Mendocino County Rail-with-Trail Corridor Plan

MAY 2012

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The preparation of this report was programmed through the Mendocino Council of Governments' FY 2010/11 Transportation Planning Work Program and funded with State (Community Based Transportation Planning Grant) and Local (Planning Programming & Monitoring) funds.

MCOG

alta
PLANNING + DESIGN

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Executive Summary

Introduction

Local interest in a Rail-with-Trail (RWT) along the Northwestern Pacific Railroad (NWP) right-of-way has been documented in multiple planning processes over the last decade. The Mendocino Council of Governments (MCOG) recognized the vision set forth for a multi-use RWT along the Northwestern Pacific Railroad right-of-way (NWP ROW) and the need for improved non-motorized connections within the population centers in the county. MCOG has considered opportunities for a RWT along the NWP line as part of previous planning efforts, but recognized that a corridor plan was needed to identify a comprehensive approach for a RWT.

The Mendocino County Rail-with-Trail Corridor Plan (Plan) provides an analysis of general conditions along the length of the 103-mile corridor and identifies priority RWT projects for the Cities of Ukiah and Willits and the County of Mendocino. The Plan provides jurisdictions along the rail corridor (City of Ukiah, City of Willits, County of Mendocino, and Caltrans) with information to assist with implementation of the RWT. This Plan is funded by Caltrans' Community Based Transportation Planning (CBTP) grant funds and local matching funds. For this Plan, MCOG consulted with representatives from the County of Mendocino, the cities of Willits and Ukiah, North Coast Railroad Authority (NCRA), and Caltrans. The Plan was developed with community, stakeholder, and public agency input throughout its preparation.

This Executive Summary provides an overview of the findings and recommendations of the Mendocino County Rail-with-Trail Corridor Plan. The summary provides an overview of each plan chapter and highlights key aspects.

Goals and Vision for the Corridor

Residents of the county envision use of the rail corridor for walking and cycling within and between communities. Restoration of freight rail service in Mendocino County—at least as far north as Willits—is also a priority for the County. Coordinating the desire for return of freight service with use of the corridor for a RWT is a key aspect of this planning process. The following goals guided the development of the corridor design parameters, short- and long-term projects, and implementation strategies in this Plan.

GOAL 1: Improve Non-Motorized Mobility and Accessibility

Expand and enhance non-motorized mobility for persons living in, working in, and visiting Mendocino County, including access to and connections with other transportation modes.

GOAL 2: Preserve the Transportation System

Design a RWT that will efficiently utilize the NWP corridor, support the region's current blueprint planning efforts which calls for improved options for bicycling, walking, and equestrians, and allow for future rail service along the NWP line.

GOAL 3: Enhance Public Safety and Security

Design the RWT segments to respond to safety and security needs as well as neighborhood privacy concerns.

GOAL 4: Reflect Community Values

Promote community values and identity, including use by multiple user groups, such as bicyclists, pedestrians, and equestrians (where feasible) and incorporate public involvement in decision making processes.

GOAL 5: Enhance the Environment

Assist in greenhouse gas reduction by encouraging and facilitating non-motorized vehicle trips.

GOAL 6: Allow for Regional Connections

Provide non-motorized connections to adjacent streets and land uses including transit, shopping, institutional, office, and residential areas.

GOAL 7: Implementation Funding

Develop a funding, financing, and implementation strategy identifying eligible grant sources and/or potential development requirements supporting construction.

Background

For 92 years the NWP ran trains through Mendocino County, with Willits being a major yard for the system. Lumber mills and other customers in the county provided significant traffic to the system. Passenger service was discontinued in 1958, and in 1984 the Southern Pacific (owner of the NWP) sold the railroad north of Willits to the Eureka Southern railway. The NWP segment in Mendocino County is managed by the NCRA, which was formed by the State Legislature in 1989 to ensure the continuation of railroad service in northwestern California. The Eureka Southern line continued to operate in the Eel River Canyon until it was sold to the NCRA in 1992. The line north of Willits was closed after major flooding in various areas on the line.

Government agencies, including the NCRA, took control of the railroad south of Willits and assumed complete control from the Southern Pacific in 1996. In 1998 the entire line was closed due to flood damage, and no trains have operated on the NWP in Mendocino County since that time. Restoration of the railroad in Marin and Sonoma Counties is underway with rail service up to Windsor beginning again 2011.

As noted, the interest in the rail line as a public corridor that could be used for multi-modal travel has been well documented in various planning efforts throughout the county. The Plan includes a policy and plan summary that documents both regional and local interest in using the corridor for bicycling and walking. Documents from the County General Plan to local neighborhood plans identify the corridor as a key community asset. In addition, specific County policies support the concept of the Rail-with-Trail identified in this Plan. An example policy from the general plan is included below:

> *Policy DE-159: Preserve abandoned railroad right-of-way for trail use and investigate the feasibility of collocating bicycle paths on unused portions of existing rights-of-way.*

Needs Assessment and Demand

A RWT along the NWP ROW is expected to be an asset for local residents and visiting tourists. Both local and visiting RWT users could engage in recreation and transportation activities. Public comment collected in Ukiah and Willits relates that RWT users of all ages and abilities would use the RWT in a variety of ways. The RWT would serve a wide variety of users, some of whom have very specific design, access, surfacing, facility, and other needs. Those who access the RWT using an automobile would require a parking area. All groups would benefit from facilities such as restrooms, benches, interpretive materials/signs, orientation and roadside directional signs, and water spigots strategically placed along the RWT.

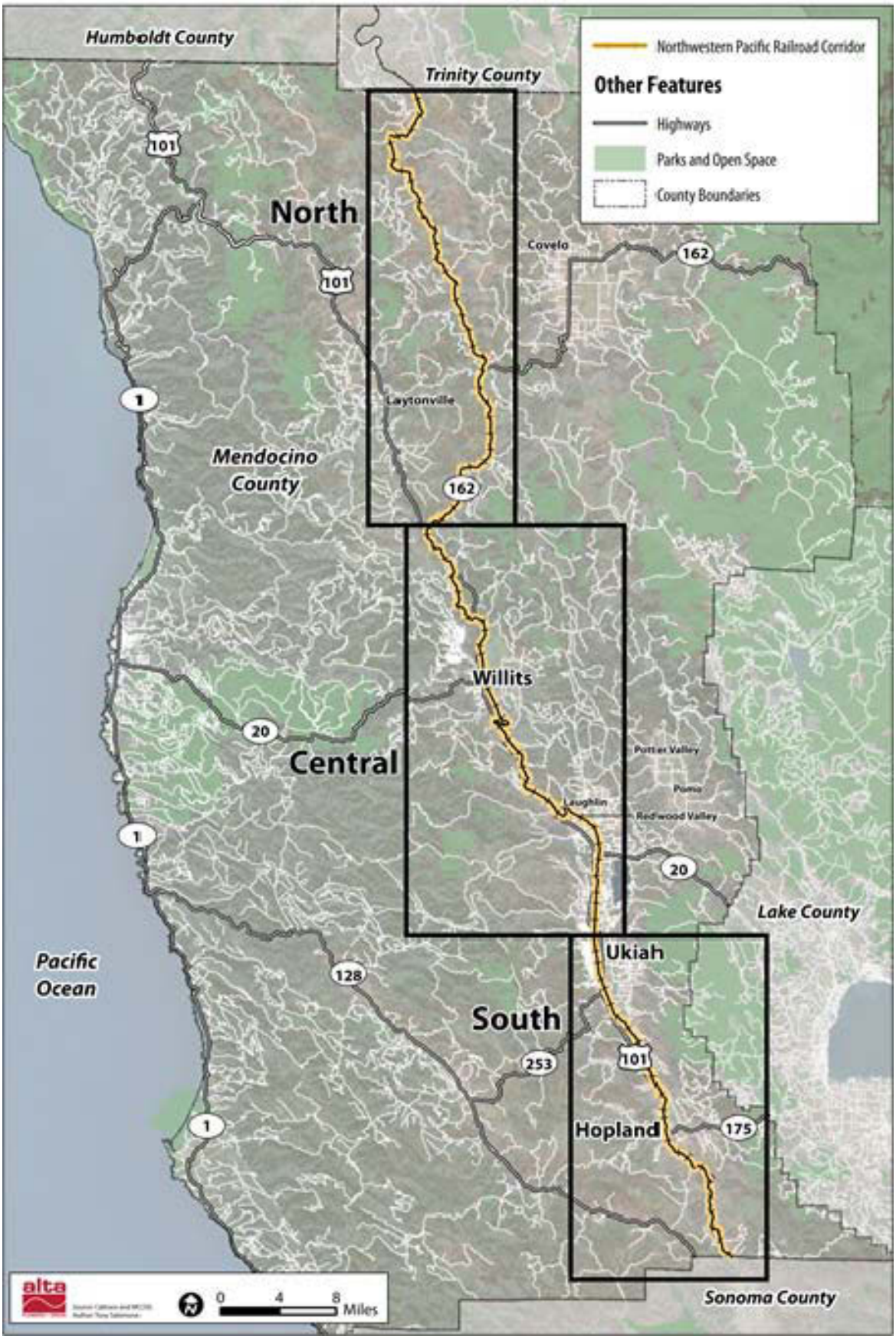
The projected demand for RWTs in Mendocino County is assumed to be comparable with the demand for multi-use trails in similar communities nationwide. Multi-use trails are typically identified as one of the top resources in towns and cities. In many communities, multi-use trails are the most heavily used public facilities—more popular than traditional parks—and also encourage people to walk and bicycle who might not normally do such activities.

Once a high quality RWT system is completed from Willits to Hopland, it could be expected to support as many as 1,000,000 trips per year. It is expected that the trail could serve as an important economic generator for local communities, attracting visitors and extending the stay of visitors. For example, the trail system in Lake Tahoe is credited with making the summer season attract more visitors to the area than the winter months.

Corridor Overview

The Plan area follows the NWP ROW, extending the entire north-south length of inland Mendocino County. The planning area extends along approximately 103 miles of corridor. The corridor runs through the communities of Cloverdale, Hopland, Ukiah, Redwood Valley, and Willits.

Given the length and cost of the proposed RWT throughout Mendocino County, the corridor must be broken down into discrete segments that can be developed over time. Based on these needs, the corridor was divided into three basic regions (South, Central, and North) and into 29 individual segments within these classifications. The figure on the following page illustrates the general extents of the planning areas and is following by a description.



Rail-With-Trail Corridor Plan Area South, Central, and North Sections

South Section

The southern section of the NWP corridor starts just south of the Sonoma County Line at McCray Road. From the county line to south of Hopland, the tracks closely follow the Russian River through narrow, steep canyons. The tracks continue through the community of Hopland and other small settlements. For the next 20 miles, the railroad goes through rolling hills and vineyards, generally following US 101 and the Russian River. The corridor proceeds northward through the Ukiah Valley and continues through the heart of the community of Ukiah to the northern city limits of Ukiah at Brush Street. The corridor is generally in good condition except in the canyon areas, where there are numerous landslides and washouts.

Central Section

The central section of the NWP begins just outside of Ukiah at Ford Road and continues north to Longvale. From Ukiah, the corridor complements the topography by making a large loop as the corridor bisects rural Redwood Valley. North of Redwood Valley the corridor climbs up over a summit (Ridgewood Summit), which is the highest elevation point on the entire NWP corridor (1,913 feet), before descending into Willits. Willits has the largest yard on the NWP corridor (eight tracks), a turning wye, a refueling facility, and a connection with the Mendocino Railway (Skunk Train). Following the upper reaches of Outlet Creek and generally following US 101, the corridor enters Little Lake Valley and continues through Arnold until it reaches Longvale.

North Section

The north section of the NWP corridor, which follows Outlet Creek and the Main Fork of the Eel River, is located in a narrow canyon surrounded by rugged hills and mountains spotted with the occasional ranch and home. The Eel River itself beyond Dos Rios has no paved road access and is one of the most remote areas in the state. This section also is notable for the high number of landslides, washouts, and collapses of embankments in the corridor making development of a formal trail corridor unlikely within the 20-year planning horizon.

Conditions throughout the corridor vary greatly from mountainous areas with tunnels and challenging topography (picture at left shows one of the many tunnels in the northern sections) to flat and open areas in the urban centers of the County (picture at right shows a section in Willits)

Priority Projects

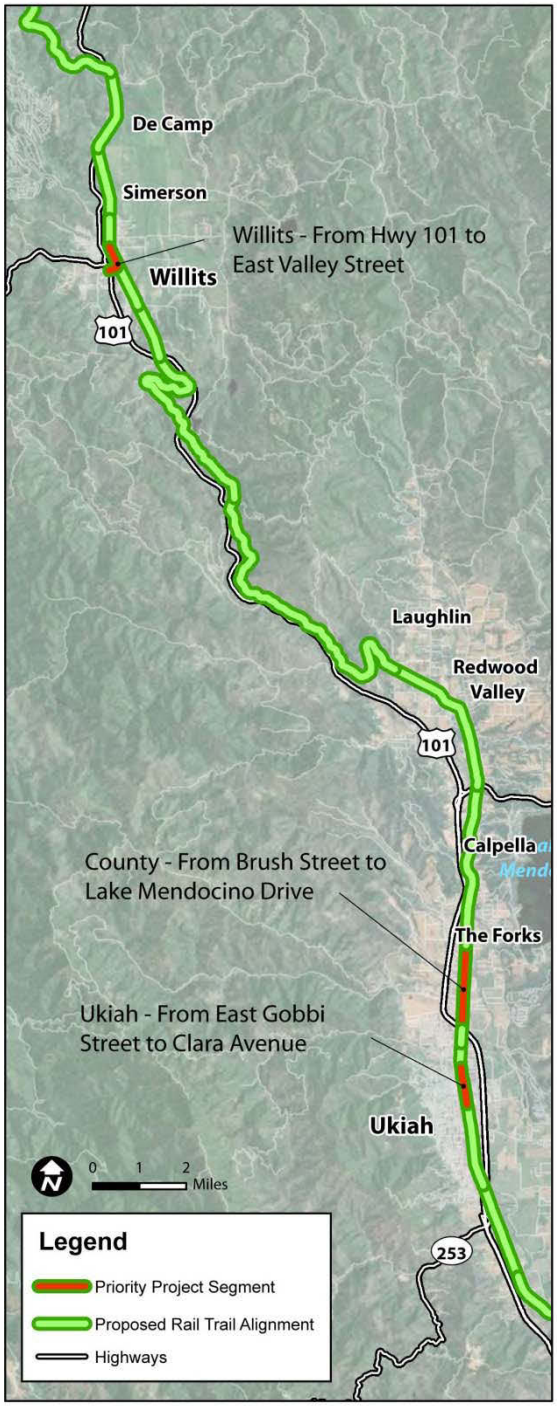
An important objective of this plan is to develop preliminary design and cost estimates for the top three (3) segments in the county. Through work with the project Technical Advisory Group (including NCRA) and input from the public, three Phase I segments were identified for preliminary design. One of the goals was to provide a Phase I facility in each of the two main cities in the county (Ukiah and Willits), plus one segment in the unincorporated part of the county.

Ukiah Phase I segment (East Gobbi Street - Clara Avenue) was selected based on previous planning work completed by the City of Ukiah. The feasibility study showed this segment to have the highest benefit to the community and identified it as a clear implementation priority.

County of Mendocino Phase I segment (Brush Street - Lake Mendocino Drive) was selected because it was believed to serve the greatest potential number of users. It will be part of an important link from the Calpella/"Forks" area into Ukiah. The available width and lack of major topographic constraints, sidings, and spurs were also important considerations in selecting this segment as a short term priority.

Willits Phase I segment (US 101 - East Valley Street) was selected based on relative benefit to users, feasibility, and potential connections. Other alternatives in the community of Willits were deemed less feasible for short term implementation due to potential rail operation and safety conflicts.

A significant portion of this project was dedicated to the development of concept plans for these Phase I projects. Detailed concept drawings are complete and will provide the basis for acquiring funding to develop the trail segments.



Priority Project Corridor Context

Implementation

Developing a rail-with-trail along the entire corridor in some form is the long term vision. However, with over 103 miles of corridor, the development of the fully connected corridor will take decades and may never be feasible in some sections. It is necessary to identify priorities over the reasonable planning horizon. The implementation chapter is focused on recommended trail phasing, cost estimates, and guidance for operations.

The eight criteria below were developed to help classify RWT segments for phased implementation. The criteria were developed to give weight, and therefore higher priority, to those RWT segments that best support the plan goals.

- Public input
- Proximity to population centers
- Proximity to activity centers
- Connection with other pedestrian and bicycle facilities
- Connection with other RWT segments
- Environmental constraints
- Constructability
- Ease of maintenance

Projects were selected for three implementation phases based on these criteria and the information noted under the priority projects. Implementation phases are summarized in the table below.

Corridor Implementation Phases

Phase	Timeline	Number of Segments
I	0-5 years	3
II	5-10 years	12
III	10-20 years	11
Beyond 20 years	20+ years	3

Note that three of the 29 segments (the segments north of Dos Rios and in the Eel River Canyon) are considered to be unlikely candidates for implementation in the 20-year time frame of this Plan.

Cost estimates have been developed for the Phase I, II, and III projects based on available data and unit costs for Class I bike paths and soft (unpaved) trails. The total cost to complete a Class I bike path and soft surface unpaved trail in Mendocino County is estimated to be $72,125,525. Engineering cost estimates on the three Phase I projects were developed by project consultants based on the preliminary engineering designs and available information. The total cost of the priority projects is estimated to be $5,042,525.

Conclusion

The Mendocino County Rail-with-Trail Corridor Plan provides a framework for initial planning of portions of the NWP corridor in the county. The recommendations and information provided in the plan will support implementation of the priority projects and provides high level guidance for development of the rail-with-trail corridor over time.

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1. Introduction

This chapter provides an overview of the Mendocino County Rail-with-Trail Corridor Plan (Plan) scope, purpose, and approach.

1.1 Overview

The Mendocino Council of Governments (MCOG) seeks to identify a vision and implementation strategy for a multi-use RWT along the Northwestern Pacific Railroad right- of-way (NWP ROW), which runs the entire north-south length of inland Mendocino County. Although the Plan studies the entire NWP corridor from the Sonoma County line to the Humboldt County line, the main focus is on the areas from Hopland to Willits, where there are significant population pockets. The Plan identifies priority RWT candidate projects (Phase I projects) for the Cities of Ukiah and Willits, and the County of Mendocino, for presentation to local policy boards (City Councils/Board of Supervisors) and the North Coast Railroad Authority (NCRA), which has jurisdiction over the railroad corridor. The Plan also considers opportunities along the corridor for inter-regional connections of the trail, bicycle and pedestrian network.

The Plan provides jurisdictions along the rail corridor (City of Ukiah, City of Willits, County of Mendocino, and Caltrans) with information to assist with implementation of the RWT. The Phase I candidate projects have been developed to a conceptual level that each entity may bring forward to the environmental, design, right-of-way and construction phases. The Plan may be used by jurisdictions to position projects to take advantage of various federal, state, regional, or local funding opportunities as they become available. The Plan may also be applied as a tool that local agencies can use for guidance on how to shepherd candidate RWT projects through the approval process of the NCRA, pursuant to the NCRA's adopted "Rails with Trails Guidelines."

This Plan is funded by Caltrans' Community Based Transportation Planning (CBTP) grant funds and local matching funds. For this Plan, MCOG consulted with the County of Mendocino, the cities of Willits and Ukiah, NCRA, and Caltrans. This Plan has been developed with community, stakeholder, and public agency input throughout its preparation.

1.2 Project Purpose and Approach

1.2.1 Project Purpose

Local interest in a RWT along the NWP ROW was identified in the City of Ukiah Bicycle Master Plan (1999), the City of Ukiah NWP Rail Trail Feasibility Study (2002), the Mendocino County Regional Bikeway Plan (2006), the City of Willits Bicycle and Pedestrian Master Plan (2009), the City of Willits 5-Year Redevelopment Plan, and the Wagenseller Neighborhood Pedestrian Plan. The Mendocino County Regional Bikeway Plan identifies the Willits and Ukiah NWP Rail Trails as High Need projects.

