needs to be created to accommodate the Sonoma Valley Trail, with minor shoulder widening, drainage and paving. This will be the most common trail type for the Sonoma Valley Trail, and may include additional features such as:
- a. Positive barrier such as guardrail between road and path
  - b. Bridge or boardwalk
  - c. Retaining wall
  - d. Fence
  - e. Adjacent road/lane modification, such as shoulder widening
  - f. Landscaping
  - g. Signs or interpretive displays
  - h. Intersection improvements, such as pedestrian curb ramps, signal modifications, sidewalks or other safety features. Drainage-way modifications, such as under-grounding, are provided as a separate cost line item.
3. Trail follows an existing street or sidewalk, and only minor improvement work such as pavement repair, signage and striping is needed (Agua Caliente area and some portions within Santa Rosa).

Costs for new trail construction not immediately adjacent to a street or roadway, such as through an open field or park, including items for grading, drainage, paving, erosion control and slope treatment, were grouped into four groups of construction difficulty. Significant factors used to determine cost and construction difficulty include cross slope steepness and the presence of unstable slopes and erosive soil conditions; proximity to creeks, drainages and swales, existing infrastructure or utilities that may require relocation; and trees or habitat to be avoided.

**A:** Trail construction would occur on generally flat to gently sloping terrain (<05%), where there are no expected significant conflicts with drainage, habitat or utilities/infrastructure.



- B:** Trail construction would occur where there are gentle cross slopes (05-15%) and minor drainage, habitat or utilities/infrastructure conflicts, and soil erosion and slope instability would be minor problems.
- C:** Trail construction would occur on moderate slopes (15-30%) with increasingly challenging erosion control and slope grading problems, but no active landslides are present. Moderate conflicts with trees, habitat, utilities/infrastructure and other challenges may exist. Trail construction may require some slope stabilization, erosion control and minor lengths of short retaining walls.
- D:** Trail construction would be increasingly challenging, with anticipated significant issues associated with steep side slopes (>30%), high erosion hazards and/or slope instability due to potential landslide hazards. Some areas of hard bedrock may also be encountered. Typically trail drainage, more extensive retaining walls or other methods of slope treatment and stabilization and erosion control are required than for Group C, and slope reconstruction and stabilization in areas of erosive soils, landslide hazards or hard bedrock areas would be required elements of trail construction in areas predominated by Group D conditions. Extensive conflicts with native trees, habitat, utilities/infrastructure and other challenges may also exist in Group D.

Utility relocation, right of way (ROW) and property acquisition costs, traffic control, access and the availability of mobilization and staging areas, sources of fill and excess cut soil disposal and environmental mitigation needs can all be significant parts of total construction costs, but are typically not specifically included as separate line items in cost estimating at this level of project feasibility evaluation and planning; they are included as part of the overall grading and paving cost allowance. In terms of trail alignments on private property, for feasibility study cost analysis purposes, it is assumed that all trail facilities will be on public lands or within public right of way, and where the trail alignment is proposed for private property, the right of way or easement for trail construction is provided associated with a use permit or development agreement, or because it is in the interests of the private property owner to provide the right of way.

The basis of the cost assumptions were for constructing a multi-purpose paved 10-foot-wide trail through variably sloping and oak wooded terrain (essentially a single lane rural country road, which could also provide emergency access for rural property owners).

Mobilization, traffic control, clearing and grubbing, grading, minor drainage structures such as culverts, sub-base preparation, asphalt concrete paving, and signage and trail furnishings were all lumped together into one overall component (grading and paving), while fencing was identified as another distinct cost associated with a multi-use trail project. Bridges and boardwalks were also separated out for cost accounting. These represent the bulk of the trail construction costs, with the grading, slope work and drainage and paving having the highest contribution to the overall trail construction cost



## PRELIMINARY CONSTRUCTION COSTS- PREFERRED ALIGNMENT

Trail costs are summarized in **Table 9-1**, outlining preliminary project costs by segment (length measured in lineal feet). A detailed preliminary costs are provided in Appendix D. Segments considered infeasible were not evaluated. These costs include Construction, a 15% Contingency, an additional 17% for survey, Right of Way determination, planning, engineering, and environmental review and permitting, and a 12 % Construction Administration and Management Fee.

**Table 9-1: Preliminary Construction Costs**

PRELIMINARY COST ESTIMATE - PREFERRED ALIGNMENT		
Segment	Length (LF)	Construction Cost
1W	10,300	\$1,966,000
2E	8,300	\$1,667,000
3E	12,500	\$3,998,000
4E	9,700	\$2,184,000
5E	9,500	\$2,002,000
6W	12,200	\$2,519,500
7W	6,700	\$1,882,500
<b>Subtotal</b>		<b>\$16,219,000</b>
<b>Subtotal Plus 15% Contingency</b>		<b>\$18,651,850</b>
<b>17% Planning, Engineering &amp; Environmental</b>		\$3,170,815
<b>12% Construction Administration</b>		\$2,238,222
<b>TOTAL COST</b>		<b>\$24,060,887</b>
PRELIMINARY COST ESTIMATE - ALTERNATE SEGMENTS		
Segment	Length (LF)	Construction Cost
1W Alt.	10,800	\$2,024,000
3W	12,700	\$1,535,000
4W	9,800	\$3,573,000
5W	9,600	\$2,504,000
6E	12,200	\$2,722,000

### 9.4 Summary of Transportation Funding Opportunities

This section provides a summary of current funding opportunities related to trails, and matches funding opportunities to the project implementation steps in the Implementation Plan. The trail projects (segments) will be matched to potential funding programs, and the specific program criteria. In some cases, projects may be selected or organized to meet grant program funding criteria, or projects may be



jointly implemented by project partners such as the Bay Area Ridge Trail Council, Santa Rosa Greenway, Sonoma County Trails Council or others.

### ***Understanding Transportation Funding***

Approximately every six years, the U.S. Congress adopts a surface transportation act — Congress’s authorization to spend tax dollars on highways, streets, roads, transit and other transportation related projects throughout the U.S. The most recent surface transportation act is titled “Moving Ahead for Progress in the 21st Century” (MAP-21). The legislation was signed into law on July 6, 2012. MAP-21 funding is allocated to states based on federal formulas. The Federal formulas allocate a portion of each state’s funds to specific surface transportation programs such as transit, congestion mitigation, and highways; while other portions of these funds are allocated to the states for use in discretionary programs. In California, these funds are generally administered by Caltrans or the Resources Agency, although most programs are then distributed through metropolitan planning organizations (MPOs) such as the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). The regional government agencies, which vary by location within the State, administer the funding of local projects. The majority of the funding programs established in the legislation are for transportation purposes, as opposed to recreation-only, with an emphasis on reducing auto trips and traffic congestion, improving traffic safety, developing intermodal transportation systems, and reducing pollutants and emissions produced by transportation.

Bicycle, pedestrian, trail (recreational trails), and school safety improvement projects may be funded by a variety of federal, state, regional, and/or local funding programs. Federal and state programs have continued to acknowledge the importance of these improvements with increased flexibility in the major funding programs, along with the development of dedicated programs for “active” or “non-motorized” transportation projects. Project funding may also be obtained through bond measures, special tax districts, private entities, and/or directly by a local agency’s general fund.

### ***Funding Local Transportation Projects***

To be eligible for funding, projects must meet a variety of criteria. Typically, projects must be listed in a Regional Transportation Improvement Plan (RTP). Listing in an RTP is generally achieved through local actions such as listing in a local agency’s Capital Improvement Plan (CIP), the completion and adoption of a bicycle master plan, pedestrian master plan, specific plan, project study report, feasibility study, and/or other special studies. These planning efforts serve to evaluate potential projects and demonstrate their value through the public process. The result is typically a quantification of the costs and benefits of a project (such as saved vehicle trips, safety index ratings, and/or reduced emissions), proof of public involvement and support, environmental review at the state or federal level, evaluation of project alternatives, and the identification and elimination of potential fatal flaws, or development of overriding considerations. Next, the allocation of funds typically requires a commitment of local resources. In most cases, MAP-21 programs will provide 80 to 90 percent funding of a local project, but there is a preference to leverage other moneys and demonstrate a cooperative funding approach.



## **Summary of Programs**

The following section presents a general description of funding programs that can be used to implement the projects contained in this study.

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### **FEDERAL PROGRAMS**

#### ***Moving Ahead for Progress in the 21st Century Act (MAP-21)***

In July 2012, P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law, funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014. MAP-21 is the first long-term highway authorization enacted since 2005. MAP-21 provides needed funds, and it transformed policy and the programmatic framework that guides the growth and development of the country's transportation infrastructure. MAP-21 creates a streamlined, performance-based, and multimodal program to address the challenges facing the nation's transportation system. These challenges include improving safety, maintaining infrastructure, reducing traffic congestion, improving efficiency, protecting the environment, and reducing delays in project delivery. MAP-21 builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in the 1990's.