A RWT along the NWP ROW would complete a missing link in the City of Ukiah's bicycle network, creating a safe north-south connector linking bicyclists to residential neighborhoods, schools, shopping centers, employment centers, government offices, and services. The connected trail would provide a direct connection with the existing Class II bikeway on East Gobbi Street. This connection will provide greater flexibility to

bicycle commuters in reaching various destinations. In addition, in the event that passenger service is restored on the NWP Railroad, the trail will provide a direct link to the Ukiah Railroad Depot.

In the City of Willits, a RWT along the NWP ROW would provide recreational opportunities and a viable transportation alternative to the traffic congestion on Route 101. Build-out of the southeast annexation area, including industrial and residential uses, will require an alternative transportation system to help reduce potential vehicular impacts that are associated with urban development. Projects which would provide non-motorized alternatives for local trips would help to ease the local congestion problem.

MCOG recognizes that a corridor plan is needed to identify a comprehensive vision for the RWT, to determine how the RWT may be oriented in relation to the rail line, how it would cross various streets and drainages, and how it might accommodate user groups in urban and rural environments, and to estimate construction and maintenance costs. A RWT along the NWP ROW would need to be approved by NCRA and would be subject to requirements specified in a lease agreement.

1.2.2 Project Approach

This Plan builds upon previous planning efforts and incorporates community, stakeholder, and public agency input. The Plan approach includes review of relevant goals and policies from the MCOG, County of Mendocino, City of Willits, City of Ukiah, and NCRA planning documents, a high level analysis of existing conditions and opportunities and constraints associated with construction and operation of a RWT along the NWP ROW, review of RWT design parameters, and working with the public to identify potential RWT user groups, preferences, and priorities.

Agency, stakeholder, and public input guided preparation of the Plan

The Plan identifies priority projects in the more urbanized portions of the corridor where informal use of the NWP ROW already exists. Phase I priority projects are located within the Cities of Ukiah and Willits, and the County of Mendocino. The Phase I projects are developed to a conceptual design level, including preliminary cost estimates, for presentation to local policy boards. The Plan also identifies key opportunities for long term project segments that will require further analysis.

Agency Coordination

The project team worked closely with the numerous agencies that have an interest in the RWT. The primary vehicle for collaboration has been the Technical Advisory Group (TAG) consisting of representatives of those agencies and organizations with an implementation, management, and/or maintenance role in a future RWT. The TAG includes representatives from MCOG, Caltrans, the County of Mendocino, Cities of Ukiah and

Willits, and the NCRA. The TAG met throughout the preparation of the Plan[2] and reviewed all working papers.

Public Outreach

The community has been involved in developing the Plan from the start of the project. Project specific public outreach efforts include:

- **Initial Public Workshops.** The first and second public workshops for the Plan were held on Wednesday, September 21, 2011 in Willits and on Thursday, September 22, 2011 in Ukiah. Approximately 70 people attended the workshop in Willits and approximately 30 people attended the workshop in Ukiah. The workshops consisted of an open house, a presentation, and a break-out session. The presentation: described the background of and previous planning efforts for a RWT along the NWP ROW, the project scope, and the project schedule; presented an overview of the NWP corridor in Mendocino County; presented the three Phase I projects, including general opportunities and constraints associated with each project; and described the break-out session exercise, including topics the project team sought feedback on. A questions and answer period followed the presentation.

  Prior to and following the presentation, participants reviewed presentation boards showing the recommended countywide trail segments; preliminary trail alignments for the County, Willits, and Ukiah Phase I projects; and possible amenities to include along the trail (such as benches, bicycle parking, lighting, and landscaping). Workshop participants were asked to vote for their preferred trail amenities and trail surface types. Participants were also asked to comment on their preference for the Willits Phase I project; two options were presented.

Public workshop attendees peruse presentation boards and talk with project team members

- **Third Public Workshop.** A third public workshop was held on Tuesday, March 13, 2012 in Ukiah for the public and previous workshop participants to review the Public Draft of the Mendocino County Rail-with-Trail Corridor Plan and gather input on progress of plans and designs for the three Phase I RWT projects. Approximately 35 people attended the workshop, including representatives from local law enforcements, trail advocacy groups and participants from the previous workshops.

  The third workshop consisted of an open house, brief formal presentation, and question and answer period. The open house portion at the beginning and close of the meeting allowed workshop

[2] TAG meetings were held on September 12, 2011, November 15, 2011, and January 18th, 2012.

participants to review presentation boards showing detailed alignments of the priority trail segments within Ukiah, Willits, and the unincorporated county north of Ukiah and recommended countywide trail segments for future trail phasing. The formal presentation described the project scope and background, an overview of the NWP rail corridor throughout Mendocino County and summarized input from the first series of workshops held in September. The presentation also included more detail on Phase I trail segments' plans and designs and potential future phasing of other rail-with-trail segments along the rail corridor. A question and answer period followed the presentation and elucidated many public safety considerations along the proposed trail segments, including signage for trail users and motorists, among other suggestions and comments. More detailed comments from this workshop are compiled in Appendix A.

- **Workshop Outreach.** Outreach for each public workshop was a multifaceted effort that utilized diverse media outlets and existing relationships with local decision-makers, trail advocates and other stakeholders. A robust stakeholder list was created utilizing stakeholder lists from previous MCOG projects and reaching out to local bicycle shops, trail advocacy groups, social service groups, neighborhood associations, tribes, and fire and law enforcement. The three public workshops and their intended outcomes were noticed through an email invite to known stakeholders, press releases in local newspapers, public service announcements (PSAs) to local and regional radio stations, a link the MCOG website, and flyers at local businesses and public locations throughout Ukiah, Willits and Redwood Valley. Notice of the workshops were also given in Spanish through translation of flyers and PSAs for Spanish language social service organizations and print and radio media. Members of the TAG also assisted in posting flyers and noticing the workshops through email. Participants of the first two workshops were also sent direct email invitations to the final workshop.

2. Background

This chapter provides background information on the Mendocino County RWT project, including a description of the NWP corridor, the RWT project goals, relevant planning documents, key partner agencies involved in planning and/or future operation and maintenance of the RWT, and general opportunities and constraints associated with a RWT along the NWP right-of-way.

2.1 Overview of Corridor and History

Mendocino County lies within the northern extension of California's Coastal Ranges. These mountains are characterized by a series of southeast to northwest trending ridges which are separated occasionally by valleys. The county's diverse geographic regions have affected land use and settlement patterns. The coastal terrace and inland river valleys contain the population centers, rural residential settlements, and agricultural uses. Timber, grazing, and rural residential development characterize the Coast Range. Other inland areas are largely mountainous and forested with limited population centers. The bulk of the population in Mendocino County is concentrated in a few areas of the county. Year 2010 California Department of Finance population figures place Mendocino County population at 87,841. This figure includes an unincorporated population of 59,156, and an incorporated population of 28,685. Four cities share the incorporated population: Ukiah (16,075), Fort Bragg (7,273), Willits (4,888), and Point Arena (449). Ukiah, Talmage, Calpella, and Redwood Valley make up the largest single population concentration. Fort Bragg and the coastal area southward to the Navarro River is another population center. Willits, the surrounding Little Lake Valley and Brooktrails subdivision comprise the only other large settlement area in the county.

Doubleheaded passenger train stops at the Willits Station in the early 1930s
Source: http://www.sunnyfortuna.com/railroad/nwppics3.htm

The Plan area follows the NWP ROW, which extends the entire north-south length of inland Mendocino County. In its entirety, the NWP ROW extends from the Arcata/Eureka area in Humboldt County to the San Rafael area in Marin County. Rail service along the NWP tracks between Willits and Eureka began in 1914; at this time, the line was used for regular freight and passenger service between Sausalito and Eureka[2]. The railroad line has been heavily damaged in storms and has not been in operation since 1998. The NWP segment in Mendocino County is managed by the NCRA, which was formed by the State Legislature in 1989 to ensure the continuation of railroad service in northwestern California. Although passenger rail service does not currently exist on the NWP in Mendocino County, the NCRA signed an agreement in 1995 with NWP to operate service between Healdsburg and Willits. RWTs within the portions of the NWP ROW managed by

[2] Source: http://www.northcoastrailroad.org/MCRS/Introduction.htm

the NCRA must be approved by the NCRA Board of Directors and RWT applications are reviewed on a case-by-case basis.

The only other rail corridor in the county is an east-west route (the Skunk Train route) owned by Mendocino Railway that extends from Willits to Fort Bragg, a distance of approximately 40 miles. The Mendocino Railway line also provides mail service along the line. The line is an essential means of transportation for some small communities between Fort Bragg and Willits.

Beginning in the 1860s and continuing through the 1890s, railroads were built north of San Francisco in the Marin and Sonoma areas and the Eureka area. The San Francisco & Northern Pacific Railroad (later the California Northwestern Railroad) built northward from Tiburon and Santa Rosa, with the rails being extended from Cloverdale to Ukiah in 1889 and Willits in 1902. The Northwestern Pacific Railroad, which was co-owned by the Santa Fe and Southern Pacific Railroads, was incorporated in 1906, and built simultaneously from Eureka southward and Ukiah northward. The 'golden spike' was completed in 1914 that finally linked the two sections—and gave Mendocino County a rail link to San Francisco and the rest of the country.

For 92 years the NWP ran trains through Mendocino County, with Willits being a major yard for the system. Lumber mills and other customers in the county provided significant traffic to the system. Passenger service was discontinued in 1958, and in 1984 the Southern Pacific (owner of the NWP) sold the railroad north of Willits to the Eureka Southern railway. The Eureka Southern continued to operate in the high-maintenance Eel River Canyon until it was sold to the NCRA in 1992. The line north of Willits was closed after major flooding.

Government agencies, including the North Coast Railroad Authority (formed in 1989), took over control of the railroad south of Willits and assumed complete control from the Southern Pacific in 1996. In 1998 the entire line was closed due to flood damage, and no trains have operated on the NWP in Mendocino County since that time. With restoration of the railroad in Marin and Sonoma Counties, rail service started again up to Windsor in 2011.

The Eel River Canyon is one of several portions of the NWP rail line that have experienced heavy storm damage

Figure 2-1: Rail-With-Trail Corridor Plan Area (Northwestern Pacific Railroad Corridor)

2.2 Goals for the Project

The following goals guided the development of the corridor design parameters, short and long-term projects, and implementation strategies in this Plan.

GOAL 1: Improve Non-Motorized Mobility and Accessibility

Expand and enhance non-motorized mobility for persons living in, working in, and visiting Mendocino County, including access to and connections with other transportation modes.

GOAL 2: Preserve the Transportation System

Design a RWT that will efficiently utilize the NWP corridor, support the region's current blueprint planning efforts which calls for improved options for bicycling, walking, and equestrians, and allow for future rail service along the NWP line.

GOAL 3: Enhance Public Safety and Security

Design the RWT segments to respond to safety and security needs as well as neighborhood privacy concerns.

GOAL 4: Reflect Community Values

Promote community values and identity, including use by multiple user groups, such as bicyclists, pedestrians, and equestrians (where feasible) and incorporate public involvement in decision making processes.

GOAL 5: Enhance the Environment

Assist in greenhouse gas reduction by encouraging and facilitating non-motorized vehicle trips.

GOAL 6: Allow for Regional Connections

Provide non-motorized connections to adjacent streets and land uses including transit, shopping, institutional, office, and residential areas.

GOAL 7: Implementation Funding

Develop a funding, financing, and implementation strategy identifying eligible grant sources and/or potential development requirements supporting construction.

2.3 Vision for a Rail-with-Trail Corridor in Mendocino County

Residents of the county envision use of the rail corridor for walking and cycling within and between communities. Restoration of freight rail service in Mendocino County—at least as far north as Willits—is also a priority for the County. Coordinating the desire for the return of freight service and use of the corridor for a shared use trail is at the heart of the vision for this Rail-with-Trail Plan.

The intent of the plan is to provide recommendations that will support the use of the NWP corridor for a multi-purpose trail, where feasible, without impacting the future rail service. The Rail-with-Trail will be designed to provide important recreation and transportation resources to local residents, as well as attract visitors. The long term implementation vision for the corridor is focused on developing segments in high priority areas first, with later sections being built as funds become available and demand warrants investment.

2.3.1 Eel River Canyon

The NWP north of Dos Rios and in the Eel River Canyon is not likely to be restored to rail service within a 20 year time frame. Current conditions of the railroad corridor are varied with significant deterioration of the railroad bed and right of way in some areas. In addition, limited population and access points within the Canyon will make development of a formal trail challenging and usefulness limited. As such, formal trail development in the Canyon is likely beyond the implementation period of this plan.

The Eel River Canyon is rugged and isolated

2.4 Summary of Relevant Plans and Policies

The planning documents described below establish goals and policies to guide development of a RWT along the NPW ROW and provide a foundation for this Plan.

2.4.1 County of Mendocino General Plan (2009)

The Development Element of the County of Mendocino General Plan provides for expanded pedestrian and bicycle systems in support of improved community livability and reduced vehicle emissions. Connecting or expanding the county's system of pedestrian, bicycle, and trail routes is emphasized, as is providing improved linkages between modes of transportation. Relevant policies are presented below:

- Policy DE-155: Connect pedestrian, bicycle and trail routes to form local and regional networks. Link pedestrian, bicycle and trail routes with other transportation modes to maximize local and regional non-motorized transportation.
- Policy DE-159: Preserve abandoned railroad right-of-way for trail use and investigate the feasibility of collocating bicycle paths on unused portions of existing rights-of-way.
- Policy DE-178: The County will actively pursue federal, state and private grants to fund the construction of parks and trails of all types, including acquiring historical or archeologically significant land for parks.
- Policy DE-180: Promote development of a network of pedestrian/hiking, bicycle and equestrian paths or trails linking public parks and recreation facilities to schools, residential neighborhoods, commercial areas and employment centers, and tourist facilities.
- Policy DE-228: Design and maintain public and community spaces to facilitate public safety as well as attractiveness (i.e., place 'eyes' on public places such as streets, parks, schools, sidewalks, pathways, trails, etc.).

2.4.2 Mendocino County Regional Transportation Plan (2010)

The Policy Element of the Regional Transportation Plan establishes goals and policies for each transportation mode that comprises the transportation system in Mendocino County, including bicycles. Bicycle transportation is addressed in the Non Motorized Transportation section of the Regional Transportation Plan. The goal for non-motorized transportation is as follows:

Goal:

Provide a safe and useable network of bicycle and pedestrian facilities throughout the region as a means to lessen dependence on vehicular travel and improve the health of Mendocino County's residents.

Objectives and Policies:

- Maximize funding opportunities for local agencies to develop and construct bicycle and pedestrian facilities.
    - Update Regional Bikeway Plan on a timely basis to ensure local agency eligibility for Bicycle Transportation Account funds and other grant programs.
    - Provide support to local agencies in pursuing grant funding such as Safe Routes to Schools and the Bicycle Transportation Account.
    - Continue to reserve and allocate 2% of Local Transportation Funds for bicycle and pedestrian projects.
    - Seek funding for needed improvements, and consider RlP funding and other state and federal grant sources.
- Provide a non motorized transportation network that offers a feasible alternative to vehicular travel.
    - Prioritize improvements providing access to schools, employment and other critical services.
    - Prioritize projects that link to an existing facility or provide connectivity.
    - Fund planning activities in MCOG's Work Program to identify priority improvements for commute purposes, such as safe routes to schools plans.
    - Consider the addition/improvement of bicycle and pedestrian facilities when planning and implementing local street and road improvements.
- Encourage healthier lifestyles through increased walking and biking.
    - Coordinate with health organizations to promote alternative forms of transportation.
    - Support educational programs to promote increased walking and biking.
    - Encourage development adjacent to existing pedestrian and bicycle systems.
- Improve property value and strengthen local economies through more accessible commercial and residential areas.
    - Encourage the addition of pedestrian and bicycle improvements in local business areas and existing residential areas.

2.4.3 Mendocino County Regional Bikeway Plan (2006)

MCOG's Regional Bikeway Plan incorporates proposals for bikeway improvements within all jurisdictions of Mendocino County into a single document. Key elements of the Regional Bikeway Plan include a description of existing and proposed bikeways, a short-range implementation plan, non-motorized transportation policies and a description of funding sources. The Regional Bikeway Plan provides guidance to local agencies regarding existing policies and programs that enhance bicycle transportation in Mendocino County.

In Willits, the NWP Rail Trail from E. Hill Road to the High School is listed as a High Need project. Ukiah NWP Rail Trail from Ford Road to Norgard Lane is listed as a High Need project[3].

Existing and proposed bicycle parking facilities are depicted on maps for the priority bikeway projects in the Short Range Bikeway Implementation Plan. The Short Range Implementation Plan includes the following projects:

- In Willits, the 1.90-mile long NWP Rail Trail from E. Hill Road to the High School. This Class I bike path would provide an important north-south link for bicyclists on the east side of town, starting at Willits High School and eventually terminating at East Hill Road. The railroad right-of-way alignment is already well used by pedestrians and bicyclists, especially between East Valley and East Commercial Streets. Field observation reveals that a pathway could be constructed at least 15 feet from the centerline of the railroad tracks, which is the minimum distance most rail-trails are set back from active tracks.

  The proposed length of the rail-trail bike path would be 9,900' (1.9 miles) and it could be constructed in the following phases for approximately the amount specified in parentheses: (1) East Commercial Street to High School (1,500', $135,000); (2) San Francisco Avenue to East Commercial Street (1,900', $240,000); Shell Lane to San Francisco Avenue (3,500', $455,000) and (4) East Hill Road to Shell Lane (3,000', $385,000).

  A rail-trail bike path on the east side of town would provide a viable transportation alternative to the existing traffic congestion on Route 101. It would also provide recreational opportunities. Eventual build-out of the southeast annexation area, including industrial and residential uses, would benefit from this alternative transportation system that would help reduce potential vehicular impacts associated with urban development.

  The RWT would connect with an existing bikeway on E. Commercial Street, east of the NWP rail line.

- In Ukiah, the 0.78-mile long NWP Rail Trail from Clara Avenue to E. Gobbi Street involves construction of a section of all-weather bicycle and pedestrian trail within the NWP Railroad right-of-way. The proposed NWP Rail Trail will be an asphalt paved path, a minimum of 8-feet in width. Also included will be a fence to provide a physical barrier between the proposed trail and the railroad, and lighting along the trail for added security during hours of darkness. Bicycle commuters headed for work, school, and other destinations in Ukiah will use the project.

[3] Note that the NWP ROW from Ford Road to Brush Street is within the County, but outside of Ukiah's city limit.

The project will complete a missing link in the City's bicycle network, creating a safe north-south connector linking bicyclists to residential neighborhoods, shopping centers, employment centers, government offices, and services. The nearest north-south optional route is State Street. With four lanes and curbside parking, State Street is not a desirable route for bicycle commuters.

This project will expand on the City's network of bicycle facilities, providing important connectivity to schools, downtown shopping, public facilities, and residential areas, etc. The project will connect with an existing Class II bikeway on E. Gobbi Street. In addition, in the event that passenger service is restored on the NWP Railroad, the trail will provide a direct link to the Ukiah Railroad Depot.

2.4.4 Ukiah Bicycle Master Plan (1999)

The City of Ukiah Bicycle Master Plan proposes a primary north-south Class I Bikeway in the NWP ROW within the City limits, a primary north-south system of Class II bike lanes on Dora and Bush Streets, and a series of improved east-west bikeways connectors on Perkins, Gobbi, and Talmage Streets. A Class I bikeway along the NWP ROW is ranked as a top priority short-term implementation project. This project is described as a bike path located in the west side of the tracks, set back about 25 feet from the centerline of the tracks within the 80 foot wide ROW. Access across the tracks onto the RWT from the east will be provided at established crossings.

2.4.5 Ukiah NWP Rail Trail Feasibility Study (2002)

In 2002, the City adopted the Ukiah NWP Rail Trail Feasibility Study, which studied the feasibility of a RWT along the NWP ROW from Brush Street to Talmage Street. The purpose of the study was to provide background on the project history and goals, identify opportunities and constraints associated with the RWT, provide design standards, estimate potential costs, and identify future funding opportunities.