MAP-21 replaced SAFETEA-LU with a similar amount of total funding, but significantly changed the overall number and scope of programs. For example, the number of programs has been consolidated by two-thirds. The Transportation Enhancements (TE) program has been eliminated and replaced with the Transportation Alternatives Program (TAP). The new TAP encompasses most of the previous bike, trail, pedestrian, and school safety funding mechanisms from SAFETEA-LU. Under MAP-21, states allocate 50 percent of their TAP funds to larger MPOs to run grant programs and administer funds for local projects. States can use the remaining 50 percent for TAP projects or can spend these funds on other transportation priorities.

Web Link: <https://www.fhwa.dot.gov/map21/>

#### ***Congestion Mitigation and Air Quality Improvement (CMAQ) Program***

The Federal Highway Administration in conjunction with the Federal Transit Administration administers the CMAQ program, the CMAQ program which has provided nearly \$30 billion in just under 29,000 transportation-environmental projects to State DOTs, metropolitan planning organizations, and other sponsors across the country. Funding prioritizes reduction of particulate pollution in funding programs.

Web Link: [http://www.fhwa.dot.gov/environment/air\\_quality/cmaq/](http://www.fhwa.dot.gov/environment/air_quality/cmaq/)



## ***Transportation Alternatives Program***

The Transportation Alternatives Program (TAP) authorized under Section 1122 of MAP-21 provides approximately \$72 million in funding through Caltrans for programs and projects in California defined as transportation alternatives, including on- road and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways. Under TAP, Caltrans, Metropolitan Planning Organizations (MPOs), and nonprofits are not eligible as direct grant recipients of the funds. Caltrans, MPOs, and nonprofits are eligible to partner with any eligible entity on an eligible TAP project, which has now been incorporated into the Statewide ATP Program.

Web Link: <http://www.dot.ca.gov/hq/transprog/map21.htm>

## ***National Recreational Trails Program***

The Recreational Trails Program (RTP) provides funds for recreational trails and trails-related projects. The RTP is administered at the federal level by the Federal Highway Administration (FHWA). It is administered at the state level by the California Department of Parks and Recreation (DPR). Non-motorized projects are administered by the Department's Office of Grants and Local Services (OGLS). Motorized projects are administered by the Department's Off-Highway Motor Vehicle Recreation Division. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized uses, as well as motorized uses, such as off-road vehicle (ORV) trails.

RTP funds may be used for:

- Maintenance and restoration of existing trails;
- Development and rehabilitation of trailside and trailhead facilities and trail linkages;
- Purchase and lease of trail construction and maintenance equipment;
- Construction of new trails (with restrictions for new trails on federal lands);
- Acquisition of easements or property for trails;
- State administrative costs related to this program (limited to seven percent of a State's funds); and
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds).

Eligible applicants include cities and counties, parks districts, state agencies, Federal agencies, and non-profit organizations with management responsibilities of public lands. There is no maximum or minimum limit on grant request amounts. The maximum amount of RTP funds allowed for each project is 88% of the total project cost. The applicant is responsible for obtaining a match amount that is at least



12% of the total project cost. Eligible match sources include: State funds, including State Grant funds; Local funds, including general funds and bond funds; Private funds; Donated materials and services; Value of donated land (for Acquisition projects only); and other federal funds.

The RTP non-motorized funding program will provide approximately \$1.47 million per year. MAP-21, expired September 30, 2014, with short term extensions. OGLS cannot announce a request for new applications until it can verify that a re-authorization of MAP-21 or a new authorization has been signed. The RTP non-motorized funding program will provide approximately \$1.47 million per year. The current federal RTP funding source, MAP-21, was set to expire on September 30, 2014, but continued utilizing short-term extensions. The RTP Program has subsequently been integrated into the ATP.

Web Link: [http://www.parks.ca.gov/?page\\_id=24324](http://www.parks.ca.gov/?page_id=24324)

### ***Highway Safety Improvement Program***

The Highway Safety Improvement Program (HSIP), which is administered by Caltrans, remains as one of the core federal-aid programs. HSIP funds are intended to help achieve a significant reduction in traffic fatalities and serious injuries on public roads. The Federal Program requires states to develop and implement a Strategic Highway Safety Plan (SHSP) that identifies improvement strategies to address traffic safety. Funds can be used for safety improvement projects on any public road or publicly owned bicycle or pedestrian pathway or trail. A safety improvement project corrects or improves a hazardous roadway condition, or proactively addresses highway safety problems that may include: intersection improvements; installation of rumble strips and other warning devices; elimination of roadside obstacles; railway-highway grade crossing safety; pedestrian or bicycle safety; traffic calming; improving highway signage and pavement marking; installing traffic control devices at high crash locations or priority control systems for emergency vehicles at signalized intersections, safety conscious planning and improving crash data collection and analysis, etc. Caltrans sets aside funds for construction and operational improvements on high-risk rural roads and may use the remainder of funds for bicycle and pedestrian pathways or trails and education and enforcement. Caltrans' call for projects and application deadlines vary from year to year. HSIP funds could potentially be used to improve key intersections. It should be noted that some HSIP funds are incorporated into the State ATP Program.

Web Link: <http://www.dot.ca.gov/hq/LocalPrograms/hsip.html>

### ***Transportation Investment Generating Economic Recovery (TIGER)***

Initiated by the American Recovery and Reinvestment Act (ARRA) in 2009, and continued by Congress since then, the highly-competitive Transportation Investment Generating Economic Recovery (TIGER) program is not formula-based, as are many other federal funding sources. Project sponsors apply directly to USDOT to fund major capital improvements, and the applications are evaluated using criteria relating to benefit-cost ratio, economic development, sustainability, and other performance measures. TIGER is mode-neutral: the most competitive applications for highway, transit, bicycle and pedestrian, or



port improvements are funded. Several bike-pedestrian focused applications have been awarded (including both planning and design/construction phases). Typically, TIGER calls-for-projects have both a high minimum grant amount and matching requirements that render smaller projects ineligible or financially infeasible. However, they also have made exceptions to those thresholds for projects in rural areas.

### ***Land and Water Conservation Fund***

The Land and Water Conservation Fund (LWCF) program provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. LWCF is administered by the National Parks Service and the California Department of Parks and Recreation and has been reauthorized until 2015. Cities, counties, tribes, and districts authorized to acquire, develop, operate and maintain park and recreation facilities are eligible to apply. Applicants must fund the entire project and will be reimbursed for fifty percent of costs. \$2,000,000.00 is the maximum request amount for any individual project.

Eligible project must meet two specific criteria. The first is that projects acquired or developed under the program must be primarily for recreational use and not transportation purposes, and the second is that the lead agency must guarantee to maintain the facility in perpetuity for public recreation. Applications are considered using criteria such as priority status within the State Comprehensive Outdoor Recreation Plan (SCORP). The State Department of Park and Recreation will select which projects to submit to the National Park Service (NPS) for approval. Final approval is based on the amount of funds available that year, which is determined by a population-based formula, with a 40/60 split for northern and southern California respectively.

Web Link: [http://www.parks.ca.gov/?page\\_id=21360](http://www.parks.ca.gov/?page_id=21360)

### ***Rivers, Trails and Conservation Assistance Program***

The National Park Service Rivers, Trails, and Conservation Assistance (RTCA) program supports community-led natural resource conservation and outdoor recreation projects across the nation. This program provides technical assistance via direct staff involvement to establish and restore greenways, rivers, trails, watersheds, and open space areas. The RTCA program provides planning assistance only. Projects are prioritized for assistance based upon criteria that include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation and focusing on lasting accomplishments. Federal agencies may be the lead partner only in collaboration with a non-federal partner.

Web Link: <http://www.nps.gov/orgs/rtca/index.htm>



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## STATE FUNDING PROGRAMS

### **Caltrans**

Funding for new projects for nonmotorized transportation facilities along a State highway or within its right-of-way generally falls into one of the following categories:

- Replacement of an existing major route for nonmotorized traffic that is being severed or destroyed by freeway construction (S&H Code -- Section 888)
- Provision of a nonmotorized facility along a new freeway corridor where nonmotorized facilities do not exist (S&H Code -- Section 888.2)
- Provision of a nonmotorized facility along a State highway under a Cooperative Agreement at the request of a local agency (S&H Code -- Section 887.6)
- Provision of a nonmotorized facility along a State highway based upon a finding that the traffic safety or capacity of the highway will be increased (S&H Code -- Section 887.8). The finding is made in consultation with appropriate law enforcement agencies.
- Part 3 – Specific Project Development Procedures (31-4 07/01/1999L Project Development Procedures Manual).

### **Active Transportation Program**

In September 2013, the California legislature created the Active Transportation Program (ATP) to be administered by the California Department of Transportation (Caltrans). The ATP consolidates existing federal and state transportation programs, including the **Transportation Alternatives Program (TAP)**, **Bicycle Transportation Account (BTA)**, and **State Safe Routes to School (SR2S)**, into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of Active Transportation and Special Programs. The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

- Increase the proportion of trips accomplished by biking and walking,
- Increase safety and mobility for non-motorized users,
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals,
- Enhance public health,
- Ensure that disadvantaged communities fully share in the benefits of the program, and
- Provide a broad spectrum of projects to benefit many types of active transportation users.