A summary of the project goals is presented below:

Goal 1: The NWP Rail Trail should be located, wherever possible, within the railroad ROW so as to organize and manage trail use in the corridor and to provide an alternative to using heavily traveled parallel roadways.

Goal 2: Serve major and minor destinations, provide a direct north-south connection in the City, and follow routes already used by bicyclists, pedestrians, and others.

Goal 3: Build upon and connect to existing and planned trails wherever possible.

Goal 4: Maximize safety along the railroad corridor by organizing and managing pedestrian and bicycling activity, and maximizing separation between the trains and trail. This can be accomplished by appropriate design and operation of the facility.

Goal 5: Minimize impacts to adjacent property owners through appropriate design and operation of the facility.

Goal 6: Design the facility to meet state and federal standards, including the American with Disabilities Act.

Goal 7: Provide separate tread ways for pedestrians and bicyclists, wherever feasible.

Goal 8: Design grade crossings at roadways to maximize trail user safety and maximize convenience, while minimizing negative impacts to traffic capacity.

Goal 9: Avoid new railroad grade crossings and utilize existing roadway crossings as much as possible.

Goal 10: Develop a preliminary design theme that will integrate the NWP Rail Trail with the City of Ukiah and take full advantage of opportunities for linear open space parks within the NWP corridor.

The Schematic Trail Plan designates the proposed trail as 8 to 10 feet wide with a 4 foot gravel shoulder. Wherever possible, it is recommended that the trail be set back at least 25 feet from the centerline of the tracks, or at least 15 feet when there is a vertical separation of more than 10 feet. The wide area of the ROW, north of Perkins Street is identified as a potential park site. Recommended roadway crossing improvements for the study area roadways are as follows:

- Clara Street: crosswalk and signage
- Mason Street: parallel to trail; barrier may be needed
- Perkins Street: flashing signal and protective signage
- Clay Street: potential connection to Downtown; no existing crossing; new crossing would require CPUC approval
- Gobbi Street: flashing signal and protective signage

2.4.6 Wagenseller Neighborhood Bicycle and Pedestrian Connections

In the spring of 2011, the City of Ukiah responded to an RFP from the Healthy Transportation Network (HTN) for a grant of a Technical Assistance Consultant. The grant was awarded to assess the potential for improving bicycle and pedestrian connections to the Wagenseller Neighborhood. The HTN Team conducted a site visit and community meeting in August, 2011. The feedback and recommendations developed from this community process indicate strong public support for the Rail-with-Trail from the neighborhood. The Wagenseller Neighborhood Association has advocated for extending the Phase I project north to Ford Street, to connect their neighborhood to the proposed trail segment.

Extending the Rail-with-Trail north of Clara will require either repair of an old trestle over Orr Creek (between Clara and Ford), or construction of a new bicycle/pedestrian bridge at that location. Either option will require significant funding and design. The recommendations developed by the HTN include options for the potential overcrossing as well as recommendations for an on-street connection and wayfinding.

2.4.7 Willits Bicycle and Pedestrian Specific Plan (2009)

The Bicycle and Pedestrian Specific Plan identifies potential pedestrian and bicycle routes, standards for sidewalks and pathways, and goals and policies for implementing and directing future projects. Safety is a primary reason for improving bicycle and walking conditions in Willits. Concerns about safety are the single greatest reason people don't commute by bicycle.

The following goals guide both bicycle and pedestrian planning in Willits.

- **Goal 1: Improve Safety and Education.** To make the City's circulation system safer for all pedestrians and bicyclists, and enhance education for bicyclists, pedestrians, and motorists.
- **Goal 2: Provide Greater Access.** To provide a system of paths, lanes, routes, and support facilities that enable and encourage convenient pedestrian and bicycle circulation for all transportation needs, including travel to work, school, shopping, or recreation activities.
- **Goal 3: Maintain and Promote a High Quality of Life.**
- **Goal 4: Establish an Effective Implementation Strategy.** Incorporate the needs of bicyclists and pedestrians into the City's existing programs, policies, plans, and operations, and involve all aspects of the community and local agencies in planning and implementing improved opportunities and bicycle and pedestrian travel.

The Bicycle and Pedestrian Specific Plan identifies the NCRA RWT as a Phase I project, stating that the alignment is already well used by pedestrians and bicyclists, especially between East Valley and Commercial Street.

2.4.8 Willits Safe Routes to School Plan (2009)

The Willits Safe Routes to School Plan aims to maintain and improve safety for students traveling to and from school by bicycle and on foot. Within Willits, only the Willits High School is located adjacent to the NWP ROW. Nearby schools include Community Day School (located on E. Commercial Street, approximately 500 feet east of the NWP ROW) and Willits Charter School (located on US 101, approximately 0.3-miles southeast of the NWP ROW). The Willits Safe Routes to School Plan recommends bike lanes or routes along East Valley Street, Railroad Avenue, and along a possible future road that would connect Railroad Avenue with Baechtel Road.

2.4.9 Willits Comprehensive Self-Evaluation ADA Access & Transition Plan (2006)

This plan evaluates access along a number of streets and intersections in the project area and contains recommendations and cost estimates for improvements to meet ADA standards.

2.4.10 Willits Redevelopment Agency Five-Year Implementation Plan (2008)

Projects identified in the Five Year Plan include a connector between Railroad Avenue and Baechtel Road and a Creekside Trail Greenway system. Opportunities for both of these projects would be enhanced by the Rail-with-Trail project.

2.4.11 Baechtel Road-Railroad Avenue Corridor Study (2004)

The Baechtel Road-Railroad Avenue Corridor Study is a conceptual community design for trail and roadway improvements along Railroad Avenue connecting with Baechtel Road. The Rail-with-Trail project would complement future improvements along this corridor.

2.5 Summary of Key Partner Agencies

2.5.1 Key Partner Agencies

The key stakeholders for this project were part of the Technical Advisory Group (TAG) whose role was to provide input to the planning and design process. TAG members represented:

- Mendocino Council of Governments (MCOG)
- City of Ukiah
- City of Willits
- County of Mendocino
- North Coast Railroad Authority (NCRA)
- California Department of Transportation (Caltrans)

2.5.2 Additional Stakeholders

While the key partner agencies have a primary role in regulating, implementing and/ or maintaining the Rail-with-Trail, there are many other stakeholders that have an interest in the corridor and its use for walking and bicycling:

- Ukiah Unified School District
- Willits Unified School District
- Ford Street Project
- Ukiah Community Center
- Nuestra Casa
- Ukiah Chamber of Commerce
- Willits Chamber of Commerce
- Ukiah and Willits Senior Centers
- Willits Healthy Action Team
- Ukiah and Willits bicycle and trails groups
- Eel River Valley trails groups
- Native American tribal organizations in the project area (Pinoleville Rancheria, Coyote Valley Reservation, Guidiville Rancheria, Hopland Reservation, Redwood Valley Rancheria, and Sherwood Valley Rancheria), Consolidated Tribal Health
- Wagenseller Neighborhood Association (Ukiah)

2.6 General Corridor Conditions

2.6.1 Bicycle and Pedestrian Facilities

The greatest concentration of bicycle facilities in Mendocino County, which are generally Class II bike lanes or Class III bike routes, are in the City of Ukiah. Within central Mendocino County, bicycle travel occurs between the outlying areas and communities such as the eastern hills of the Ukiah Valley and Ukiah. The 2006 Mendocino County Regional Bikeway Plan, adopted by MCOG, the Board of Supervisors, and the City of Ukiah, identifies projects for funding. An update of the 2006 Regional Bikeway Plan is currently underway. The cities of Ukiah and Willits have adopted Bicycle and Pedestrian Plans.

Bicycle and pedestrian facilities in Mendocino County exist primarily in urban areas, such as along Gobbi Street in the City of Ukiah

Sidewalks and pedestrian paths are located within urban areas in the county. Within the central portion of the county, the downtowns of Ukiah, Willits, and Hopland experience the most significant pedestrian traffic. The County General Plan states that some areas in the unincorporated county with minimal walkways or intermittent walkways could attract more pedestrian trips with enhanced pedestrian facilities. These areas are generally on the edge of incorporated areas, such as the State Street corridor north and south of Ukiah. For pedestrian activity to increase as the county develops, it may be necessary to construct continuous accessible pathways and/or curbs, gutters, and sidewalks along existing and future roadways that ensure connectivity as the community grows.

2.6.2 Corridor Conditions: South Section

The southern section of the NWP corridor (see **Figure 2-2**) starts just south of the Sonoma County line at McCray Road. From the county line to south of Hopland, the tracks closely follow the Russian River through narrow canyons. The tracks continue through the community of Hopland and other small settlements. For the next 20 miles the railroad goes through rolling hills and vineyards, generally following US 101 and the Russian River. The corridor proceeds northward through the Ukiah Valley and continues through the heart of Ukiah to its northern city limits at Brush Street. The corridor is generally in good condition except in the canyon areas, where there are numerous landslides and washouts. This section has one major trestle and two tunnels, including a 1,269 foot long tunnel just north of the county line.

NWP Corridor in the City of Ukiah (facing north)

2.6.3 Corridor Conditions: Central Section

The central section of the NWP corridor (see **Figure 2-2**) begins just outside of Ukiah at Ford Road and continues north to Longvale. From Ukiah, the corridor complements the topography by making a large loop as the corridor bisects rural Redwood Valley. North of Redwood Valley the corridor climbs up over a summit (Ridgewood), which is the highest elevation point on the entire NWP corridor (1,913 feet), before descending into Willits. Willits has the largest yard on the NWP corridor (8 tracks), a turning wye, refueling facility, connection with the Mendocino Railway (Skunk Train). Following the upper reaches of Outlet Creek and generally following US 101, the corridor enters Little Lake Valley and continues through Arnold until it reaches Longvale. The corridor is generally in good condition in this section, with a few landslides and washouts on the northern end. This section has one major trestle, 11 bridges, and 3 tunnels (the longest of which is 881 feet).

NWP Corridor in unincorporated Mendocino County, between Ford Road and Lake Mendocino Drive (facing south)

NWP Corridor in the City of Willits (facing south)

2.6.4 Corridor Conditions: North Section

The north section of the NWP corridor (see **Figure 2-2**), which follows Outlet Creek and the Main Fork of the Eel River, is located in a narrow canyon surrounded by rugged hills and mountains spotted with the occasional ranch and home. The Eel River itself beyond Dos Rios has no paved road access, and is one of the most remote areas in the state. This section also is notable for the high number of landslides, washouts, and collapses of embankments in the corridor, making development of a formal trail corridor in this section unlikely within the 20-year planning horizon of this Plan. In many areas the track and roadbed have been washed away completely. In addition, there are 9 bridges and 14 tunnels in this section, the longest tunnel being 656 feet long.

NWP Corridor in unincorporated Mendocino County, north of Dos Rios (facing north)

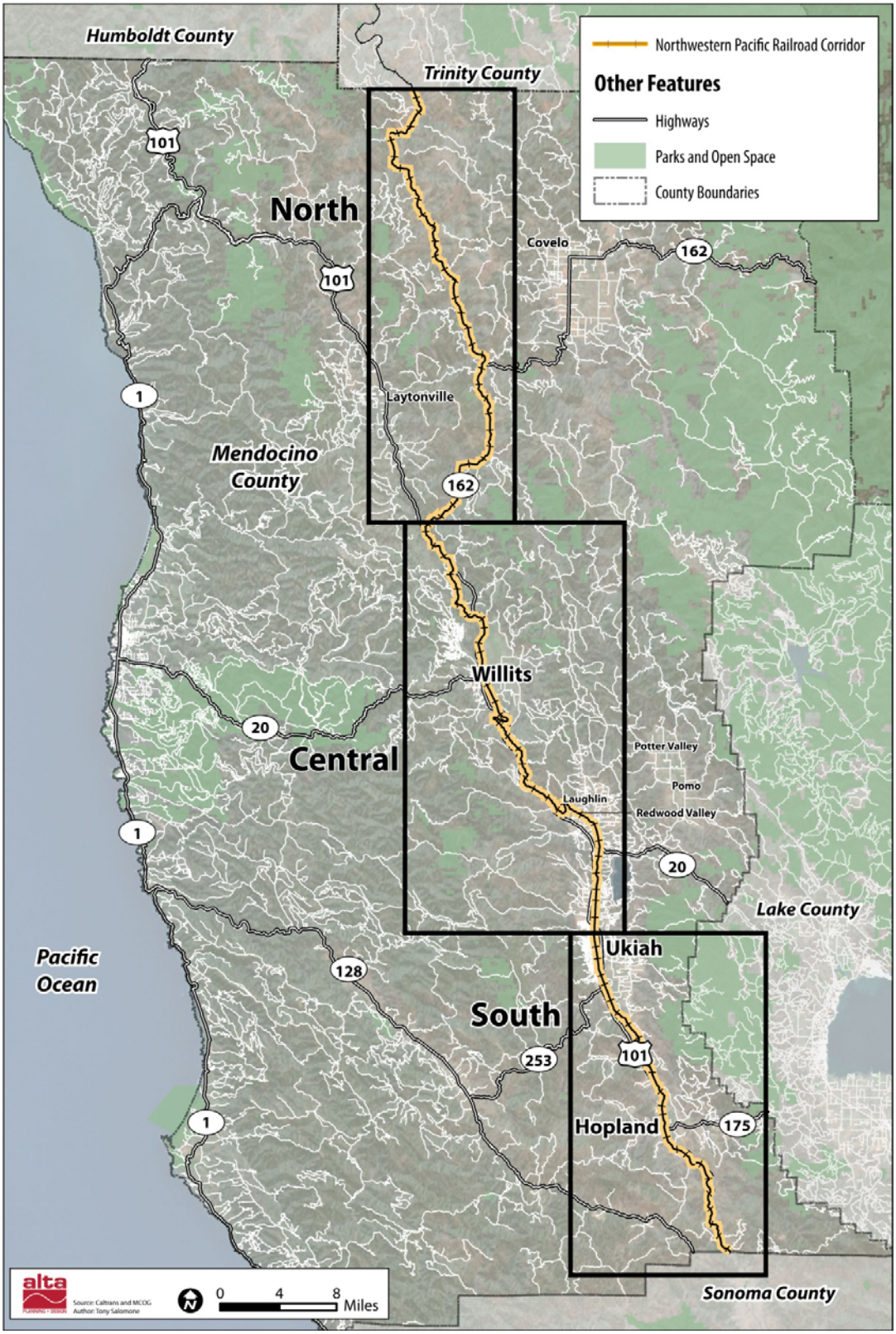


Figure 2-2: Rail-With-Trail Corridor Plan Area South, Central, and North Sections

3. Needs Assessment

This chapter describes and estimates potential user groups for the RWT and discusses benefits associated with its use. It addresses who would use the RWT (local residents or tourists), how the RWT would be used (walking, bicycling, horseback riding), and connections to non-motorized facilities. This chapter also identifies the benefits of a RWT along the NWP ROW, including economic benefits.

3.1 Potential User Groups

A RWT along the NWP ROW is expected to be an asset for local residents and visiting tourists. Both local and visiting RWT users would engage in many of the same activities, though some activities may be favored by specific user groups. This is important to understand when analyzing RWT demand and its potential economic benefits.

Public comment collected in Ukiah and Willits relates that RWT users of all ages and abilities would use the trail for transportation and recreation. The RWT would serve a wide variety of users, some of whom have very specific design, access, surfacing, facility, and other needs. Those who access the RWT using an automobile would require a parking area. All groups would benefit from facilities such as restrooms, benches, interpretive materials/signs, orientation and roadside directional signs, and water spigots strategically placed along the RWT. Primary user groups and their specific needs are presented below.

3.1.1 Pedestrians

Pedestrians using the RWT need unimpeded and pleasant access to adjacent land uses, connecting walkways, intersection crossings, transit stops, and all manner of adjacent attractors. Pedestrians are the most vulnerable users of the local transportation network and should be separated from other high speed travel modes to the fullest extent feasible. Local businesses are locations for shopping and commuting trips so pedestrians should have simple access to them from the RWT. RWT users would also want to access transit stops near the NWP ROW, therefore access to bus stops should be safe and direct. People parking vehicles become pedestrians when they leave their car. Therefore, the RWT should provide convenient parking access.

Providing for pedestrian safety in a multi-modal context that includes auto, bus and bicycle traffic requires clear delineation of pedestrian-only areas and clear delineation of areas where all transportation modes should exercise caution and reduce speeds. Pedestrians are deterred from paths when they are adjacent to traffic and speeding bicyclists. Therefore the design of the RWT should buffer pedestrians from traffic and consider a design speed suitable for mixing pedestrians and bicyclists where it is not possible to provide separation. In downtown areas, the RWT design should delineate pedestrian and bicycle separation where feasible.

Runners and runners with jogging strollers generally prefer a softer surface and a natural-looking trail environment over paved surfaces.

3.1.2 Bicyclists

Commuter Bicyclists

RWT users making commute and other utilitarian trips consist of riders of all ages. These trips are between work and home as well as to other locations with specific purposes, such as a store, school or park. Typically utilitarian types of trips account for about one-third of all weekday person trips. This represents a substantial opportunity for bicycle and pedestrian usage because of the link to commercial, residential, neighboring cities, and transportation.

Common characteristics of these types of trips include:

- A range in length from several blocks to ten miles.
- A desire to use the most direct and fastest route available.
- Major concerns include changes in weather (rain and heavy fog), riding in darkness, personal safety and security.
- In general, a concern about how to navigate intersections with no control signs (i.e., stop or yield signs) or signal controls.
- A preference for routes where they are required to stop as few times as possible, thereby minimizing delay.
- Specifically for commuters, these trips typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with motor vehicles.

Recreational Bicyclists

Recreational use generally falls into one of two categories: exercise or sightseeing. Recreational bicyclists can be a varied user group in and of themselves, since the term encompasses a broad range of skill and fitness levels, from a racer who rides 100-miles each weekend, to a family with young children who are bicycling while on vacation. Regardless of the skill level of recreational users, directness of route is typically less important than being in scenic surroundings, having amenities like restrooms and water fountains, and being on routes with few traffic conflicts. Amenities such as visual interest, shade, protection from wind, moderate gradients, and artistic or informational features also have a higher value to recreational users than those using the trail primarily for transportation. All recreational corridor users require some basic amenities to have a comfortable experience. They include dedicated facilities (such as sidewalks or bike lanes to connect trail facilities), clear destination and intersection signage, and even surfaces. The aesthetic component of a facility is very important to most recreational users. In other words, most people prefer to walk or bicycle in pleasing surroundings. For families and children, most often these are facilities separate from vehicle traffic. Recreational bicyclists are an economic resource to local businesses as they stop for food and drinks and other shopping needs.

3.1.3 Persons with Disabilities

This user group includes individuals with a medically definable physical and/or cognitive impairment, as well as those with hearing/visual limitations. According to the 2010 census, one out of every five Americans has a disability that limits mobility.

The State of California requires that all facilities constructed with public funds (federal, state, county, municipal or any political subdivision of the State) be "accessible to and usable by persons with disabilities." It is important to note that all trails do not have to be accessible to all people, but accessibility is to be considered for new trail construction and reconstruction of trails managed for pedestrian use.

The Architectural and Transportation Barriers Compliance Board (Access Board) is responsible for producing accessibility guidelines that are in accordance with the Americans with Disabilities Act (ADA) of 1990 and the Architectural Barriers Act (ABA) of 1968. The Access Board released the Draft Final Accessibility Guidelines for Outdoor Developed Areas (AGODA) in 2009 which include standards for trail, including RWT, design. Standards address maximum gradients and cross slopes, surface materials, trail width, openings and obstacles as well as amenities. In 2011, the Board posted a proposed rule for Shared Use Path Accessibility Guidelines that is currently under consideration.

3.1.4 Equestrians

Equestrians require specialized parking, staging, and turnaround areas, with plenty of room for horse trailers. Additionally, if the RWT is a paved surface, an adjacent or parallel native-surfaced or dirt path for horse use is preferable, with a minimum width of four feet. Equestrians typically prefer trails that provide a relatively calm experience, as well as longer distances and higher and wider clearances than trails that serve hikers. Concurrent use by bicyclists is sometimes problematic, and therefore designing for separation of equestrians from bicyclists is ideal. Equestrians also may prefer facilities specifically suited for horses including water sources, hitching racks, and stalls to board their horses during overnight stays. Nearby access to feed, other support supplies and appropriate places for riders to overnight are also optimal.