The ATP Program is likely to be a potential source of funding for design and construction of the Sonoma Valley Trail.

Web Link: <http://www.dot.ca.gov/hq/LocalPrograms/atp/>



### ***Statewide Transportation Improvement Program***

The Statewide Transportation Improvement Program (STIP) is a list of major transportation projects to be funded across the state over the next five years. The STIP is updated biennially by the CTC. MPOs adopt Regional Transportation Improvement Programs (RTIPs), which are then incorporated as subsets of the STIP. The Interregional Transportation Improvement Program (ITIP), which includes improvements to long-distance highway and rail corridors, is also a subset. While STIP refers to a document, it also is commonly used to refer to a funding source (also known as Regional Improvement Program funding) mostly devoted to major highway capacity expansion projects. To the extent that future STIP funds are available, they could be used to fund Highway 12 improvement projects, which, depending on their location and design, may also strategically include Sonoma Valley Trail segments.

### ***State Highway Operations Protection Program***

The State Highway Operations Protection Program (SHOPP) is a multi-year program of capital projects whose purpose is to preserve and protect the State Highway System. Funding is comprised of state and federal gas taxes. SHOPP funds capital improvements relative to maintenance, safety, and rehabilitation of state highways and bridges that do not add a new traffic lane to the system. Just over \$1 billion is allocated to SHOPP annually. Funding is based on need, so there are no set distributions by county or Caltrans district. There are no matching requirements for this program. Projects include rehabilitation, landscaping, traffic management systems, rest areas, auxiliary lanes, and safety. Caltrans Projects are “applied” for by each Caltrans District. Each project must have a completed Project Study Report (PSR) to be considered for funding. Projects are developed in fall every odd numbered year.

Web Link: <http://www.dot.ca.gov/hq/transprog/shopp.htm>

### ***Caltrans Sustainable Communities Planning Grants***

Caltrans Sustainable Communities Planning Grants are intended to promote strong and healthy communities, economic growth, and protection of our environment. These planning grants (divided into two subcategories: Strategic Partnerships and Sustainable Communities) support closer placement of jobs and housing, efficient movement of goods, community involvement in planning, safe and convenient pedestrian and bicycle mobility and access, smart or strategic land use, and commute alternatives. This program should be further explored as a potential source of funding for preparation of special focus plans that include trail segments, plans which could build on the information in this study. However, environmental documentation and preliminary engineering are not eligible for these grants.

Web Link: <http://www.dot.ca.gov/hq/tpp/grants.html>

### ***Office of Traffic Safety***

The California Office of Traffic Safety (OTS) has the mission to obtain and effectively administer traffic safety grant funds to reduce deaths, injuries and economic losses resulting from traffic related collisions



in California. OTS distributes federal funding apportioned to California under the National Highway Safety Act and MAP-21. Grants are used to mitigate traffic safety program deficiencies, expand ongoing activity, or develop a new program. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction.

OTS grants address several traffic safety priority areas including Pedestrian and Bicycle Safety. Eligible activities include programs to increase safety awareness and skills among pedestrians and bicyclists. Concepts may encompass activities such as safety programs, education, enforcement, traffic safety and bicycle rodeos, safety helmet distribution, and court diversion programs for safety helmet violators.

Web Link: <http://www.ots.ca.gov/>

### ***Environmental Enhancement and Mitigation Program***

Environmental Enhancement and Mitigation Program (EEMP) funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities, such as trails. State gasoline tax monies fund the EEMP. The EEMP program represents an opportunity to fund improvements as mitigation to highway work in the Highway 12 corridor, as well as other highway facilities in Sonoma County.

Web Link: <http://resources.ca.gov/eem/>

### ***California State Coastal Conservancy***

The California State Coastal Conservancy manages several programs that provide grant funds for coastal trails, access, and habitat restoration projects. The funding cycle for these programs is open and ongoing throughout the year. Funds are available to local government as well as non-profits. The Conservancy may be a funding source for bicycle and pedestrian facilities that improve access to Sonoma County's beaches, rivers, and creeks.

Web Link: <http://scc.ca.gov/category/grants/>

### ***Habitat Conservation Fund***

The Habitat Conservation Fund (HCF) provides \$2 million dollars annually in grants for the conservation of habitat including wildlife corridors and urban trails statewide. Eligible activities include property acquisition, design, and construction. The HCF is 50% dollar for dollar matching program. California Environmental Quality Act (CEQA) compliance is required. Urban projects should demonstrate how the project would increase the public's awareness and use of park, recreation, or wildlife areas.

Web Link: [http://www.parks.ca.gov/?page\\_id=21361](http://www.parks.ca.gov/?page_id=21361)



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## WILDLIFE AND HABITAT RESTORATION FUNDING OPPORTUNITIES

### ***Wildlife Conservation Board Public Access Program***

This program funds land acquisitions that preserves wildlife habitat or provides recreational access for hunting, fishing or other wildlife-oriented activities. Up to \$250,000 is available per project with applications accepted quarterly. Eligible projects include interpretive trails, river access and trailhead parking areas. The state must have a proprietary interest in the project. Local agencies are generally responsible for the planning and engineering phases.

Web Link: <https://www.wcb.ca.gov/FundingSources.aspx>

### ***State River Parkways Program***

This goal of this program is to provide recreational, wildlife, flood management, water quality and urban waterfront revitalization benefits to communities along river corridors. Trail-related projects are a strong component of the program, by achieving recreation, interpretation and potentially conversion of abandoned industrial lands goals. Public access is a fundamental requirement of the program.

Web Link: [http://resources.ca.gov/bonds\\_prop50riverparkway.html](http://resources.ca.gov/bonds_prop50riverparkway.html)

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## STATE WATER RESOURCES CONTROL BOARD GRANTS

### ***Federal CWA 319(h) Program***

This program is an annual federally funded nonpoint source pollution control program that is focused on controlling activities that impair beneficial uses and on limiting pollutant effects caused by those activities. States must establish priority rankings for waters on lists of impaired waters and develop action plans, known as Total Maximum Daily Loads (TMDLs), to improve water quality. Project proposals that address TMDL implementation and those that address problems in impaired waters are favored in the selection process. There is also a focus on implementing management activities that lead to reduction and/or prevention of pollutants that threaten or impair surface and ground waters.

Web Link: [http://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/319h/](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/319h/)

### ***The California Fish Passage Forum***

The California Fish Passage Forum funds project proposals for fish passage projects in California that advance the Forum's mission to protect and revitalize anadromous fish populations by restoring connectivity of freshwater habitats throughout their historic range. The program funds projects at various levels depending upon need and annual revenues. This and other sources of fish passage funding could potentially be used to mitigate for trail project impacts crossing streams with steelhead, as well as facilitate trail crossings across Highway 12 in association with bridge and creek improvement projects.



Web Link: <http://www.cafishpassageforum.org/index.cfm?content.display&pageID=112>

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## REGIONAL FUNDING PROGRAMS

### ***TDA Article 3***

Transportation Development Act (TDA) Article 3 funds are generated from State gasoline sales taxes and are returned to the source counties from which they originate to fund transportation projects. Article 3 funds provide a 2 percent set aside of the County TDA funds for bicycle and pedestrian projects. Eligible projects include right-of-way acquisition; planning, design and engineering; support programs; and construction of bicycle and pedestrian infrastructure, including retrofitting to meet ADA requirements, and related facilities. Each year the Sonoma County Board of Supervisors approves a Program of Projects for the County and requests allocation from the Metropolitan Transportation Commission (MTC).

Web Link: <http://www.mtc.ca.gov/funding/>

### ***One Bay Area Grant Program***

The five-year, \$327 million OneBayArea Grant (OBAG) Program is a funding approach administered by MTC that integrates the region's federal transportation program with California's climate law (Senate Bill 375, Steinberg, 2008) and the Sustainable Communities Strategy. Funding is targeted toward achieving local land-use and housing policies by:

- Rewarding jurisdictions that accept housing allocations through the Regional Housing Need Allocation (RHNA) process.
- Supporting the Sustainable Communities Strategy for the Bay Area by promoting transportation investments in Priority Development Areas (PDAs)
- Initiating a pilot program that will support open space preservation in Priority Conservation Areas (PCA).
- The OBAG program allows flexibility to invest in transportation categories such as Transportation for Livable Communities, bicycle and pedestrian improvements, local streets and roads preservation, and planning activities, while also providing specific funding opportunities for Safe Routes to School (SR2S) and Priority Conservation Areas.

Web link: <http://www.mtc.ca.gov/funding/onebayarea/>



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## LOCAL FUNDING PROGRAMS

### ***Direct Local Jurisdiction Funding***

Local jurisdictions can fund bicycle and pedestrian projects using a variety of sources. City or county general funds are often earmarked for non-motorized transportation projects, especially sidewalk and ADA improvements.

Future road widening and construction projects are one means of providing bike lanes and sidewalks. To ensure that roadway construction projects provide these facilities where needed, appropriate, and feasible, it is important that an effective review process is in place so that new roads meet the standards and guidelines presented in this Study.