3.2 Summary of Workshop Comments and Survey Results

Stakeholder input was collected with a public survey and at public workshops held in Willits and Ukiah in September 2011, during adjacent property owner interviews (in Ukiah), and at Technical Advisory Group (TAG) meetings. Detailed findings from the public survey and public workshops are presented in **Appendix A**.

While preferences for a RWT design, function, and alignment varied, unifying recommendations can be discerned. Overall, stakeholders stated their interest in and support for a RWT that serves both local transportation and recreational needs and facilitates tourism through intermittent connections with lodging, food, and services.

Residents of both the communities of Ukiah and Willits are interested in connecting to the Rail-with-Trail from other pedestrian and bicyclist facilities within the Cities. Workshop participants also expressed a long term vision for the trail corridor that includes connections between population centers in the county.

3.3 Connecting Facilities

The RWT would connect with several existing and planned pedestrian and bicycle facilities, enabling the County and Cities to reach their goals of forming local and regional networks of pedestrian, bicycle, and trail routes. Along this network, RWT users could access public parks and recreation facilities, schools, residential neighborhoods, commercial and employment centers, and tourist facilities.

Bikeways that would connect with the RWT are identified below by jurisdiction from south to north:

- **City of Ukiah.** Existing bike lanes on Gobbi Street (see **Figure 3-1**).
- **Mendocino County.** Existing bike lanes along Lake Mendocino Drive and Hensley Creek Road and proposed bikeways along State Street and Ford Road (see **Figure 3-1**).
- **City of Willits.** Proposed bikeways along East Hill Road, Locust Street, along a proposed road south of the Skunk Train Line and east of Highway 101 (see **Figure 3-3**).

The RWT would connect with sidewalks within the public rights-of-way in the Ukiah and Willits downtown areas.

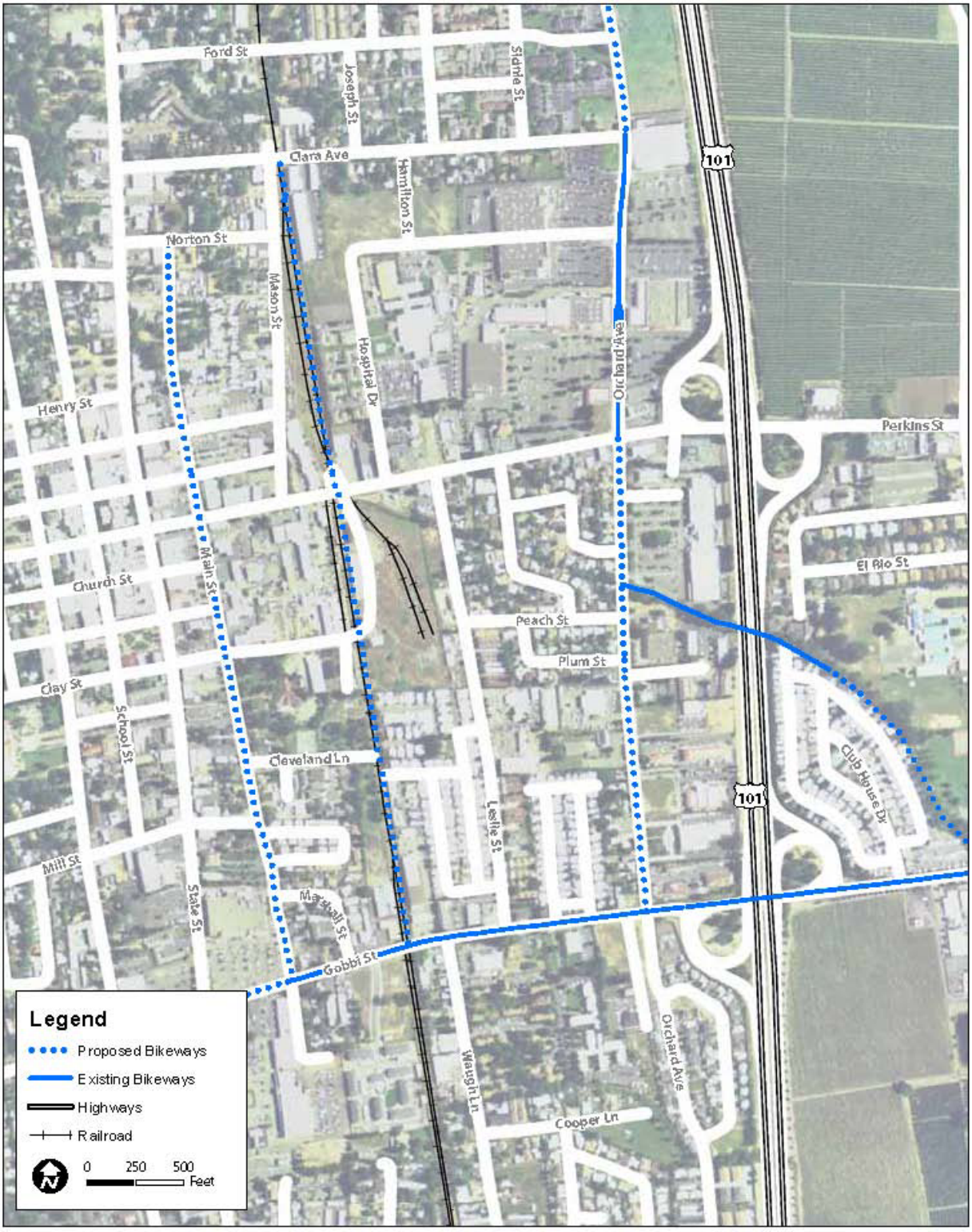


Figure 3-1: Existing and Proposed Figure Bikeways in the City of Ukiah

(Source GIS data - Mendocino County Regional Bikeway Plan, 2006)

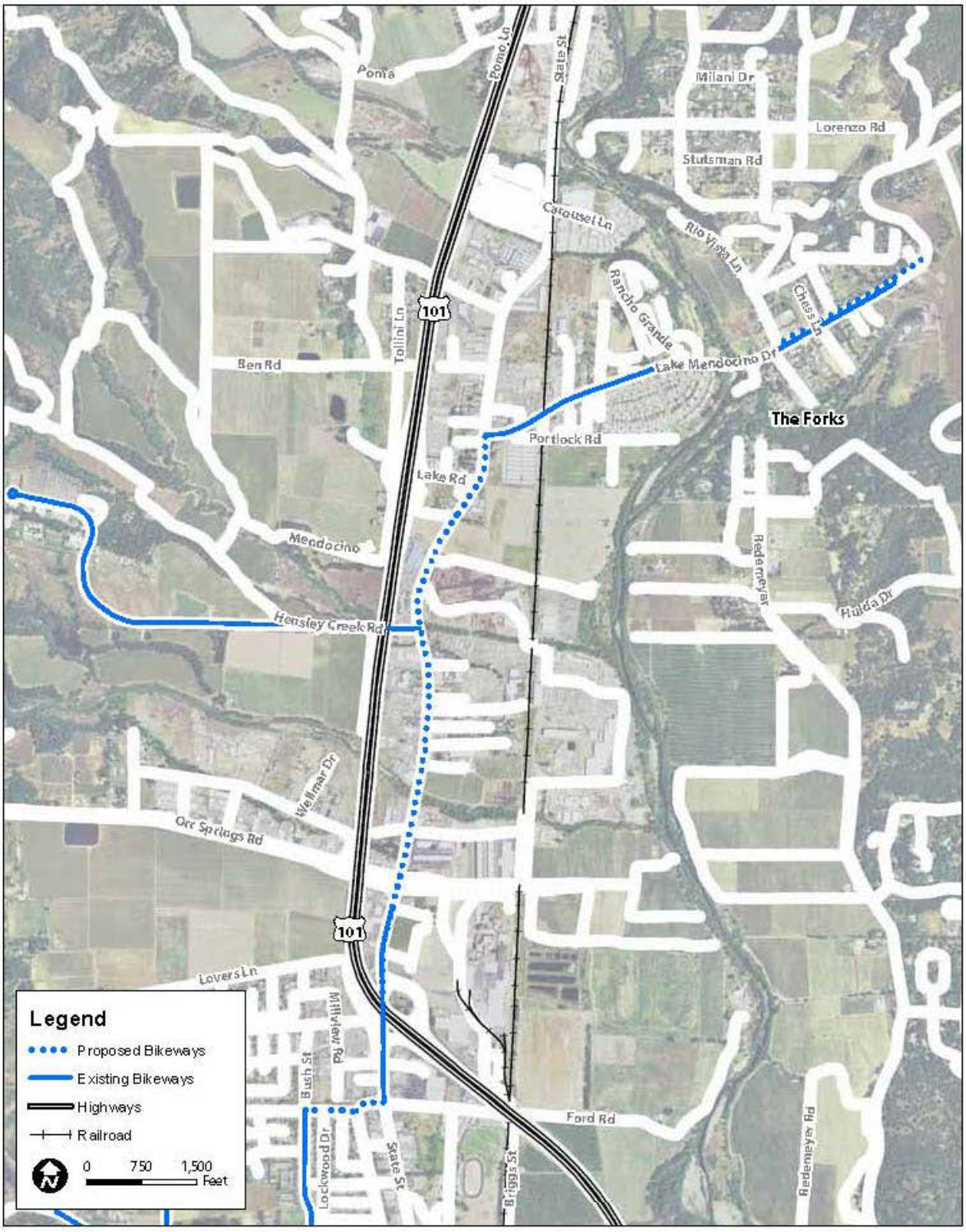


Figure 3-2: Existing and Proposed Bikeways in Mendocino County

(Source GIS data - Mendocino County Regional Bikeway Plan, 2006)

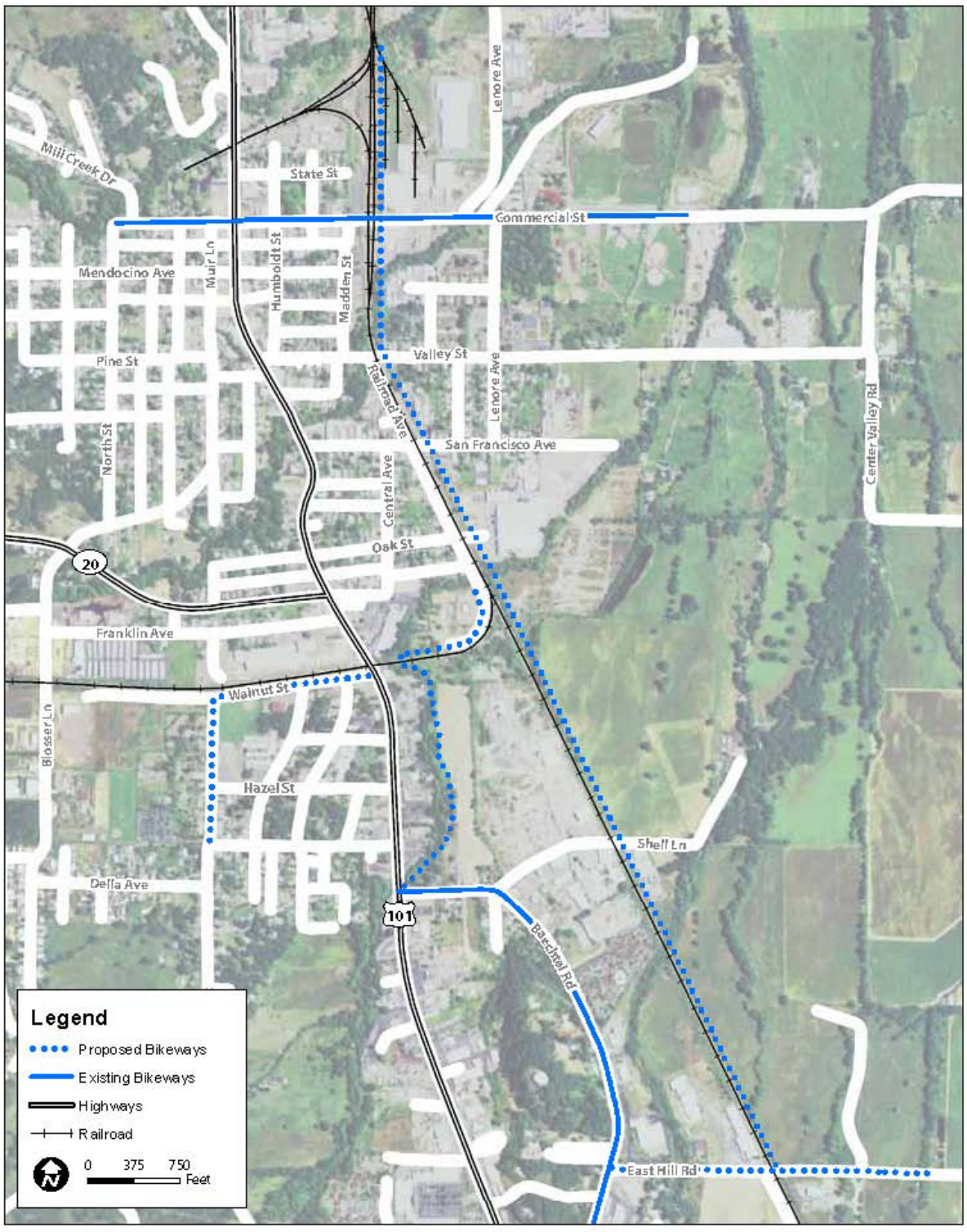


Figure 3-3: Existing and Proposed Bikeways in the City of Willits

(Source GIS data - Mendocino County Regional Bikeway Plan, 2006)

3.4 Demand and Benefits

The projected demand for RWTs in Mendocino County is assumed to be comparable with the demand for multi-use trails in similar communities nationwide. Multi-use trails are typically identified as one of the top resources in towns and cities, providing recreational and transportation opportunities for residents and visitors. In many communities, multi-use trails are the most heavily used public facilities—more popular than traditional parks—and also encourage people to walk and bicycle who might not normally do such activities.

Once a high-quality RWT system is completed from Willits to Hopland, it could be expected to support as many as 1,000,000 trips per year. Residents and visitors will be able to use the connected system for recreation and transportation. The trail demand projections are based on the Alta Trail Demand Model. This model is calibrated with actual user counts from trails around the country. The model considers trail length, adjacent and regional population, the scenic quality of trail, and other factors. While 1,000,000 trips on the trail may seem high, this number translates to only about 200 trips per average daylight hour along the entire length of the completed corridor between Willits and Hopland.

It is expected that the trail could serve as an important economic generator for local communities, attracting visitors and extending the stay of visitors. For example, the trail system in Lake Tahoe is credited with making the summer season attract more visitors to the area than the winter months. A high quality trail system could provide significant economic benefit to the communities in Mendocino County. A summary of these and other benefits is provided below.

3.4.1 Education

Trails are excellent outdoor classrooms that allow trail users to learn about the natural environment, develop an appreciation for open spaces, and establish a conservation ethic. An understanding of one's natural environment may lead to future efforts to preserve ecologically important areas. Trails may also highlight local assets and encourage trail users to learn about the historical significance and unique culture heritage of an area.

3.4.2 Environmental

A 1993 Federal Highway Administration (FHWA) case study, titled The Environmental Benefits of Bicycling and Walking in the United States, states that "…bicycle-riding and walking do not contribute to the environmental damage inherent in extracting, transporting, processing and burning petroleum or other fossil fuels." The FHWA also reports that Americans are willing to walk to destinations up to two miles away and bicycle up to five miles away. Given that nearly half of all trips taken are for a distance of five miles or less, encouraging bicycling and walking as a transportation option can reduce:

- Fossil fuel use
- CO_2 (carbon dioxide), CO (carbon monoxide), NOx (nitrogen oxides) and VOC (volatile organic compounds) emissions
- Traffic congestion
- Vehicle miles traveled (VMT)

Connecting homes, schools, parks, downtown and recreation destinations, along with cultural attractions with a trail system can encourage local residents to walk or bike to destinations. People choosing to ride or walk rather than drive are typically replacing short automobile trips, which contribute disproportionately

high amounts of pollutant emissions. These emission reductions benefit all residents, whether they are trail users or not.

3.4.3 Health

Americans' lack of physical activity is leading to an increase in a variety of health conditions including hypertension, cancer, heart disease, diabetes, and obesity, which will soon eclipse tobacco as the number one preventable cause of death in the United States. In 2005, less than half of U.S. adults met the Centers for Disease Control/American College of Sports Medicine recommendations for daily physical activity levels.

The Surgeon General's 1992 report, "Physical Activity and Health," determined that physical activity can help reduce cardiovascular disease, lower the risk of colon cancer, lower the risk of diabetes, lower the risk of osteoporosis, reduce the risk of obesity, and relieve symptoms of depression and anxiety. The report also contains a 1991 Center for Disease Control study that shows walking is the most common form of exercise for 44.1 percent of the population over 18 years of age.

Bicycling and walking offer a way to integrate physical activity into busy schedules, and have been demonstrated to improve physical and emotional well-being. Studies show that frequency of trail use is directly proportional to the distance that one lives from trail access points, and regular trail users see health benefits. It logically follows that communities with greater access to trail systems and recreational opportunities will have healthier populations.

In addition to individual health benefits, physical activity provides fiscal rewards to the entire community with a reduction in health care costs and lost days of work. Studies reviewed report an average annual per capita health cost savings of $128 for active individuals when compared with those lacking physical activity.

3.4.4 Economic

An integrated and consistent trail system can result in significant economic benefits to the region. The types of economic benefits include: increased property values, tourism revenue, increased consumer spending, local business expansion, public spending savings and household savings.

A number of studies show that home prices near trails are higher than home prices farther away from trails. Along the Little Miami Scenic Trail in Ohio, a positive relationship between trail proximity and home sales price ($7.05 per foot) was recorded. This study was conducted in response to concerns by residents of threats to property value due to an increase of crime, traffic and noise resulting from the trail. In 2006, a study analyzed home values in seven Massachusetts towns near the Minuteman Bikeway and Nashua River Rail Trail. Homes near the trails sold at 99.3 percent of the listing price, compared to 98.1 percent for other homes in these towns. Additionally, homes near the trails sold, on average, 20 days faster than other homes.

Bicycle-related tourism has been shown to bring in significant revenue to a region. Studies of bicycle tourism in Colorado, Maine and the Outer Banks Region of North Carolina estimate annual bicycle tourism revenues ranging from $15 million to $193 million in 1999 dollars.

Bicycle and pedestrian facilities can also lead to increased spending by consumers. A 1991 National Park Service study found that long rural trails generated more revenue per person than shorter urban trails. The study estimated average expenditures of rail-trail users at $1.90 per person to $14.88 per person.

Bicycle and pedestrian infrastructure saves public dollars as well. Right of way width equivalent to a lane of roadway will accommodate five to ten times more pedestrian and bicycle traffic than driving and the cost of bicycling and pedestrian infrastructure is just a small fraction of that of building highways. Trails and paths can also be efficient connections to transit, reducing the need for expensive and land-consuming park-and-ride stations.

Household savings can be found by utilizing non-motorized transportation. Transportation is second to housing as a proportion of household budgets. Between 2002 and 2008, fuel costs rose from 3% of household expenditures to 8.5%. Walking and/or bicycling can help community members shave transportation expenses from their budgets.

3.4.5 Community

The extent of bicycling and walking in a community has been described as a barometer of how well that community is advancing its citizens' quality of life. Areas that are busy with bicyclists and walkers are considered to be environments that work at a human scale, and foster a heightened sense of neighborhood and community. These benefits are impossible to quantify, but when asked to identify civic places that they are most proud of, residents will most often name places where walking and bicycling are common, such as a popular greenway, a riverfront project, a neighborhood market, Main Street, or downtown.

Walking and bicycling are also good choices for families. A bicycle enables a young person to explore her neighborhood, visit places without being driven by his parents, and experience the freedom of personal decision-making. More trips by bicycle and on foot mean fewer trips by car. In turn, this means less traffic congestion in the community. There are also more opportunities to speak to neighbors and more "eyes on the street" to discourage crime and violence. It is no accident that communities with low crime rates and high levels of walking and bicycling are generally attractive and friendly places to live.

3.4.6 Safety

Creating a safe trail environment goes beyond design and law enforcement and should involve the entire community. The most effective and most visible deterrent to illegal activity on the trail and at the trailhead will be the presence of legitimate users. Trails that accommodate a variety of users generally see more trail usage. A well-used trail puts more "eyes on the corridor," which is a key deterrent to undesirable activity.

4. Corridor Overview

This chapter describes potential trail segments for implementation along the entire length of the rail corridor in Mendocino County. The corridor overview provides summary information for each identified trail segment including key constraints.

Given the length and cost of the proposed RWT throughout Mendocino County, the corridor must be broken down into discreet segments that (a) are accessible by the public from public roadways at some point, and (b) have a cost that can be reasonably funded over time. Based on these needs, the corridor was divided into three basic regions (South, Central, North), and into 29 individual segments within these classifications.

Maps depicting the general location of each segment are shown in **Figures 4-1** through **4-3**. The maps are divided into the three geographic areas: South, Central and North. The overview maps are followed by a series of detailed tables with description of each individual segment.

Basic information (elevation, length) about each potential trail segment is summarized in **Tables 4-1** through **4-3 at the end of the chapter**.

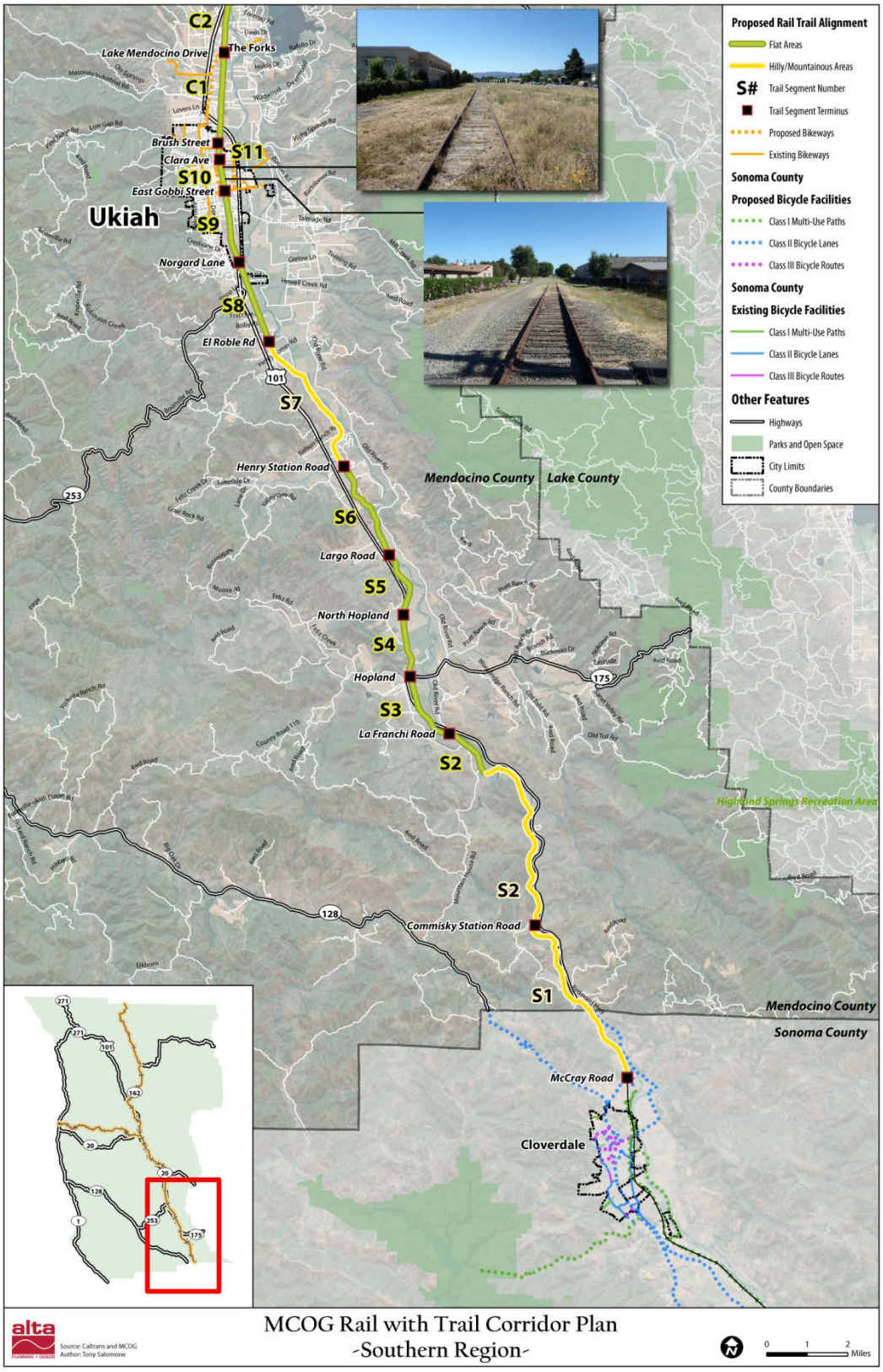


Figure 4-1: Rail-with-Trail Corridor: Southern Region

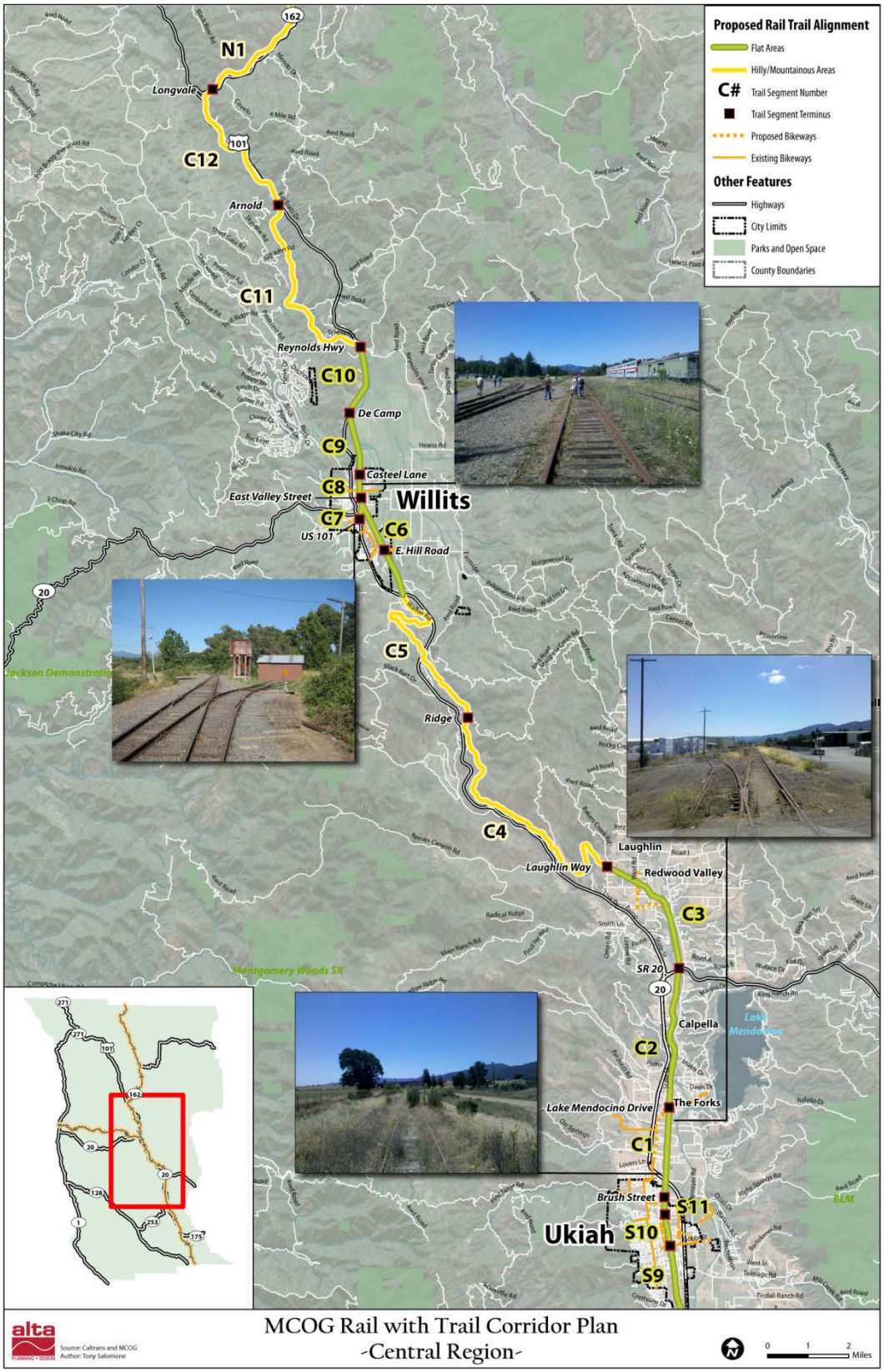


Figure 4-2: Rail-with-Trail Corridor: Central Region

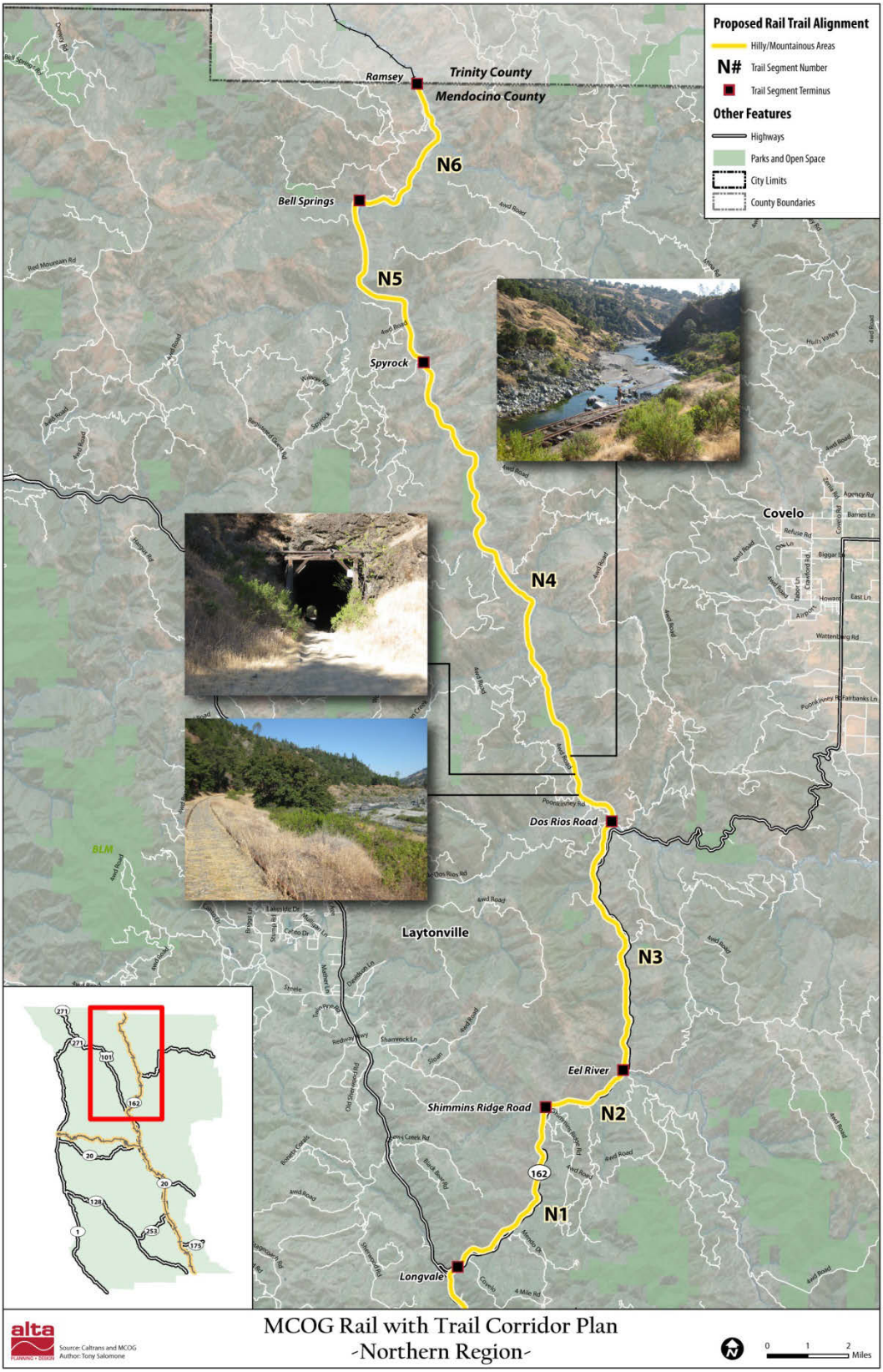
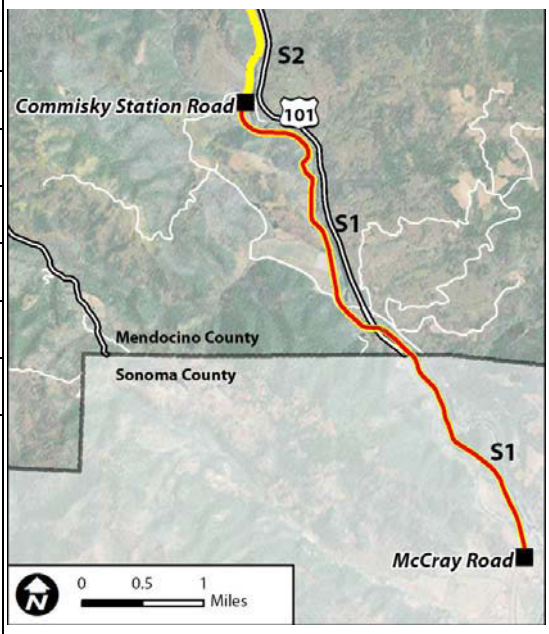
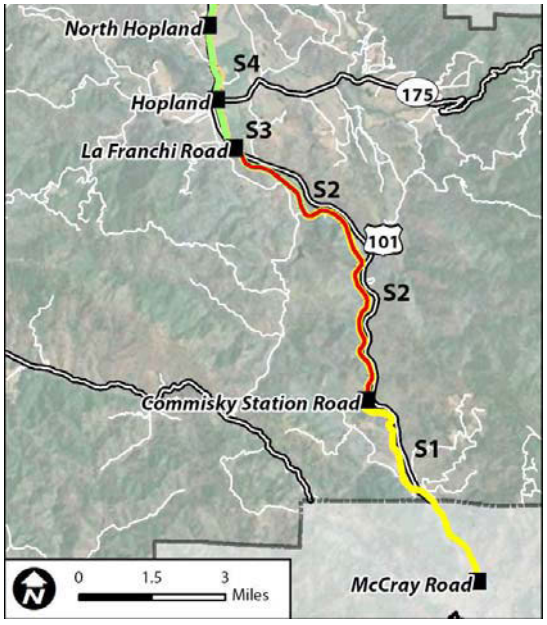


Figure 4-3: Rail-with-Trail Corridor: Northern Region

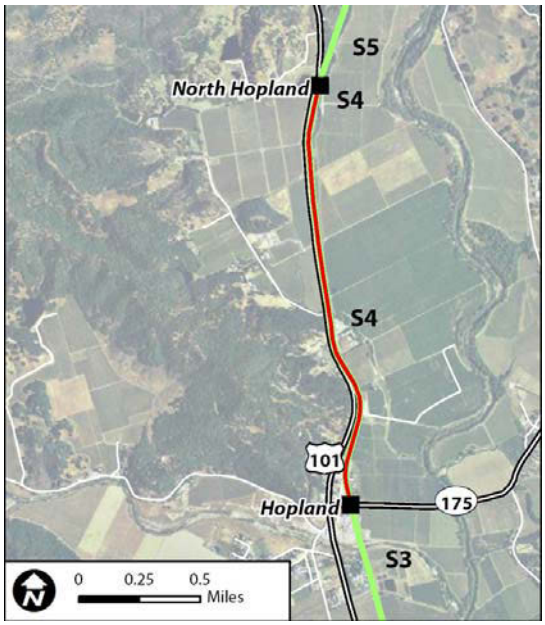
4.1 Corridor Trail Segments Detail

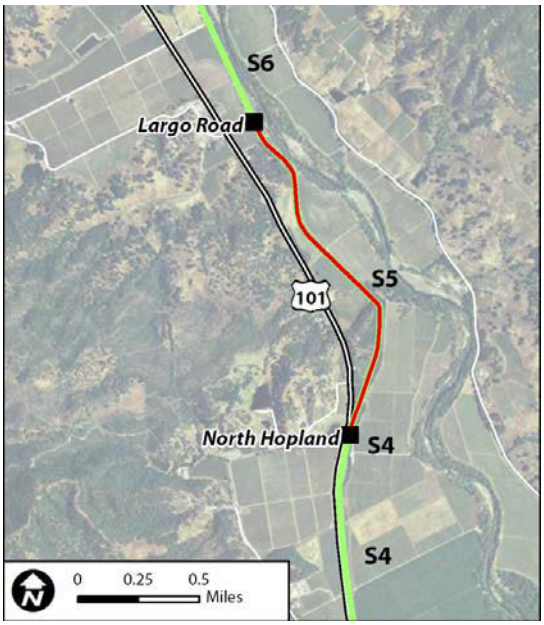
The following section provides detailed information about the individual trail segments. Each table provides information on start and end point of the segment and key information for implementation, such as jurisdiction and known challenges to trail development. Priority projects are noted in the tables and described in more detail in Chapter 5. Again, tables are organized from south to north.