### ***Sonoma County Transportation Authority / Measure M***

The Sonoma County Transportation Authority / Regional Climate Protection Authority (SCTA/RCPA) is the countywide planning and programming agency for transportation and coordinates climate protection activities countywide.

The SCTA, was formed as a result of legislation is the coordinating and advocacy agency for transportation funding for Sonoma County, and administers Measure M funds generated within Sonoma County through a local sales tax for specific transportation projects in the County. The SCTA partners with other agencies to improve transportation in the County, including Highway 101, local streets, transit, bicycle and pedestrian facilities.

The Regional Climate Protection Authority, RCPA, was formed through legislation in 2009 to coordinate countywide climate protection efforts among Sonoma County's nine cities and multiple county agencies. The RCPA is engaged in securing grant funding for a variety of GHG reducing efforts including energy efficiency, building retrofit and alternative transportation programs. Data collection, public information and education are significant elements of the climate protection effort.

Web Link: <http://www.sctainfo.org/>

### ***Impact Fees and Development Implementation***

As stated in Policy CT-3v of the County General Plan Circulation and Transit Element, where nexus exists, private or public development projects should plan, design, and construct bicycle and pedestrian facilities to integrate with the existing and planned bicycle and pedestrian network. This would be appropriate for any projects that generate tourism or trip generation that could be served by complementary bicycle and pedestrian facilities, including winery events, hotels, restaurants, residential projects and others. This Study can serve as a guide for the provision of facilities, and individual projects should integrate these facilities into project development documents.



Another potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site pedestrian and bikeway improvements, which will encourage residents to walk and bicycle rather than drive. In-lieu parking fees may be used to help construct new or improved bicycle parking. A clear connection between the impact fee and the mitigation project must be established.

### ***Special Taxing Districts***

Special taxing districts, such as redevelopment districts, can be good instruments to finance new infrastructure – including shared use trails and sidewalks – within specified areas. New facilities are funded by assessments placed on those that are directly benefited by the improvements rather than the general public. In a “tax increment financing (TIF) district, taxes are collected on property value increases above the base year assessed property value. This money can then be utilized for capital improvements within the district. TIFs are especially beneficial in downtown redevelopment districts. These districts are established by a petition from landowners to a local government. The districts can operate independently from the local government and some are established for single purposes, such as roadway construction.

### ***Other***

Local sales taxes, fees, and permits may be implemented, requiring a local election. Parking meter revenues may be used according to local ordinance. Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corps, which offers low-cost assistance will be effective at reducing project costs, and is encouraged in the State ATP guidelines. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right-of-way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations “adopt” a bikeway and help construct and maintain the facility.



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- [www.AmericanTrails.org](http://www.AmericanTrails.org)
- <http://www.railstotrails.org>



# APPENDIX A

## PUBLIC ENGAGEMENT

# APPENDIX A: PUBLIC ENGAGEMENT



Stakeholder Meeting #1 September 10, 2014



# SONOMA COUNTY REGIONAL PARKS

**Sonoma Valley Trail Feasibility Study  
Stakeholder Kick-off Meeting #1  
Wednesday, September 10, 2014  
10 am – 11:30 am**

## **Agenda**

1. Introductions ( 10 minutes)
2. History of the Project (25 minutes)
  - a. Review project Goals and Objectives ( 10 minutes)
  - b. Scope of Work and Timeline ( 10 minutes)
  - c. Review study area ( 5 minutes)
3. Stakeholders Discussion (25 minutes)
4. Review/discuss public outreach process (10 minutes)
5. Set next meeting date and wrap up ( 5 minutes)

- see over -

## **OPPORTUNITIES FOR PUBLIC PARTICIPATION**

### **Current Opportunities**

- Community Workshop #1: September 25, 2014
- Community Workshop #2: October 4, 2014
- Community Workshop #3: November 1, 2014
  - Written comment cards available at all 3 workshops

### **Ongoing Opportunities**

- Public can send in comments via Email or US Mail to:
  - Email: [ken.tam@sonoma-county.org](mailto:ken.tam@sonoma-county.org)
  - Written comments:  
Attn: Sonoma Valley Trail, Ken Tam  
Sonoma County Regional Parks Department  
2300 County Center Drive, #120A  
Santa Rosa, Ca 95403
- Online Community Survey in English and Spanish
- Go to the Parks Project website for more project information:
  - Current Press Releases
  - Receive automatic notices of updates – view and subscribe at:  
[http://parks.sonomacounty.ca.gov/About\\_Us/Project\\_Details/Sonoma\\_Valley\\_Trail\\_Proposed.aspx](http://parks.sonomacounty.ca.gov/About_Us/Project_Details/Sonoma_Valley_Trail_Proposed.aspx)

### **Future Opportunities**

- Parks Advisory Commission meetings
- Sonoma County Bicycle and Pedestrian Advisory Committee meetings
- Sonoma Valley Citizens Advisory Commission meetings
- Board of Supervisors meetings
- Draft Sonoma Valley Trail Feasibility Study
  - Comment period upon release of Draft study

## Sonoma Valley Trail Feasibility Study



SONOMA COUNTY REGIONAL PARKS

Stakeholder Kickoff Meeting  
September 10, 2014

## Agenda

- Introductions
- What is the Sonoma Valley Trail?
- Study Area
- Background/Goals
- Scope of Work /Timeline
- Outreach Process
- Next Steps

## Introductions

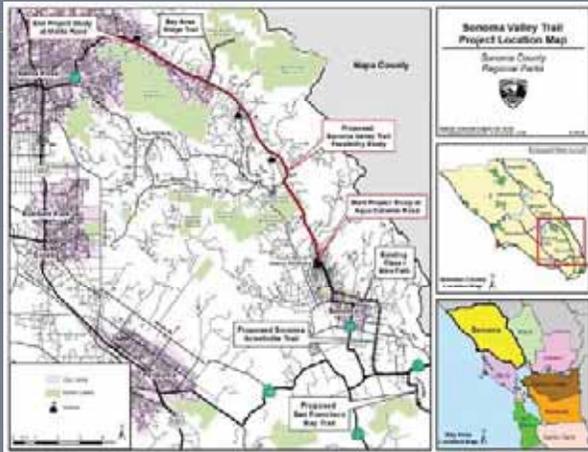
Today's meeting includes project stakeholders who are citizens from the community as well as business leaders, city and county representatives, commissioners and residents who are interested in bicycling and walking in the Sonoma Valley.

The Study Team includes Questa, Sonoma Ecology Center, Ian Moore Design, Parisi Associates and JSA Transportation Planning.

## What is the Sonoma Valley Trail?

The Sonoma Valley Trail is a planned bicycle and pedestrian trail along Hwy 12 in the Sonoma Valley from Melita Road in Santa Rosa to Agua Caliente Road in the Springs. The trail will connect with existing and planned trails in the City of Santa Rosa and Sonoma, and connect with other regional trails.

## Study Area



## Background

- The Sonoma Valley Trail is a continuation of the Central Sonoma Valley Trail.
- The Trail is part of the 2010 Sonoma County Bicycle and Pedestrian Plan.
- In 2013, Caltrans awarded a Community Based Transportation Planning Grant to Regional Parks to complete a feasibility study for the Trail.

## Goals

- Provide a continuous Class I bike path (separated from road) for transportation and recreation
- Improve safety and mobility for pedestrians and bicyclists along Highway 12
- Reduce greenhouse gas emissions
- Promote healthy living by providing a trail for community use
- Promote tourism to help bring in money for the local economy
- Provide connections to places of interest such as wineries, businesses, churches, schools, parks, bus routes and other trails
- Minimize impacts to private property, agriculture and sensitive natural resources
- Identify concerns and potential solutions to be addressed in project-level plan

## Scope of Work

- This is a *long-range* planning study that will be used to identify right of way, utilities, biological, cultural, traffic, safety and other issues affecting trail implementation
- The Study will evaluate alternatives and recommend a preliminary alignment (where the trail might go), initial design, and identification of segments that have potential to be built in the near future.
- The costs and the economic and other benefits to the community will also be assessed.

## Public Outreach

- 70 project stakeholders, groups and individuals with interests in Sonoma Valley:
  - Businesses
  - Churches/Schools
  - Bicycle advocates
  - Farming, vineyards, wineries
  - Government representatives
- 700 residents and property owners within 300 feet of Highway 12 corridor

## Public Outreach

### Project Input:

- Electronic mailing
- Newspaper notification
- Individual outreach
- Project Website
- User surveys
- Workshops
- Board of Supervisors
- Notifications in English and Spanish

## Tentative Timeline

**August-October 2014:** Identification of existing conditions, right of way and utility mapping, community survey, initial contact and meetings/workshops with stakeholders, interest groups, and the public.

**November-December 2014:** Identification and evaluation of trail alternatives, cost and benefit analysis, additional stakeholder meetings and community workshops.