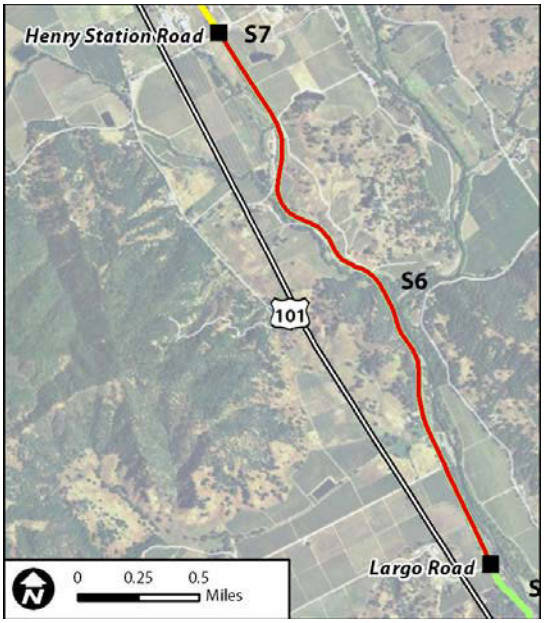
Segment No: S1	**Length: 5.0 miles**
Description: Rural with very low population. From McCray Road to Commisky Station Road.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino, Sonoma County	
Communities: Cloverdale	
Stream Crossings: 0	
Species of Concern: None known	
Design Type: Unpaved Pathway Rural	
Key challenges and opportunities: • Hilly terrain • Bridge • Location near the Russian River • Provides direct connection for Cloverdale residents	

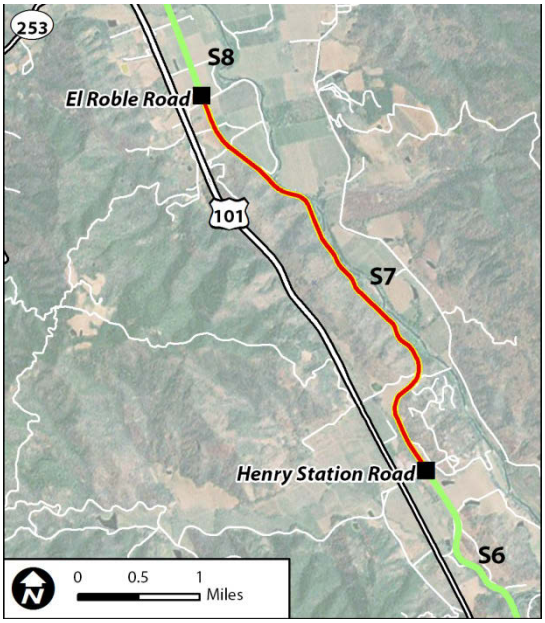
Segment No: S2	**Length: 7.1 miles**
Description: Rural with low population. From Commisky Station Road to La Franchi Road. Corridor conditions for trail development will vary within the segment.	
Terrain: Flat in the north, hilly in the south.	
Jurisdiction: County of Mendocino	
Communities: Hopland, Cloverdale	
Stream Crossings: 4	
Species/Environmental Concern: Southernmost section of the segment is near the Russian River	
Design Type: Unpaved Pathway Rural	
Key challenges and opportunities: • Impact to Russian River • Environmental permitting • Location near the Russian River will attract users • Varied terrain, hilly and rugged in the southern section • Bridges • Limited access	

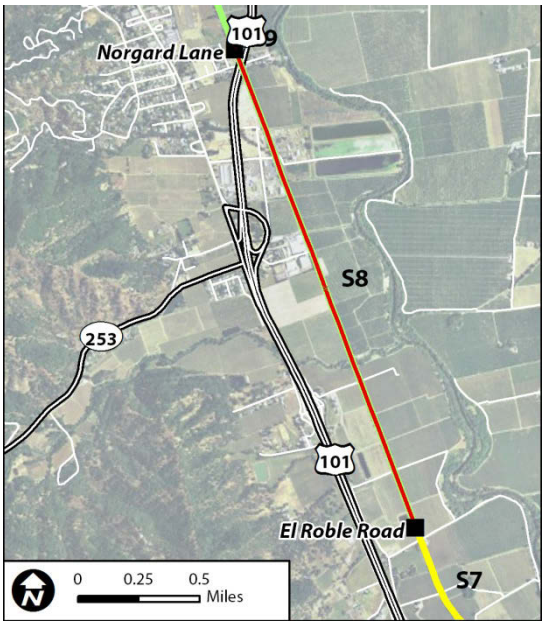
Segment No: S3	**Length: 1.1 miles**
Description: Rural with moderate population. From La Franchi Road to River Road/ 175.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Hopland	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Connects to Hopland • Relatively flat and open corridor • Limited access opportunities	

Segment No: S4	**Length: 1.8 miles**
Description: Rural with moderate population in surrounding area. From River Road/SR 175 to North Hopland.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Hopland	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Connects to Hopland • Relatively flat and open corridor	

Segment No: S5	**Length: 1.5 miles**
Description: Rural with low population area in surrounding area. From North Hopland to Largo Road.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Hopland	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Highly scenic, access to vineyards, tourism value • Rolling undulating terrain	

Segment No: S6	**Length: 2.6 miles**
Description: Rural with low population. From Largo Road to Henry Station Road	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Ukiah	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Limited opportunities for access	

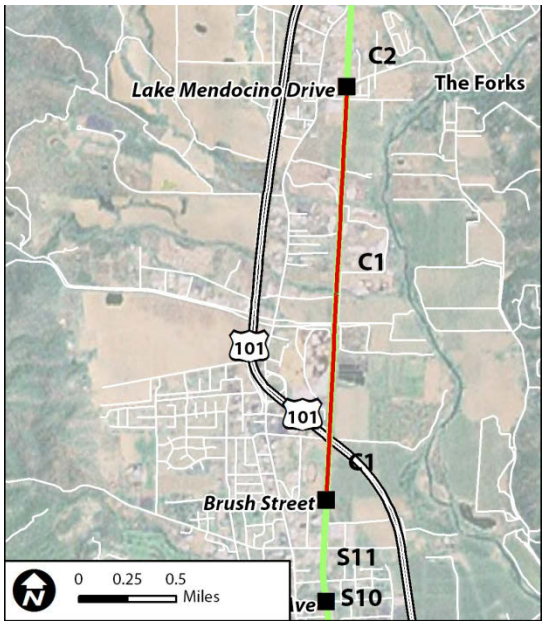
Segment No: S7	**Length: 3.9 miles**
Description: Rural with low population. From Henry Station Road to El Roble Road.	
Terrain: Hilly	
Jurisdiction: County of Mendocino	
Communities: Ukiah	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Limited access • Active agricultural operations • Highly scenic, tourism and recreation value	

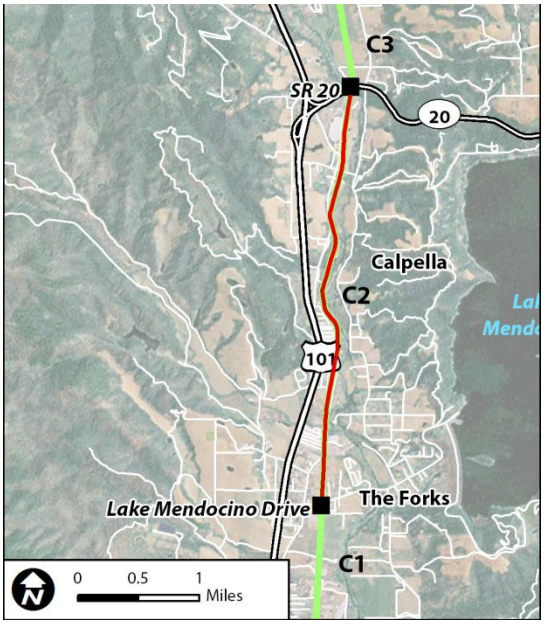
Segment No: S8	**Length: 2.1 miles**
Description: Moderate population in surrounding area. From El Roble Road to Norgard Lane.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Ukiah	
Stream Crossings: 4	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Limited access • Active agricultural operations • Highly scenic, tourism and recreation value	

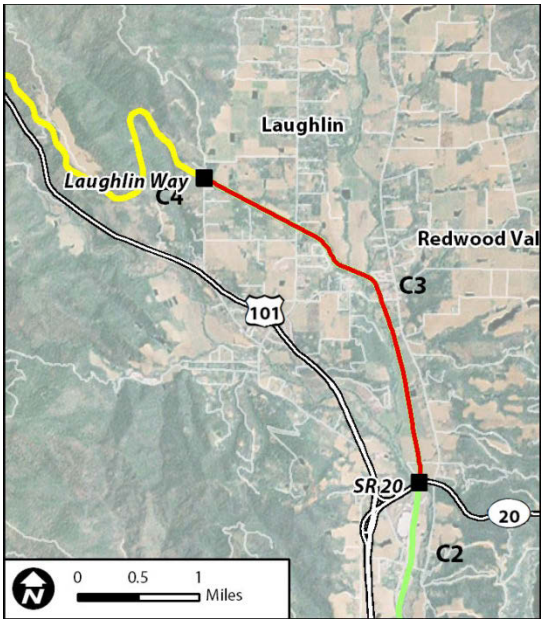
Segment No: S9	Length: 1.8 miles
Description: Relatively high population area. From Norgard Lane to East Gobbi Street	
Terrain: Flat	
Jurisdiction: City of Ukiah, County of Mendocino	
Communities: Ukiah	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Connection into Ukiah • Environmental permitting • Industrial land uses	

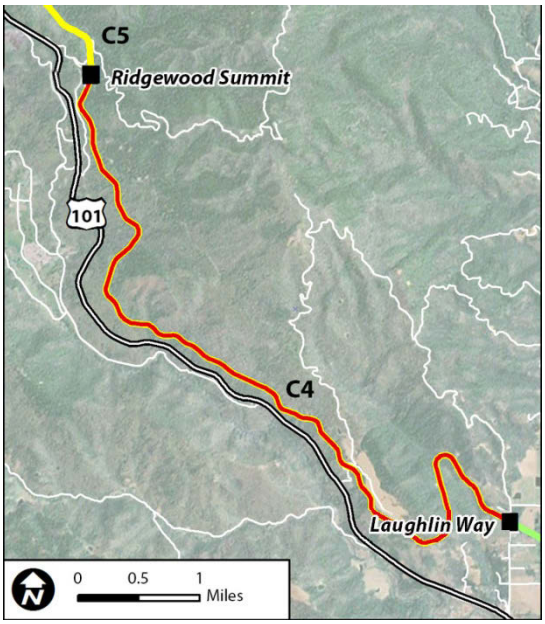
Segment No: S10	Length: 0.8 miles
Description: Urban area near community destinations and existing bicycle connections. From East Gobbi Street to Clara Ave.	
Terrain: Flat	
Jurisdiction: City of Ukiah	
Communities: Ukiah	
Stream Crossings:	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Road crossings • Short on roadway section • Constrained ROW limits trail width • Phase I project • Funding already secured.	

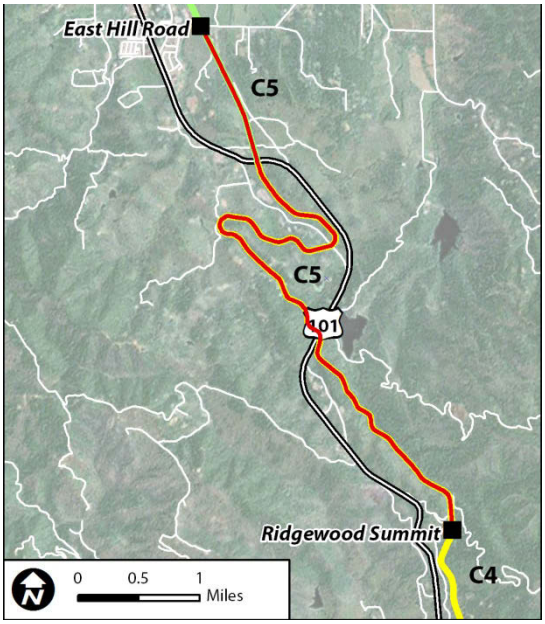
Segment No: S11	**Length: 0.5 miles**
Description: Moderate population in surrounding area. High use for connection to County and City of Ukiah Phase I projects. From Clara Avenue to Brush Street.	
Terrain: Flat	
Jurisdiction: City of Ukiah, County of Mendocino	
Communities: Ukiah	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Bridge required • Neighborhood connectivity • Connects to Phase I project with existing funding	

Segment No: C1	**Length: 2.1 miles**
Description: Near the community of Ukiah, Segment extends from Brush Street to Lake Mendocino Drive.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Ukiah, Calpella, The Forks	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Industrial areas • 2 stream crossings • One on road section • Phase I project	

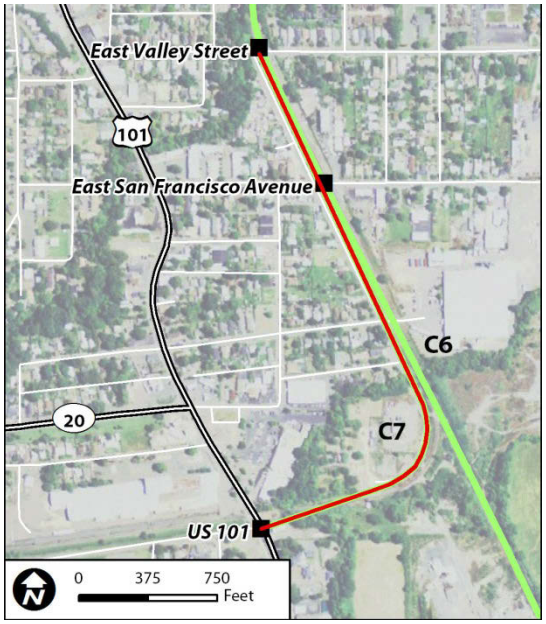
Segment No: C2	Length: 3.5 miles
Description: Rural with low population in surrounding area. From Lake Mendocino Drive to SR 20.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Redwood Valley, Calpella	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Stream crossings • Industrial use	

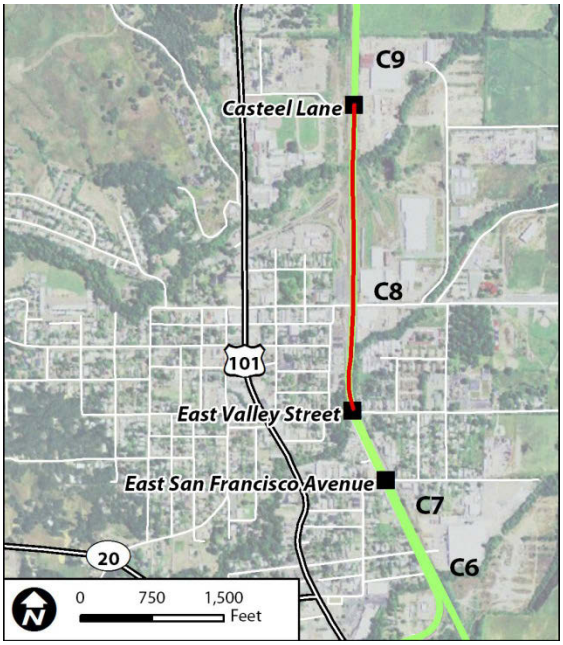
Segment No: C3	Length: 3.4 miles
Description: Moderate population. Adjacent residential and agricultural land use. From SR 20 to Laughlin Way.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Laughlin, Redwood Valley	
Stream Crossings: 7	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Road crossings	

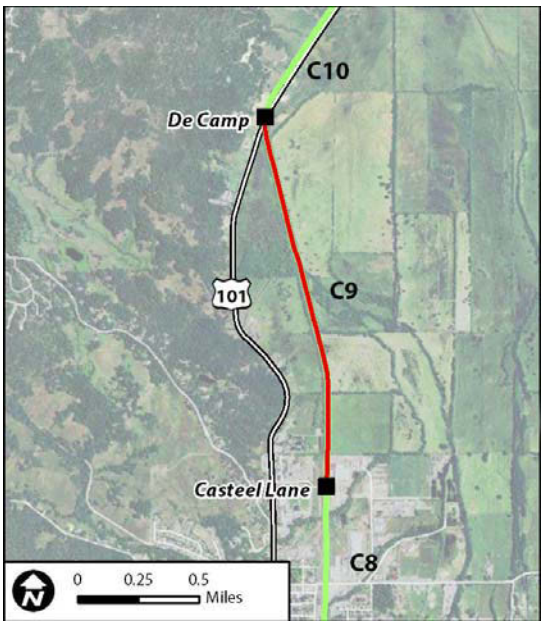
Segment No: C4	**Length: 7.3 miles**
Description: Rural with low population area in surrounding area. From Laughlin Way to Ridgewood Summit.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Willits, Laughlin, Redwood Valley	
Stream Crossings: 4	
Species of Concern: Sonoma tree vole	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Species of concern • Environmental permitting • Varied conditions of the corridor	

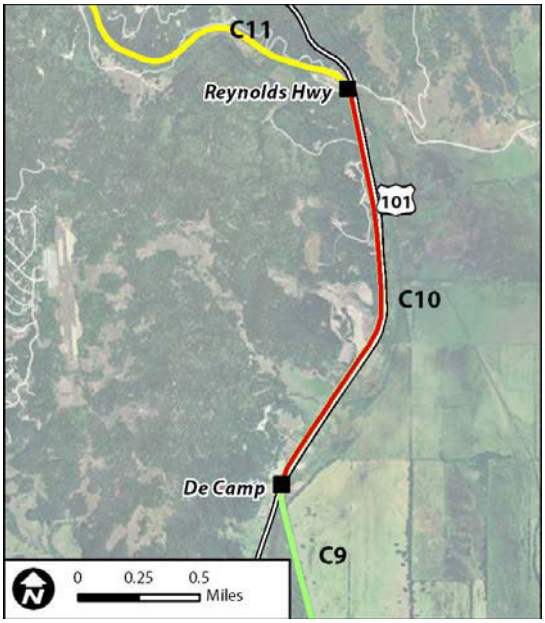
Segment No: C5	**Length: 6.7 miles**
Description: Rural with low population area in surrounding area. Corridor conditions for trail development will vary within the segment. From Ridgewood Summit to E. Hill Road.	
Terrain: Flat in the northern section, hilly in the southern section.	
Jurisdiction: County of Mendocino	
Communities: Willits	
Stream Crossings: 1	
Species of Concern: None known	
Design Type: Paved Pathway Rural	
Key challenges and opportunities: • Varied conditions of the corridor • Limited opportunities for access	

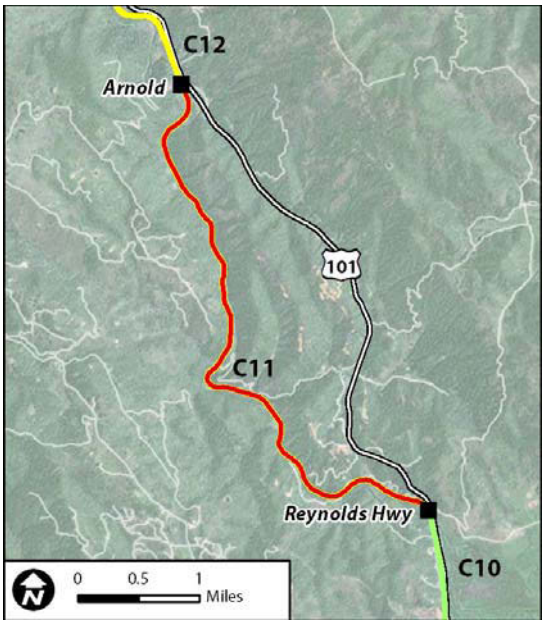
Segment No: C6	Length: 1.2 miles
Description: Low population in direct area, high in adjacent areas. From E. Hill Road to East San Francisco Avenue. Part of segment is included in the Willits Phase I project.	
Terrain: Flat	
Jurisdiction: City of Willits, County of Mendocino	
Communities: Willits	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Urban and Rural in southern section	
Key challenges and opportunities: • Connections to existing bicycle facilities	

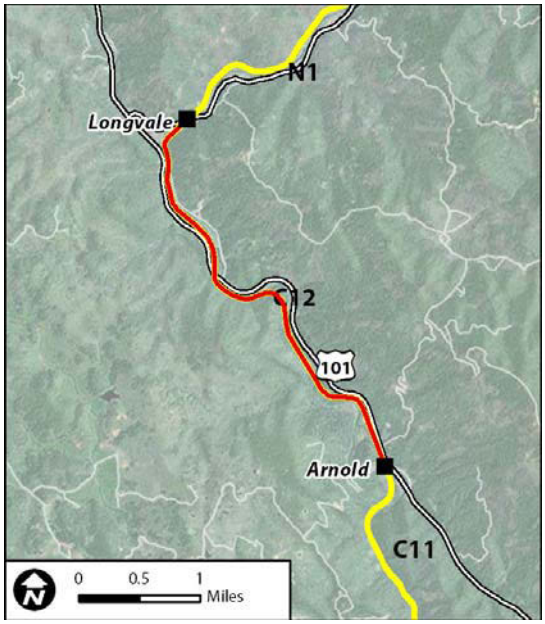
Segment No: C7	Length: 0.6 miles
Description: Within the community of Willits. From US 101 to East Valley Street.	
Terrain: Flat	
Jurisdiction: City of Willits	
Communities: Willits	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Constrained corridor in northern section • 2 bridges • Phase I project	

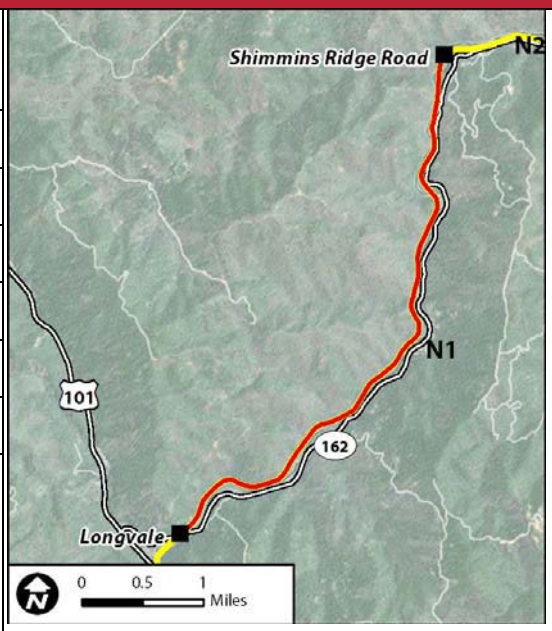
Segment No: C8	**Length: 0.6 miles**
Description: Moderate population in surrounding area. Direct access to the High School and Mendocino Community College. From East San Francisco Avenue to Casteel Lane.	
Terrain: Flat	
Jurisdiction: City of Willits	
Communities: Willits	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Paved Pathway Urban	
Key challenges and opportunities: • Potential Conflicts with future rail operations at the north end • Two rail crossings – currently only approved for rail maintenance	

Segment No: C9	**Length: 1.6 miles**
Description: Moderate population in surrounding area. From Casteel Lane to crossing of Highway 101 near De Camp.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Willits	
Stream Crossings: 2	
Species of Concern: yellow breasted chat, wetlands, riparian, oak woodlands and vernal pools probable	
Design Type: Unpaved Pathway Rural or Paved Pathway Rural	
Key challenges and opportunities: • Species of concern • Environmental permitting • Road crossing at North end	

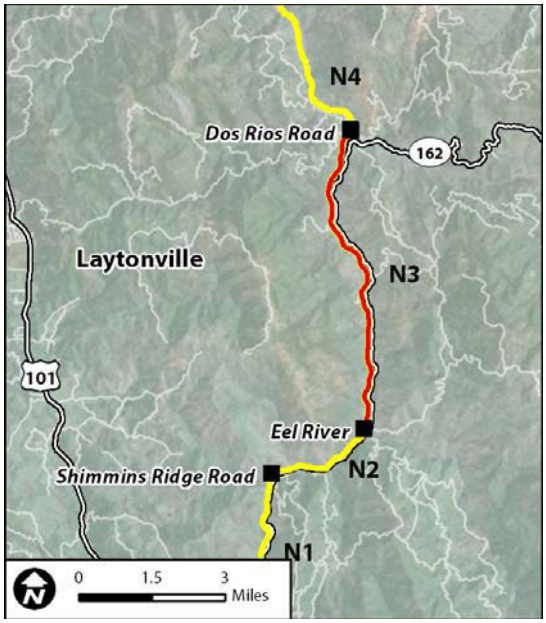
Segment No: C10	Length: 1.8 miles
Description: Low population in surrounding area. From crossing of Hwy 101 near De Camp to Reynolds Highway the corridor runs parallel to Hwy 101. Varied terrain with some possible wetlands.	
Terrain: Flat	
Jurisdiction: County of Mendocino	
Communities: Willits	
Stream Crossings: 2	
Species of Concern: yellow breasted chat, pacific fisher, wetlands, riparian and vernal pools possible	
Design Type: Unpaved Pathway Rural	
Key challenges and opportunities: • Species of concern • Environmental permitting • Road crossing at south end	

Segment No: C11	Length: 5.2 miles
Description: Rural with low population in surrounding area. Close to the community of Willits. From Reynolds Hwy junction area to Arnold.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Willits, Arnold	
Stream Crossings: 5	
Species of Concern: None known	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Varied condition of the existing rail corridor	

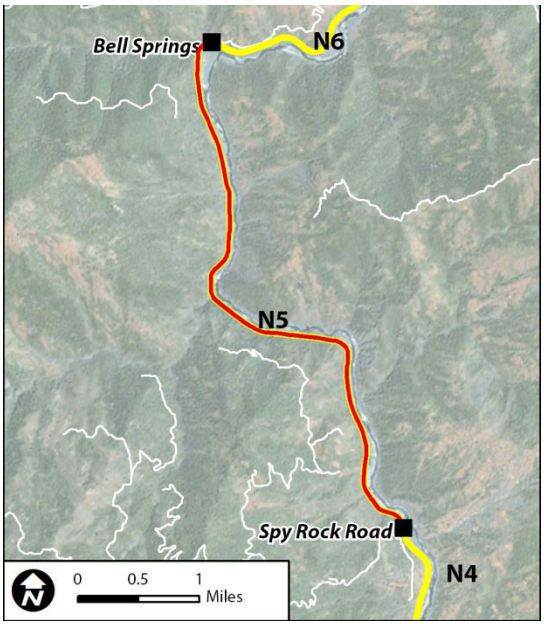
Segment No: C12	**Length: 3.8 miles**
Description: Rural with low population in surrounding area. Possible access points along Highway 101. From Arnold to Longvale.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Longvale, Arnold	
Stream Crossings: 5	
Species of Concern: Sonoma tree vole	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Variation in condition of the existing rail corridor • Possible sensitive species	

Segment No: N1	**Length: 5.2 miles**
Description: Rural with very low population in surrounding area. Corridor conditions for trail development will vary within the segment. From Longvale to Shimmins Ridge Road area.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Longvale	
Stream Crossings: 6	
Species of Concern: None known	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Varied condition of the existing rail corridor • Landslide and general deterioration of the existing railroad ROW	

Segment No: N2	Length: 2.3 miles
Description: Rural with very low population in surrounding area. Corridor conditions for trail development will vary within the segment. From Shimmins Ridge Road to Eel River	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Laytonville	
Stream Crossings: 2	
Species of Concern: None known	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Unstable geology • Cultural resources • Varied condition of the existing rail corridor • Limited access opportunities	

Segment No: N.3	Length: 6.7 miles
Description: Rural with very low population in surrounding area. Corridor conditions for trail development will vary within the segment. From Eel River to Dos Rios Road.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Laytonville, Covelo, Dos Rios	
Stream Crossings: 7	
Species of Concern: Pallid bat	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Unstable geology • Possible sensitive species • Varied condition of the existing rail corridor	

Segment No: N4	**Length: 13.7 miles**
Description: Rural with very low population in surrounding area. Corridor conditions for trail development will vary within the segment. From Dos Rios Road junction to Spy Rock Road	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino, BLM, tribal lands	
Communities: Laytonville, Covelo	
Stream Crossings: 9	
Species of Concern: None known	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Unstable geology • Cultural resources • Federal documentation and permitting • Varied condition of the existing rail corridor and no clear access points	

Segment No: N5	**Length: 5.1 miles**
Description: Rural with very low population in surrounding area. Corridor conditions for trail development will vary within the segment. From Spy Rock area to Bell Springs.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino, BLM	
Communities: Spy rock, Dunlap Place	
Stream Crossings: 5	
Species of Concern: None known	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Unstable geology • Federal documentation and permitting • Deteriorated railroad bed and ROW • No access	

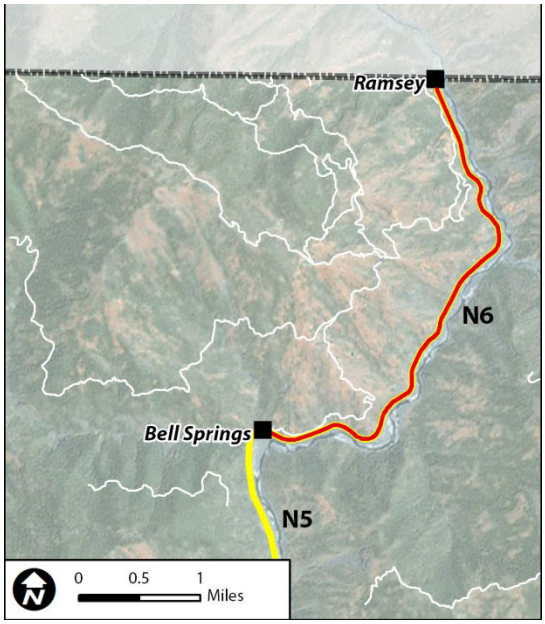
Segment No: N6	**Length: 4.4 miles**
Description: Rural with very low population in surrounding area. Corridor conditions for trail development vary within the segment. From Bell Springs area to Ramsey at the County border.	
Terrain: Hilly, Mountainous	
Jurisdiction: County of Mendocino	
Communities: Ramsey, Bell Springs	
Stream Crossings: 2	
Species/Environmental Concern: Proximity to the Eel River as it is a designated Wild and Scenic River	
Design Type: Unpaved Pathway - Rural	
Key challenges and opportunities: • Remote with low demand • Unstable geology • Cultural resources • Deteriorated railroad bed and ROW • No access	

Table 4-1: Trail Information Summary by Segment – Southern Region

Trail Segment	Starting Point	Elevation	Length Miles	Population	Primary Jurisdiction	Terrain	Design Type	Stream Crossings	Species/ Environmental Concern
S1	McCray Rd (Sonoma County)	316	5.0	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	0	
S2	Commisky Station Rd	423	7.1	Low	County of Mendocino	Rural- Flat and Rural Hilly	Unpaved Pathway Rural	4	Southernmost trail segments are close to the Russian River
S3	La Franchi Rd	470	1.1	Moderate	County of Mendocino	Semi Urban-Flat	Paved Pathway Rural	1	
S4	River Road/SR 175	488	1.8	Moderate	County of Mendocino	Semi Urban-Flat	Paved Pathway Rural	1	
S5	North Hopland	495	1.5	Low	County of Mendocino	Rural -Flat	Paved Pathway Rural	1	
S6	Largo Rd	522	2.6	Low	County of Mendocino	Rural -Flat	Paved Pathway Rural	1	
S7	Henry Station Rd	573	3.9	Low	County of Mendocino	Rural - Hilly	Paved Pathway Rural	1	
S8	El Roble Rd	562	2.1	Moderate	County of Mendocino	Semi Urban-Flat	Paved Pathway Urban	4	
S9	Norgard Lane (Ukiah)	590	1.8	High	City of Ukiah	Urban - Flat	Paved Pathway Urban	2	
S10	E. Gobbi St (Ukiah)	600	0.8	High	City of Ukiah	Urban - Flat	Paved Pathway Urban	1	
S11	Clara Ave (Ukiah)	615	0.3	High	City of Ukiah	Urban - Flat	Paved Pathway Urban	1	

Table 4-2: Trail Information Summary by Segment – Central Region

Trail Segment	Starting Point	Elevation	Length Miles	Population	Primary Jurisdiction	Terrain	Design Type	Stream Crossings	Species/ Environmental Concern
C1	Brush Street (Ukiah)	640	2.1	Moderate	County of Mendocino	Semi Urban- Flat	Paved Pathway Rural	2	
C2	Lake Mendocino Drive	655	3.5	Moderate	County of Mendocino	Semi Urban- Flat	Paved Pathway Rural	2	
C3	SR 20	680	3.4	Moderate	County of Mendocino	Semi Urban- Flat	Paved Pathway Urban	7	
C4	Laughlin Way	872	7.3	Low	County of Mendocino	Rural - Hilly, Mountainous	Paved Pathway Rural	4	sonoma tree vole
C5	Ridgewood Summit	1913	6.7	Low	County of Mendocino, City of Willits	Rural - Partial Flat, Partial Hilly	Paved Pathway Rural	1	
C6	E. Hill Rd (Willits)	1410	1.2	High	City of Willits	Urban - Flat	Paved Pathway Urban	2	
C7	US 101/SR 20 Spur (Willits)	1400	0.6	High	City of Willits	Urban - Flat	Paved Pathway Urban	0	
C8	E. San Francisco Ave (Willits)	1365	0.6	High	City of Willits	Urban - Flat	Paved Pathway Urban	2	
C9	Casteel Lane (Willits)	1310	1.6	Moderate	County of Mendocino, City of Willits	Rural - Flat	Unpaved Pathway Rural or Paved Pathway Rural	2	yellow breasted chat, wetlands, riparian, oak woodlands and vernal pools probable
C10	De Camp	1280	1.8	Low	County of Mendocino	Rural -Flat	Unpaved Pathway Rural	2	yellow breasted chat, pacific fisher, wetlands, riparian and vernal pools possible
C11	Reynolds Hwy	1250	5.2	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	5	
C12	Arnold	1232	3.8	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	5	sonoma tree vole

Table 4-3: Trail Information Summary by Segment – Northern Region

Trail Segment	Starting Point	Elevation	Length Miles	Population	Primary Jurisdiction	Terrain	Design Type	Stream Crossings	Species/ Environmental Concern
N1	Longvale	1164	5.2	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	6	
N2	Shimmins Ridge Rd (Farley)	1071	2.3	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	2	
N3	Eel River	985	6.7	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	7	pallid bat
N4	Dos Rios Rd	924	13.7	Low	County of Mendocino, BLM, Tribal Lands	Rural - Hilly, Mountainous	Unpaved Pathway Rural	9	
N5	Spy Rock Rd	769	5.1	Low	County of Mendocino, BLM	Rural - Hilly, Mountainous	Unpaved Pathway Rural	5	
N6	Bell Springs	704	4.4	Low	County of Mendocino	Rural - Hilly, Mountainous	Unpaved Pathway Rural	2	Northern trail segments close to the Eel River (designated wild and scenic)

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5. Phase I Priority Projects

This chapter provides an overview of priority projects that were selected and developed through the planning process. Each project description contains a summary table, plan drawings and a detailed cost estimate.

An important objective of this plan is to develop preliminary design and cost estimates for the top three (3) segments in the county. Through work with the project Technical Advisory Group (including NCRA) and input from the public, three Phase I segments were identified for preliminary design. One of the goals was to provide a Phase I facility in each of the two main cities in the county along the railroad corridor (Ukiah and Willits), plus one segment in the unincorporated part of the county.

The Ukiah Phase I segment S10 (East Gobbi to Clara) was based on a feasibility study completed by the City that showed this segment to have the highest benefit.

The Willits Phase I segment C7 (US 101 – East Valley Street) was based on feedback from NCRA which indicated that the other high priority segment —East Commercial to the high school—would require a new railroad crossing which the NCRA, its operator (Northwestern Pacific Railroad), and likely the CPUC, would not support.

The county segment C1 (Brush St-Lake Mendocino Dr) was selected because it was believed to serve the greatest potential number of users—and be part of an important link from the Calpella/"Forks" area into Ukiah. In all three cases, the available width and lack of major topographic constraints, sidings, and spurs were also important considerations. Figure 5-1 illustrates the general location of the priority projects in relation to major population centers. Detailed project concept plans of intersections and cross section details are included for all priority projects in Appendix E.

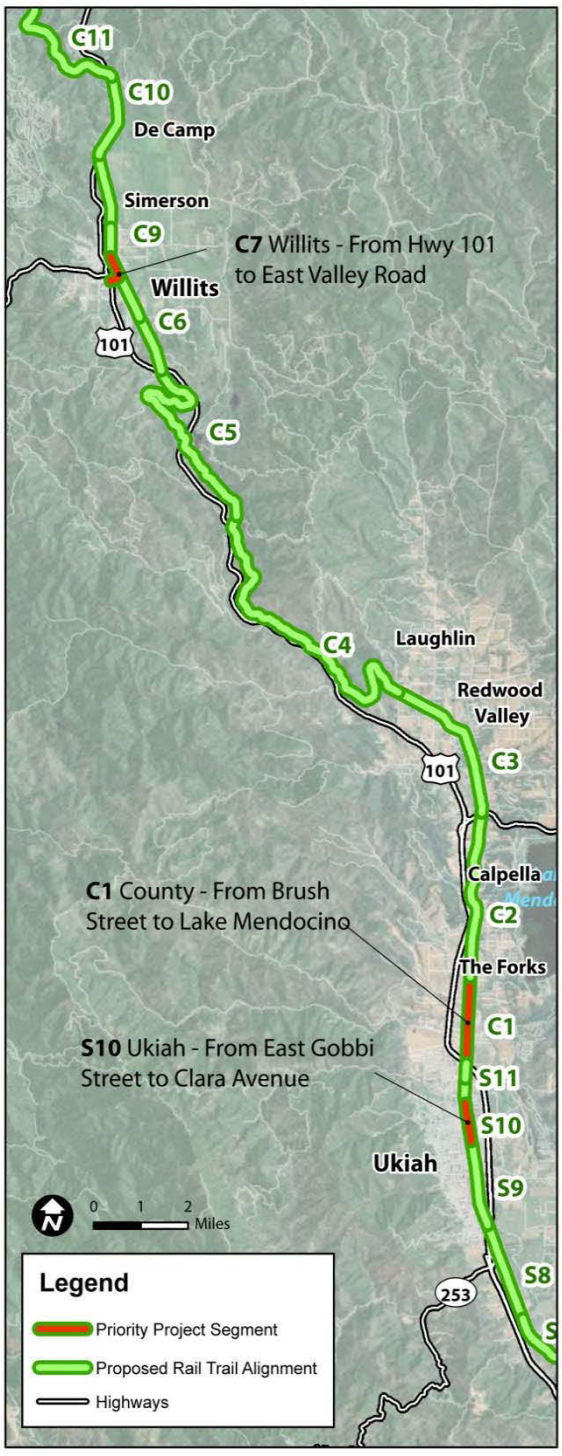


Figure 5-1: Priority Project Corridor Context

Priority Project 1: E. Gobbi Street to Clara Avenue

Primary Jurisdiction: City of Ukiah **Length:** 0.8 miles

Corridor Segment No: S10 **Cost Estimate:** $755,594 See cost detail in Table 5-1

Trail Types: 10 foot trail, 8 foot trail, and shared lane markings, Paved Pathway Urban

Description: The proposed RWT alignment would be located on the west side of the tracks between E. Gobbi and E. Perkins in Ukiah.

The west side of the corridor was selected as the best possible alignment because the existing and future sidings are located on the east side of the main line - constraining the right-of-way.

Also, there are several public access points on the west side, including Cleveland Lane and East Clay. The Hudson-Carpenter Park, Grace Hudson Museum, and community gardens are also located on the west side of the tracks.

North of E. Perkins, the RWT alignment will follow on the west side of the rail yard, including a segment along Mason Street up to Clara Avenue.

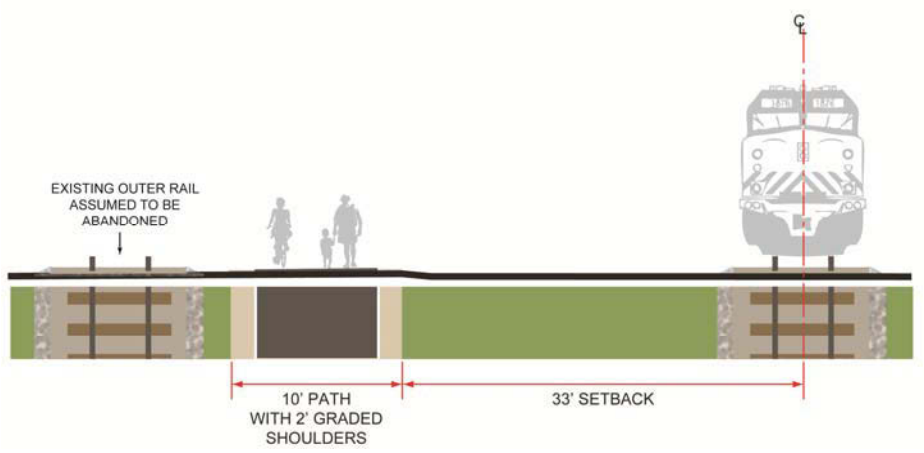
Typical trail segment cross sections are shown below. Detailed project concept plans of intersections and cross section detail are included in Appendix E.

Corridor south of Perkins Street (facing south)

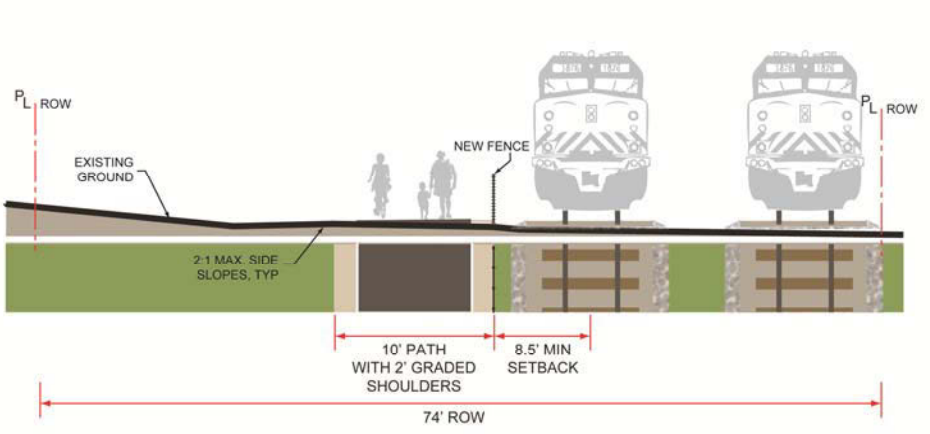
Intersection of corridor with Clara Ave/Mason Street (facing north); RWT will follow the west side

Typical cross sections are shown on the following page, with intersection and amenity treatments shown in Figure 5-2.