**January-February 2015:** Further identification and evaluation of issues, opportunities and alternatives.

**March-June 2015:** Preparation and presentation of Draft Feasibility Study.

**August-September 2015:** Address public comments.

**October-November 2015:** Preparation and release of Final Feasibility Study.

**December 2015:** Board of Supervisors presentation and adoption.

## Next Steps

- Select most feasible segments for phased implementation
- Apply for grant funding
  - Environmental analysis
  - Right of way agreements
  - Permitting
  - Project design
  - Construction

## Thank You

Questions?

Contacts:

Ken Tam, Project Manager, 565-3348  
[ken.tam@sonoma-county.org](mailto:ken.tam@sonoma-county.org)

Steve Ehret, Park Planning Manager, 565-2041  
[steve.ehret@sonoma-county.org](mailto:steve.ehret@sonoma-county.org)

Subscribe to project updates at parks website  
[www.parks.sonomacounty.ca.gov/](http://www.parks.sonomacounty.ca.gov/) by clicking on "Sign up for  
Planning Updates"

## 9/10/14 Meeting Notes

Ken Tam of Sonoma County Parks introduced the project and meeting attendees identified themselves. Margaret Henderson, Jeff Peters and Ian Moore of the project team presented the study purpose, schedule and tasks, and indicated that we are in the listening and information gathering phase. Today's meeting is to identify interested stakeholders, discuss the project history and outreach process. Following the presentation, meeting participants were asked for feedback on three topics:

1. Why do we need the trail?
2. Who will be the trail users?
3. What are issues to be addressed?
4. What information should be included in the Study?

### Stakeholder Feedback, Questions and Responses:

1. Why do we need the trail?
  - To bicycle from Glen Ellen to Santa Rosa
  - Tourists want to ride through the valley from Sonoma
  - Cyclists ride loop from Napa on Ramal Rd and Warm Springs Rd
  - SVVB: another way to explore Sonoma, important reason is scenic beauty
  - Access for visitors, Sonoma to SR
  - People use bike rentals as well as own bikes
  - Tour groups
  - Fairmont Sonoma Mission Inn organizes bike tours
  - In the Valley, there are no alternatives—lack of facilities for tour groups
  - Safe Routes to Schools—connection between Hwy 12 and schools
  - Congestion reduction for schools at key hours
  - Kenwood schools
  - Population of school residents within Valley?
  - Workers in the Valley? Commuter work population
  - Middle/High school—are able to commute by bike longer distances up to 6 miles
  - Class I connections to schools are ideal—no traffic conflict
  - SE Greenway—Spring Lake Connection
  - Opportunity to extend and connect to Spring Lake and beyond
  - SMART, Prince Greenway, downtown SR connections
2. Who will be the trail users?
  - Residents without cars
  - Residents—recreation use from home
  - Primarily cyclists, 2) equestrians, 3) pedestrians, 4) electric vehicles
  - Facilities for runners
  - Strollers (strollers on Hwy 12 near Flowery School)

3. What are issues to be addressed?

- Adequate width of path to accommodate many user types
- Hwy 116 near Andy's Market—driveway hazard
- Reduce driveway conflicts
- Minimize crossings
- Speed of traffic
- Path—barriers might be needed in constrained areas
- Consider aesthetics when barriers are needed—stone wall
- Consider cost of barriers—plain guardrail is okay
- Sonoma Developmental—leave the Highway completely separated where there is an opportunity
- San Juan Islands—has a separated path but may choose not to use it because of grade changes
- Directionality of trail—may be confusing if on both sides vs one way
- Use the Railroad ROW if possible—concrete rail crossings are an opportunity
- Consider project cost 10 ft. separation vs. guardrail
- Would like to see trail implemented sooner rather than later
- Connectivity across Hwy 12—safe efficient visible crossings:
  - Madrone
  - Melita
  - Kenwood
  - Agua Caliente
  - Schools
- Wildlife Movement Corridor—85 miles—remove barriers

4. What information should be included in the Study?

- Tasting room opportunities—reach out to wineries
- Revisit setback safety distance—look at Hwy 116 crash/collision rate
- Oakmont frontage—opportunity to connect residents with trail
- Oakmont senior living—trail connection
- Ledson winery—cyclist
- Crossing at Oakmont and Kenwood and back is awkward
- Reach out to business owners
- Do environmental analysis as a checklist to simplify implementation
- Consider heritage trees in corridor
- Public health—issues:
  - General safety
  - Lighting
  - Barriers
  - Aesthetics
  - Vegetation—shade/barrier
  - Connectivity—connect to destinations of interest
- “Get people to it~~ to use it”
- Integrate into Bicycle/Pedestrian Plans and connections
- Consider using SCWA easement for trail

- Projects in area should include trail connections:
  - Oakmont
  - Elnoka Village
  - Important to make connection to Annadel
  - Spring Lake Park connection
  - Opportunities on both sides of road



**Community Workshops Compiled Presentation**

September 25, 2014

October 4, 2014

October 22, 2014

November 1, 2014

## Sonoma Valley Trail Feasibility Study



SONOMA COUNTY REGIONAL PARKS

Public Presentations

## Presentation

This presentation is a compilation of information presented at public workshops and stakeholder sessions:

- September 10, 2014
- September 25, 2014
- October 4, 2014
- October 22, 2014
- November 1, 2014



## Introduction/Study Purpose

The Sonoma Valley Trail is a planned bicycle and pedestrian trail along Hwy 12 in the Sonoma Valley from Melita Road in Santa Rosa to Agua Caliente Road in the Springs.

The trail will connect with existing and planned trails in the City of Santa Rosa and Sonoma, and connect with other regional trails.

## Background

- The Sonoma Valley Trail is a continuation of the Central Sonoma Valley Trail.
- The Trail is part of the 2010 Sonoma County Bicycle and Pedestrian Plan.
- In 2013, Caltrans awarded a Community Based Transportation Planning Grant to Regional Parks to complete a feasibility study for the Trail.

## Goals

- Provide a continuous Class I bike path (separated from road) for transportation and recreation
- Improve safety and mobility for pedestrians and bicyclists along Highway 12
- Reduce greenhouse gas emissions
- Promote healthy living by providing a trail for community use
- Promote tourism to help bring in money for the local economy
- Provide connections to places of interest such as wineries, businesses, churches, schools, parks, bus routes and other trails
- Minimize impacts to private property, agriculture and sensitive natural resources
- Identify concerns and potential solutions to be addressed in project-level plan

## Outcomes

- This is a *long-range* planning study that will be used to identify right of way, utilities, biological, cultural, traffic, safety and other issues affecting trail implementation
- The Study will evaluate alternatives and recommend a preliminary alignment (where the trail might go), initial design, and identification of segments that have potential to be built in the near future.
- The costs and the economic and other benefits to the community will also be assessed.

## What will the Trail Look Like?



## Study Area



## Outreach

- 70 project stakeholders, groups and individuals with interests in Sonoma Valley:
  - Businesses
  - Churches/Schools
  - Bicycle advocates
  - Farming, vineyards, wineries
  - Government representatives
  - Media
- Mail notices to 700 residents and property owners within 300 feet of Highway 12 corridor



## Public Input

- Three workshops (field workshop to be held at SV Regional Park November 1)
- Online Survey September 25-November 25

ALL SURVEYS	SEARCH	ADD	REMOVE	STATUS
Trail Survey - Sonoma Valley	10/25/14	1	1	1
Trail Survey - Sonoma Valley	10/25/14	1	1	1
Trail Survey - Sonoma Valley	10/25/14	1	1	1
Trail Survey - Sonoma Valley	10/25/14	1	1	1

## Workshop Comments

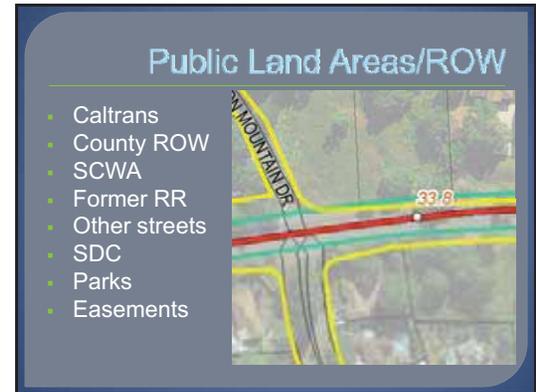
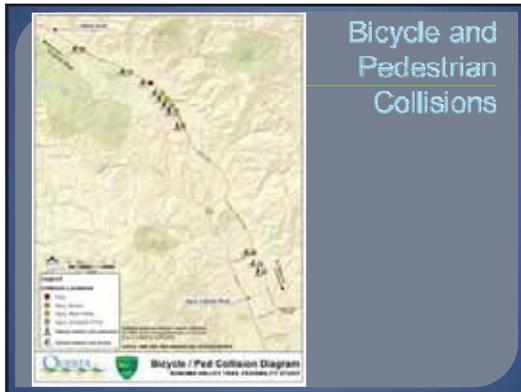


- Oakmont:**
- Connections to other SR trails
  - Bicycle connections in Oakmont
  - Put SVT on east side
  - Barrier and trees south of Oakmont
  - Congestion around Pythian Road
- Kenwood:**
- Bypass Kenwood east or west
  - Use Kenwood streets
  - Put on east side to minimize conflicts
  - Provide connections to parks via Adobe Canyon & Warm Springs Roads
  - Use/don't use Dunbar Road
- Agua Caliente:**
- Explore NRR alignment
  - Concerns/need for AC trailhead & parking

## General Comments



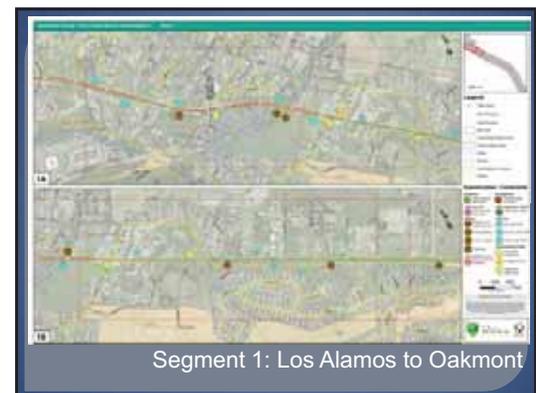
- Protect trees
- Work with supportive landowners
- Take a closer look at railroad alignment
- Provide interim connections
- Provide improvements and connections in Sonoma area—Arnold Drive, Madrone, Springs
- Rename \*Jack London Trail

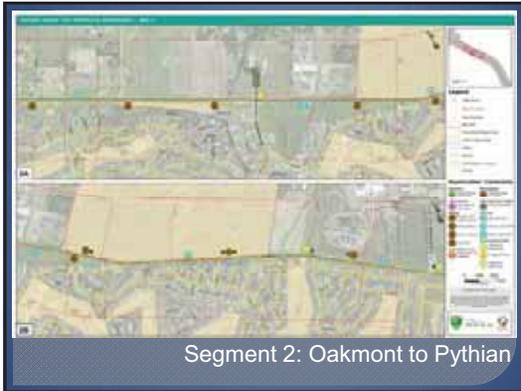


- ### Trail Segments
1. Los Alamos to Oakmont
  2. Oakmont to Pythian
  3. Pythian to Warm Springs
  4. Warm Springs to Dunbar
  5. Dunbar to Arnold
  6. Arnold to Madrone
  7. Madrone to Agua Caliente

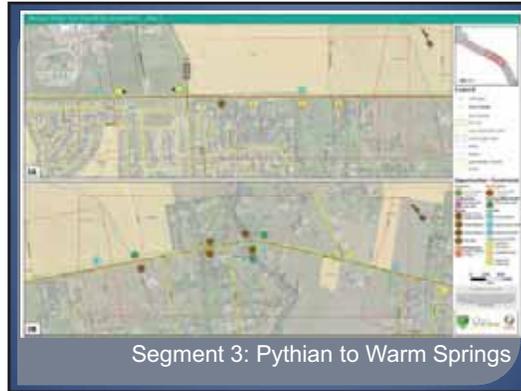
### Opportunities & Constraints

<b>Aesthetics</b>	<b>Geology/Soils</b>
<b>O</b> View/Overlook opportunity	<b>A</b> Potential slope or erosion
<b>Ag Resources</b>	<b>Hydrology/Water Quality</b>
<b>V</b> Ag resources near road	<b>F</b> Flood prone area
<b>Biology</b>	<b>Land Use</b>
<b>W</b> Sensitive bio/wildlife species	<b>E</b> Encroachment
<b>M</b> Wetland/Marsh	<b>N</b> Narrow public ROW
<b>C</b> Creek crossing	<b>P</b> Wide public ROW
<b>T</b> Oak trees	<b>Transportation/Traffic</b>
<b>Cultural Resources</b>	<b>I</b> Signalized intersection
<b>H</b> Historic features (Bridges)	<b>X</b> Congested area
	<b>L</b> Adjacent to public land





Segment 2: Oakmont to Pythian



Segment 3: Pythian to Warm Springs



Segment 4: Warm Springs to Dunbar



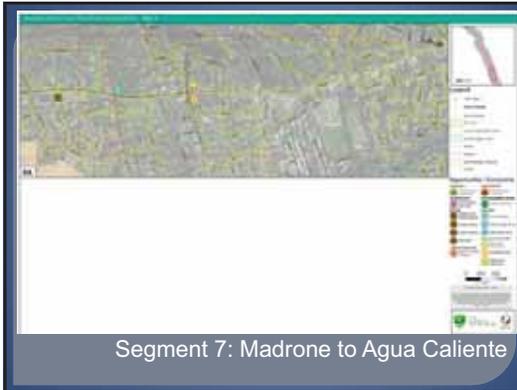
Segment 5: Dunbar to Arnold



Segment 6: Arnold to Madrone



Segment 7: Madrone to Agua Caliente



Segment 7: Madrone to Agua Caliente

## Tentative Timeline

- November December 2014:** Identify and evaluate trail alternatives, benefit analysis and stakeholder meetings and community workshops.
- January June 2015:** Prepare/present Draft Feasibility Study.
- August September 2015:** Address public comments, revise Study.
- October November 2015:** Prepare/release Final Feasibility Study.
- December 2015:** Board of Supervisors presentation and adoption.

## Next Steps

- November 1 Field Workshop
- Complete Existing Conditions analysis
- Identify Preliminary Routes
- Individual Stakeholder Outreach
- Trail study preparation, review and approval

## Tell Us What You Think!

- Electronic mailing
- Newspaper notification
- Workshops
- Board of Supervisors
- Individual outreach
- Notifications in English and Spanish
- Community Survey
- Project Website

## Other Outreach Opportunities

- Community Workshop #1: September 23, 2014
- Community Workshop #2: October 4, 2014
- Community Workshop #3: November 1, 2014
  - Written comment cards available at all 3 workshops

**Ongoing Opportunities**

- Public can send in comments via Email or US Mail to:
  - Email: [ken.tam@sonoma-county.org](mailto:ken.tam@sonoma-county.org)
  - Written comments:
    - Attn: Sonoma Valley Trail, Ken Tam
    - Sonoma County Regional Parks Department
    - 2300 County Center Drive, #1204
    - Santa Rosa, CA 95403
- Online Community Survey in English and Spanish
- Go to the Parks Project website for more project information:
  - Current Press Releases
  - Receive automatic notices of updates - view and subscribe at: [http://parks.sonoma-county.ca.gov/about\\_us/project\\_details/sonoma\\_valley\\_trail\\_frequentlyasked.htm](http://parks.sonoma-county.ca.gov/about_us/project_details/sonoma_valley_trail_frequentlyasked.htm)

## Thank You

**Questions?**

**Contacts:**  
 Ken Tam, Project Manager, 565-3348  
[ken.tam@sonoma-county.org](mailto:ken.tam@sonoma-county.org)

Steve Ehret, Park Planning Manager, 565-2041  
[steve.ehret@sonoma-county.org](mailto:steve.ehret@sonoma-county.org)

Subscribe to project updates at parks website [www.parks.sonoma-county.ca.gov/](http://www.parks.sonoma-county.ca.gov/) by clicking on "Sign up for Planning Updates"

Workshop Photos





Article in Sonoma Index-Tribune, September 30, 2014

# Sonoma Index-Tribune

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## County gets bike trail feedback



HUGH HELM, of Oakmont, makes some notes on one of the maps Thursday evening at a meeting to discuss the Sonoma Valley bike and pedestrian trail. Helm wants to make sure the trail connects with trails in Santa Rosa. Bill Hoban/Index-Tribune

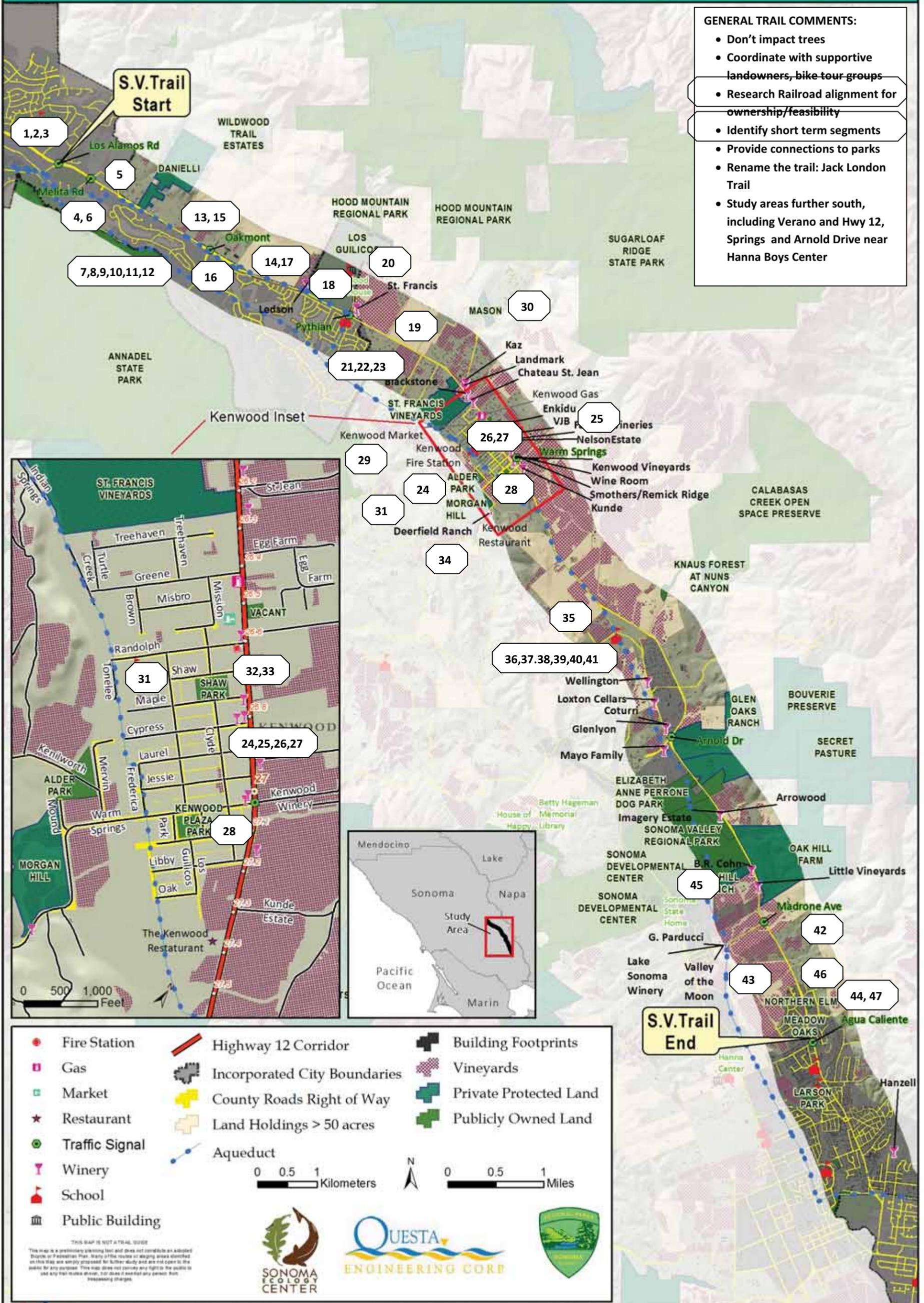
Tuesday, September 30, 2014 12:26 PM

By [Bill Hoban/Index-Tribune Managing Editor](#)

## **Summary of Comments from Workshop Participants**

# Sonoma Valley Trail Feasibility Study

- GENERAL TRAIL COMMENTS:**
- Don't impact trees
  - Coordinate with supportive landowners, bike tour groups
  - Research Railroad alignment for ownership/feasibility
  - Identify short term segments
  - Provide connections to parks
  - Rename the trail: Jack London Trail
  - Study areas further south, including Verano and Hwy 12, Springs and Arnold Drive near Hanna Boys Center



COMMENTS RECEIVED AT WORKSHOPS

**Comments Received at Public Workshops**

Community Workshop 1  
9/25/2014 , Sonoma Veterans Building

<b>Number</b>	<b>Comment</b>
---------------	----------------

**Who would use the trail and why?**

1	Organized groups of cyclists
2	8 feet is too narrow, will have 25 mph riders, residential areas have pedestrians, no safe area now. Accidents at intersections, needs careful design. Strollers use the trail. Look at Lot of people will commute, not if restricted to 15MPH. Bidirectional path maybe
3	considered.
4	At what point do we contact landowners?
5	Design standards are necessary to determine amount of property to be needed
6	Santa Rosa cyclists routinely schedule rides along the corridor.
7	Bicycle touring group routinely plans tours if the trail is done right
8	Disagree that trail won't be used if trail has 15 mph limit
9	Why wouldn't trail be on highway 12? Water easements might need to be protected. In Contra Costa, there are separated trails for cyclists, with dirt paths for others.
10	Study is looking at all available ROW
11	Have you looked at Railroad tracks.
12	In Kenwood, kids can't ride to middle school, not good ways to get to school.

**Any other trail users?**

13	Property owner, great concerns about people coming on property, into barns and on property.
14	Most trails, nearer to towns there are more pedestrians. Crowded on trails near cities.
15	Consider equestrian use, another group that might benefit.
16	Property owner has trouble safely entering and exiting property. Possible to reduce traffic speed?
17	Roller skaters, Santa Cruz has skaters and motorized users. Segways. These uses should be supported as long as they don't interfere
18	What kind of trailheads and facilities will be provided and where would they go?
19	Consider access to existing parks and Sugarloaf State Park

**Design Questions**

20	Water, restrooms, parking.
21	Paved area with parallel footpath that is not asphalt
22	Will wineries embrace this?
23	Napa trail, what keeps people from harvesting grapes
24	Does the project provide the funding for a fence?
25	Precedent for trails along vineyards along West County Trail, Santa Rosa Creek Trail
26	Would there be problems for private owners to develop property if the trail is on their land?

Community Workshop 2  
10/04/2014 , Dunbar School

<b>Number</b>	<b>Comment</b>
---------------	----------------

**Who would use the trail and why?**

27	Interest in trail for cyclists for alternatives for transit, tourist use
28	More people would use trail if safe
29	Commuting

30	Bike path in Sonoma would like to be continuous, unencumbered
31	Santa Rosa cycling, won't go on Hwy 12, cyclists avoid and go other routes
32	Concern about putting tourists on highway, some groups put tourists in dangerous situation, this trail might put too many people out there, overuse of trail from tour companies.
33	Bike companies on road are keeping biking alive. Cyclists riding side by side is a concern, should ride single file
34	Commuters on road already, dangerous competition with cars
35	Walk bike trail in town, strollers, walking, maybe users would go to venues
36	West county trail, one segment least desirable, immediately adjacent to Hwy 116—air pollution and noise, not a good tourist component and for cyclists
37	Railroad right of way should be explored
38	Path through Kenwood would likely be on business side of Highway, would streets be part of study? Concern with people crossing the road.
<b>Any other trail users?</b>	
39	Motorized users (segway)
40	Spring Lake trail connections? Yes, part of evaluation
41	Would there be more planned bicycle events?
42	Don't like to see Segways, dangerous mix with strollers and bikes
43	Trails encourage people to live along them (Rodota Trail), how to discourage homeless encampments
44	Access to services for homeless County Parks works with local police to discourage.
45	Trail management for security, cleanup, maintenance
46	Design of posts to limit vehicles?
47	Focus of Study is Highway 12
48	Would not want to see trails on Kenwood streets
49	Maintenance of path should be identified in plan
50	CEQA process will begin after the project is defined
51	What is CEQA? California environmental quality act, studies range of environmental issue
<b>Design Questions</b>	
52	Minimum 8 feet of pavement
53	As much as 20 feet or more, pavement and shoulders
54	American River trail has separated use, same at Crissy Field. Separate users and separate from traffic noise
55	Equestrians? Tourists like to ride horses
56	Separate users, walkers would generally be off pavement
57	Trail on Santa Rosa Creek, separate on sides of creek
58	Would trail be on one or both sides?
59	Crossing locations?
60	Make area wider where posts are placed
61	Trail could be separated where there is not room? Could have trail barriers in certain locations
62	How involved will Caltrans be?
63	Bike lane curbed or contained causes maintenance problems
64	Flexible for piecemeal path?
65	Trail will not be built at one time, will be implemented in phases
66	Dunbar Road is popular for bicycles, would it be used interim as trail?

67	Will there be seating and parking areas? Access points, restrooms, etc.
68	Kids riding to schools
69	Trail on road vs. pedestrians on road, concern for walking especially Warm Springs or Dunbar Road
70	Are Caltrans and landowners in agreement? Caltrans funded the study, will be reviewed by different departments?
71	Are property owners receptive to project? Outreach is planned
72	One owner would support trail on property
73	Corner of Oakmont Drive, lots of trees, not lost the trees, shoulder is narrow
74	Cyclists looking for safe corridors to ride.
Community Workshop 3	
11/01/2014 , Sonoma Valley Regional Park	
75	How will drainage ditches be dealt with along sides of road
76	How will the trail be constructed (in stages)
77	Trail Cross Sections--Put pedestrians next to horses rather than bicyclists
78	What will the trail cost?
79	Make connections to existing and future trails--Montgomery Drive/Santa Rosa, Hood Mountain, Annadel, SE Greenway, etc.
80	Tour groups will make the trail busy
81	Prioritize trail segments so each has independent utility, such as Oakmont to Kenwood, or Agua Caliente to Regional Park
82	Who will maintain the trail? (Unlikely that Caltrans would maintain, options for local agency, volunteer group, trade association, etc)
83	Will there be outreach to private property owners?
84	Look at this trail in a bigger context, it is really a gap in a cross-county trail connector that goes from Forestville to Sonoma, don't view it in isolation, it is a missing link.
85	The trail should be viewed as economic development in cost/benefit analysis
86	What about sidewalks and bike lanes in some areas?
87	Must be careful about switching from side to side or transitioning from bike lanes to separate trail, don't create gaps
88	Expand notification area to include areas where alternatives might be considered (all of Kenwood, Dunbar Road, etc)
89	What is the notification process (all properties within 300 feet, as well as area wide and general notices)
90	Where will the money for implementation come from?
91	Was the Bicycle Coalition notified?(yes)
92	More tourists are bad for quality of life
93	Want through traffic, not more people
94	Too many events, second home rentals and tourists disrupt quality of life--bachelorette parties with tipsy users walking along side of road is unsafe
95	Overconcentration of events marketed for tourists
96	There are bike rental places that rent bikes to tourists and send them off on Hwy 12, where there are no facilities and it's unsafe. Tour companies not providing good direction
97	Agua Caliente Knolls, loud traffic, consider a soundwall
98	Concern about privacy from people walking near property
99	Consider a media strategy with periodic articles to keep people informed of the process

Area-Specific Comments on Maps		
Number	Area	Comment
OAKMONT MAP		
1	Oakmont	Consider connecting to Spring Lake
2	Oakmont	Connect to SE Greenway
3	Oakmont	At Melita Road, connect to Caltrans Right of way, (SE Greenway), get City to coordinate
4	Oakmont	Access to Annadel through Elnoka Village
5	Oakmont	Lots of car accidents here (south of Melita Rd) with left hand turn. Think it's best for trail to be far off Hwy here. Too much congestion.
6	Oakmont	New turn signal will be here (at Elnoka Village)
7	Oakmont	Highlight of map showing "Existing light use by bikers on surface public streets in Oakmont"
8	Oakmont	Trail connect here (Oakmont)
9	Oakmont	Bike Path (Oakmont)
10	Oakmont	Consider improving bridge at water treatment plant
11	Oakmont	Candidate for Class 2 (Oakmont Drive)
12	Oakmont	Safety concerns associated with demographics
13	Oakmont	East side (Hwy 12) better this area
14	Oakmont	Barrier (south of Oakmont Drive) no place for bikes to retreat
15	Oakmont	Trail would be better on east side of 12, not running through residential streets
16	Oakmont	How will the path cross the highway at Oakmont Drive?
17	Oakmont	Keep oak trees (south of Oakmont Drive)
18	Oakmont	This area may need extra monitoring re: transients, etc (lots of activity here on the bus lines) (north of Pythian Road)
19	Oakmont	Campagna Lane in development has trail easement as part of its approval permit
20	Oakmont	Pythian Road provides access to Hood Mtn
21	Oakmont	south of Pythian Road, lots of houses close to highway
22	Oakmont	south of Pythian Road, houses already close to 12, driveways are tough to access
23	Oakmont	Many homes with driveways close to road, high speed
KENWOOD MAP		
24	Kenwood	Bypass Hwy 12 through Kenwood to east or west
25	Kenwood	We believe putting the trail on the north [east?]side of Highway 12 would eliminate the congestion street crossings, parking, in front of Cafe Citti and make for a smoother, less congested path. Also fewer trees in the way
26	Kenwood	Issues with businesses on 12, not enough parking, people back out onto the highway, etc.
27	Kenwood	Overconcentration of wineries, tasting rooms etc in Kenwood is already causing parking and traffic issues in the village. (mostly south [west] side of highway 12.
28	Kenwood	Warm Springs Road not safe for walkers
29	Kenwood	Lawndale and Shultz trailheads to Annadel, connect to Warm Springs Road
30	Kenwood	Connect to to Sugarloaf on Adobe Canyon Road

31	Kenwood	Use Kenwood streets? Los Guillicos?
32	Kenwood	Businesses and fire station are very close to hwy
33	Kenwood	Kenwood, lots of close buildings on the SW, but people would want to cross from the NE
34	Kenwood	Deerfield Ranch Winery may be supportive, Kunde has long frontage
35	Kenwood	Pinot Point, intersection of Dunbar and Hwy 12
36	Kenwood	Dunbar not safe for walkers
37	Kenwood	Focus on Dunbar for this segment short term
38	Kenwood	Use Dunbar
<b>AGUA CALIENTE MAP</b>		
39	Agua Caliente	Jerri Drive to Sylvia through to Dunbar Road
40	Agua Caliente	Pedestrians on Dunbar not desirable
41	Agua Caliente	Dunbar has existing bicycle traffic
42	Agua Caliente	Save access to Cavedale, heavily used by cyclists
43	Agua Caliente	Alternative site--NP RR right of way south of Madrone
44	Agua Caliente	Parking general, Hookers, Serres Drive
45	Agua Caliente	Connect to Regional Park Trail, use old railroad right of way
46	Agua Caliente	South of Madrone, east side, property owner concerns about trespassing and privacy, driveway at Poolmart
47	Agua Caliente	Concerned about trailhead parking at Agua Caliente
<b>GENERAL COMMENTS ON MAPS</b>		
G1	General	Make sure no impacts to trees
G2	General	Arbor at Riverside, supportive landowner
G3	General	Identify bands along the corridor: supportive property owners, identified barriers, solicit their recommendations, for their band
G4	General	Take a closer look at railroad alignment
G5	General	Short term segments should be where there are no parallel alts
G6	General	Rename: Jack London Trail
G7	General	Chuck Levine, Sprint CEO, now part of Jack London Group. Provide side access to parks all along the corridor
G8	General	Vermont Bicycle Tour-VBT Sonoma Bike Tours Trek Tours Backroads Use Fairmont to Fairmont possible bike rental
G9	Springs	Bike crossing at Verano and Hwy 12 to connect with city trails needs extra planning [not in study area]
G10	Springs	The bike path through the Springs (Fetters, Boyes, etc) is of big concern and needs public discussion too, contact Springs Community Alliance [not in study area]
G11	Springs	Arnold Drive near and north of Hanna Boys Center, Bad section, no shoulder [not in study area]

## Community Survey

### Sonoma Valley Trail Community Survey. Please note that comments and information submitted become part of the public record.

Community

## Edit Survey

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### TITLE & LOGO Edit Title + Add Logo

Sonoma Valley Trail Community Survey. Please note that comments and information submitted become part of the public record.

+ Add Page

### PAGE 1 Edit Page Options Add Page Logic Move Copy Delete

Show this page only

+ Add Question

#### Q1 Edit Question Add Question Logic Move Copy Delete

##### 1. Where do you live?

- a. Sonoma/Springs Area
- b. Kenwood
- c. Glen Ellen
- d. Oakmont
- e. Santa Rosa

Other (please specify)

+ Add Question Split Page Here

#### Q2 Edit Question Add Question Logic Move Copy Delete

##### 2. Do you currently use the existing road shoulders along Highway 12 between Santa Rosa and Sonoma to: Check all that apply.

- a. Bicycle
- b. Walk

c. Jog

d. None of the above

Other (please specify)

+ Add Question ▼ Split Page Here

**Q3** Edit Question ▼ Edit Question Logic (1) Move Copy Delete

**3. If the trail is built, how often would you or your family use it?**

- a. Every day
- b. Once or twice a week
- c. Once a month
- d. Once every several months
- e. Never

+ Add Question ▼

+ Add Page

**PAGE 2** Edit Page Options ▼ Add Page Logic Move Copy Delete

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+ Add Question ▼

**Q4** Edit Question ▼ Edit Question Logic (4) Move Copy Delete

**4. What would you use the trail for? Check all that apply.**

- a. Commuting to work
- b. Exercising
- c. Recreation
- d. Transportation to destinations such as parks, restaurants, wineries, other businesses

Other (please specify)

+ Add Question ▼

+ Add Page

**PAGE 3** Edit Page Options ▼ Add Page Logic Move Copy Delete

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+ Add Question ▼

Q5 [Edit Question](#) ▼ [Add Question Logic](#) [Move](#) [Copy](#) [Delete](#)

**5. Would never use the trail because. Check all that apply.**

- a. Don't bicycle or walk
- b. Physical disability
- c. Not comfortable bicycling or walking along the Highway 12 corridor
- d. Doesn't provide desired destination

Other (please specify)

+ Add Question ▼ [Split Page Here](#)

Q6 [Edit Question](#) ▼ [Add Question Logic](#) [Move](#) [Copy](#) [Delete](#)

**6. How important is the safety of Highway 12 to you?**

- a. Very important
- b. Moderately important
- c. Not very important

+ Add Question ▼ [Split Page Here](#)

Q7 [Edit Question](#) ▼ [Add Question Logic](#) [Move](#) [Copy](#) [Delete](#)

**7. How much do you think the proposed trail will improve safety for bicyclists, pedestrians, and motorists?**

- a. Very significantly improve safety
- b. Significantly
- c. Less than significant
- d. No change

+ Add Question ▼ [Split Page Here](#)

Q8 [Edit Question](#) ▼ [Add Question Logic](#) [Move](#) [Copy](#) [Delete](#)

**8. What other roads and/or trails do you use to bicycle or walk in the Sonoma Valley? Check all that apply.**

- a. Arnold Drive
- b. Warm Springs Road
- c. Dunbar Road
- d. Madrone Road
- e. None

Other (please specify)