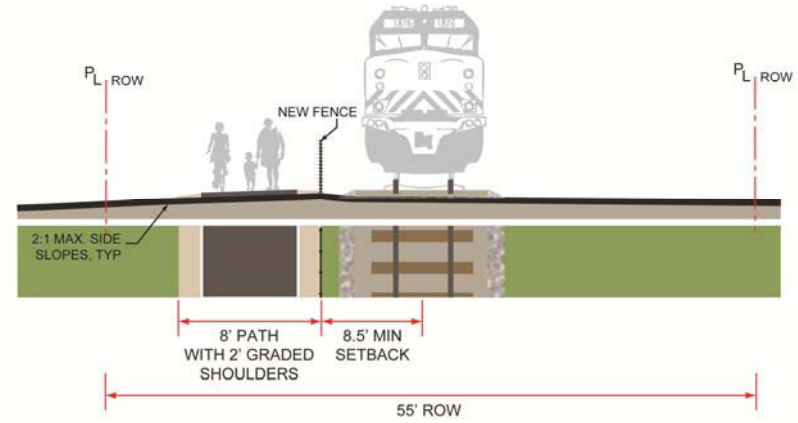
E. Gobbi Street to Clara Avenue - Typical Cross Sections



Unconstrained – positions towards outside property line



Constrained ROW



Constrained ROW

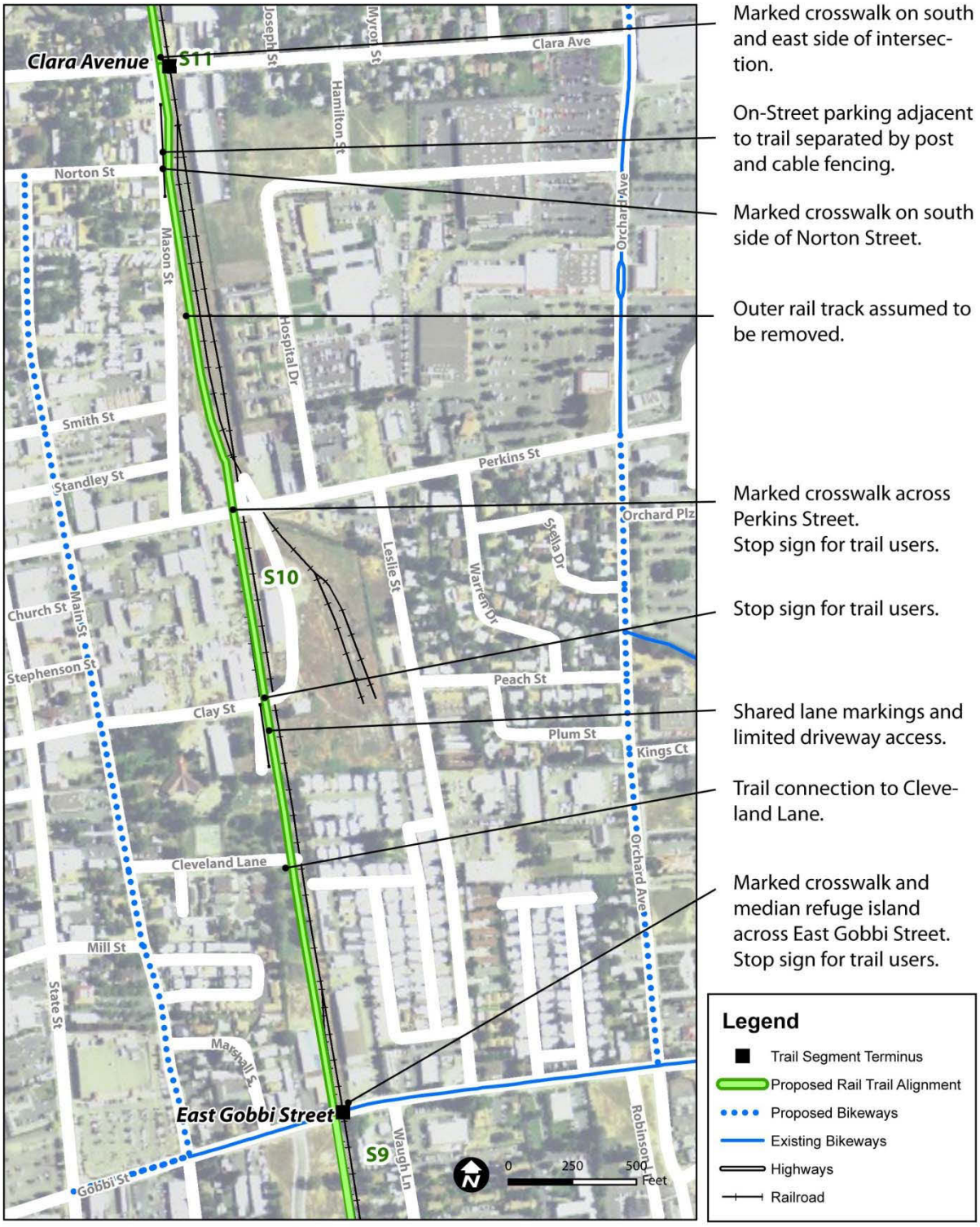


Figure 5-2: Priority Project 1 - Ukiah Detail

Table 5-1: Rail-with-Trail Planning Level Cost Estimate: Ukiah Segment S10

Opinion of Probable Construction Cost

Agency: Mendocino Council of Governments

Project Name: MCOG Rails With Trails Corridor Plan - Ukiah Trail Conceptual Design

Project Location: From Gobbi Street to Clara Avenue in the City of Ukiah

Date of Estimate: January 17, 2012

Prepared by: GHD INC (Formerly Winzler & Kelly)

CONSTRUCTION COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	$24,000	$24,000
2	Traffic Control	1	LS	$15,000	$15,000
3	Contruction Area Signs	12	EA	$500	$6,000
4	Water Pollution Control	1	LS	$10,000	$10,000
5	Clearing and Grubbing	1	LS	$10,000	$10,000
6	Type G1 Drainage Inlet - South Side Trail Access At Perkings St	1	EA	$4,000	$4,000
7	Type GO Drainage Inlet - North Side Mason At Clara Ave	1	EA	$4,000	$4,000
8	Remove Concrete and AC Surfacing	236	SY	$30	$7,080
9	Trail Excavation and Grading	1	LS	$25,000	$25,000
10	Embankment, Imported Borrow	1	LS	$6,000	$6,000
11	Class II Aggregate Base (Assume 9" Thick)	1510	CY	$45	$67,950
12	Asphalt Concrete (Type A 1/2" Max., 0.2' Min. Thk. Trail)	600	Ton	$110	$66,000
13	Concrete Curb (Type A1-6)	715	LF	$35	$25,025
14	Concrete Curb and Gutter (Type A2-6)	120	LF	$55	$6,600
15	Minor Concrete (Sidewalks, Curb Ramps)	27	CY	$800	$21,600
16	Fence (Where trail is adjacent to RR Tracks)	2540	LF	$40	$101,600
17	Detectable Warning Surface (Truncated Domes)	323	SF	$45	$14,535
18	Thermoplastic Pavement Markings	1100	SF	$8	$8,800
19	Thermoplastic Traffic Stripe	381	LF	$5	$1,905
20	Roadside Sign(s), 1-Post	43	EA	$500	$21,500
21	Interpretive Sign (Assumed Quantity)	5	EA	$1,500	$7,500
22	Way-Finding Sign (Assumed Quantity)	5	EA	$500	$2,500
23	Adjust Existing Manhole Cover to grade	1	EA	$650	$650
24	Relocate Existing RR Utility	4	EA	$1,500	$6,000
25	Trail Amenities (Trash Container, Recycling Container, Bench)	1	LS	$6,000	$6,000
				Subtotal	$469,245
				Estimating Contingency (20%)	$93,849
				Opinion of Probable Construction Cost	**$563,094**

ENGINEERING COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
26	Design Engineering & Surveying (Assume 15% of Construction Cost)	1	LS	$85,000	$85,000
27	Surveying (Topographic Only)	1	LS	$15,000	$15,000
28	Right-Of-Way (Including ROW Engineering)	1	LS	$7,500	$7,500
29	Construction Engineering (Assume 15% of Construction Cost)	1	LS	$85,000	$85,000
				Subtotal	$192,500
				Opinion of Probable Engineering Cost	**$192,500**

TOTAL OPINION OF PROBABLE PROJECT COST **$755,594**

Priority Project 2: Brush Street to Lake Mendocino Drive

Primary Jurisdiction: County of Mendocino **Length:** 2.1 miles

Corridor Segment No: C1 **Cost Estimate:** $2,548,670 See cost detail in Table 5-2

Trail Types: 10 foot trail, Paved Pathway Urban

Description: As can be seen in Figure 5-3 on the following page, the proposed RWT will be located primarily on the west side of the tracks. Starting from the south end at Brush Street, the RWT faces some implementation challenges directly north of Brush Street. Industrial uses along the corridor may currently be on the NWP right-of-way.

Continuing north of this area, an existing drainage ditch runs along the east side. On the west side there is sufficient room for a RWT adjacent to the 12th District Fair Grounds. Once across Ford Rd., there are opportunities for the trail to run along a short portion of Masonite Rd and an existing dirt road on the west side of the tracks. A new bridge across Ackerman Creek would be needed just north of Kunzler Ranch Road.

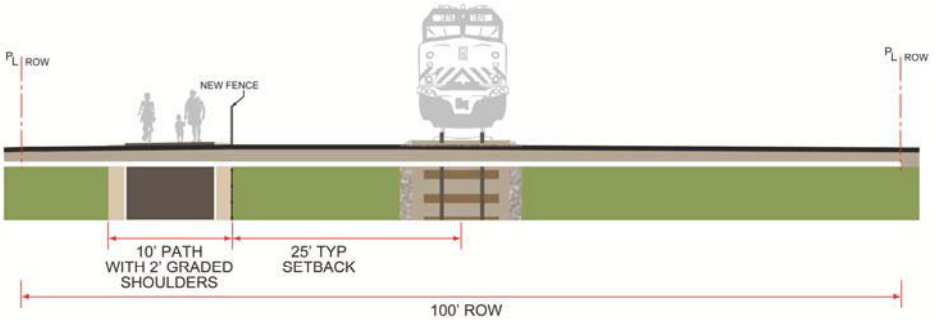
The NWP corridor bisects a major lumber mill and yard north of Olive Avenue. Adequate protection including fencing will need to be provided.

Hensley Creek crossing occurs within the lumber mill property just north of Hollow Tree Rd. North of the lumber mill, the terrain and right-of-way are open and consistent.

The corridor north of Ford Road (facing north); the RWT alignment runs along the west side of the railroad tracks

The alignment is east of the existing 14-foot wide frontage road adjacent to Mendocino Forest Projects property and west of the railroad tracks (facing south)

Typical Cross Section:



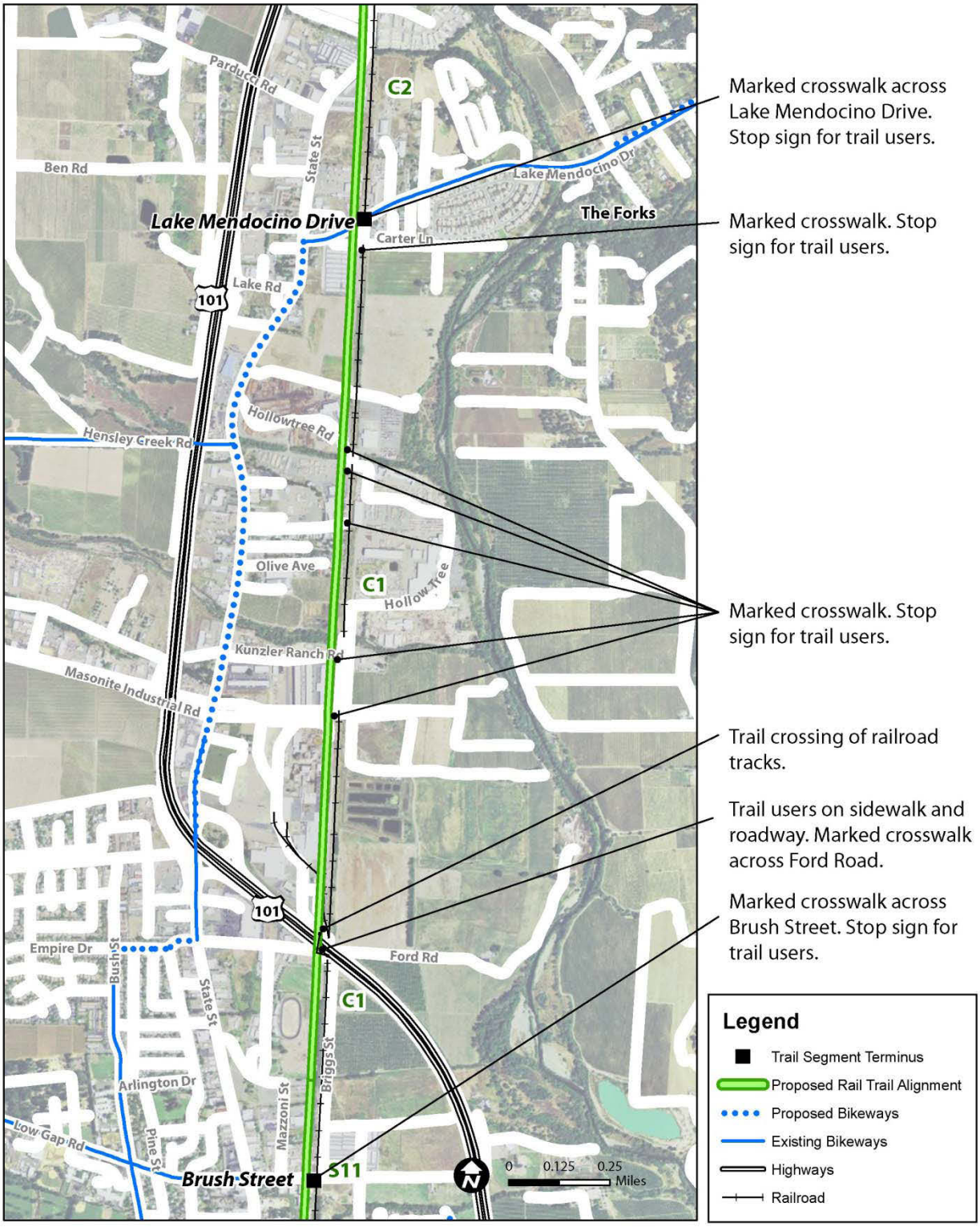


Figure 5-3: Priority Project 2 – County of Mendocino Detail

Table 5-2: Rail-with-Trail Planning Level Cost Estimate: County of Mendocino Segment C1

Opinion of Probable Construction Cost

Agency: Mendocino Council of Governments

Project Name: MCOG Rails With Trails Corridor Plan - Mendocino County Trail Conceptual Design

Project Location: From Brush St to Lake Mendocino Drive in the County of Mendocino

Date of Estimate: January 17, 2012

Prepared by: GHD INC (Fomerly Winzler & Kelly)

CONSTRUCTION COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	$81,000	$81,000
2	Traffic Control	1	LS	$15,000	$15,000
3	Contruction Area Signs	12	EA	$500	$6,000
4	Water Pollution Control	1	LS	$20,000	$20,000
5	Clearing and Grubbing	1	LS	$20,000	$20,000
6	Remove Concrete and AC Surfacing	615	SY	$30	$18,450
7	Trail Excavation and Grading	1	LS	$50,000	$50,000
8	Embankment, Imported Borrow	1	LS	$10,000	$10,000
9	Class II Aggregate Base (Assume 9" Thick)	4620	CY	$45	$207,900
10	Asphalt Concrete (Type A 1/2" Max., 0.2' Min. Thk. Trail)	1795	Ton	$110	$197,450
11	Concrete Curb (Type A1-6)	466	LF	$35	$16,310
12	Concrete Curb and Gutter (Type A2-6)	45	LF	$55	$2,475
13	Minor Concrete (Sidewalks and sidewalk segments at crossings)	60	CY	$800	$48,000
14	Pre-Manufactured Steel Bridge (120 ft long est.)	1	LS	$280,000	$280,000
15	Cast-In-Place Bridge Foundation	1	LS	$50,000	$50,000
16	Install Pre-Manufactured Steel Bridge	1	LS	$40,000	$40,000
17	Pre-Manufactured Steel Bridges (60 ft long est.)	1	LS	$170,000	$170,000
18	Cast-In-Place Bridge Foundation	1	LS	$30,000	$30,000
19	Install Pre-Manufactured Steel Bridge	1	LS	$20,000	$20,000
20	Fence (Where trail is adjacent to RR Tracks)	5750	LF	$40	$230,000
21	Detectable Warning Surface (Truncated Domes)	500	SF	$45	$22,500
22	Thermoplastic Pavement Markings	1705	SF	$8	$13,640
23	Roadside Sign(s), 1-Post	73	EA	$500	$36,500
24	Interpretive Sign (Assumed Quantity)	7	EA	$1,500	$10,500
25	Way-Finding Sign (Assumed Quantity)	7	EA	$500	$3,500
26	Trail Amenities (Trash Container, Recycling Container, Bench)	1	LS	$8,000	$8,000
				Subtotal	$1,607,225
				Estimating Contingency (20%)	$321,445
				Opinion of Probable Construction Cost	**$1,928,670**

ENGINEERING COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
27	Design Engineering & Surveying (Assume 15% of Construction Cost)	1	LS	$290,000	$290,000
28	Surveying (Topographic only)	1	LS	$30,000	$30,000
29	Right-Of-Way (Including ROW Engineering)	1	LS	$10,000	$10,000
30	Construction Engineering (Assume 15% of Construction Cost)	1	LS	$290,000	$290,000
				Subtotal	$620,000
				Opinion of Probable Engineering Cost	**$620,000**

TOTAL OPINION OF PROBABLE PROJECT COST **$2,548,670**

Priority Project 3: US 101 to East Valley Street

Primary Jurisdiction: City of Willits **Length:** 0.6 miles

Corridor Segment No: C7 **Cost Estimate:** $1,738,261 See cost detail in Table 5-3

Trail Types: 10 foot trail and 8 foot trail, Paved Pathway Urban

Description: The RWT in Willits would start at the south end at the junction with US 101. The RWT would follow the tracks as they bend to the east, staying on the west and north side of the tracks. A major creek crossing and new bridge would be required immediately to the east of US 101.

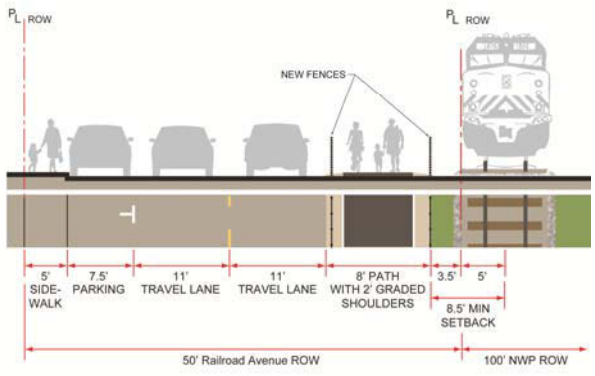
After turning northward, a second major creek crossing, a bridge over Baechtel Creek, would be required between the existing trestle and the new bridge on Railroad Avenue (the existing bridge does not have provisions for pedestrian and bicycle access).

Just north of Oak Avenue, the trail corridor width will narrow to 8 feet with 2 foot shoulders. The RWT will run adjacent to Railroad Avenue past E. San Francisco Avenue then on to East Valley Street. The RWT will be located on the west side of the Mendocino Railway tracks. This area is currently unpaved and used for informal parking.

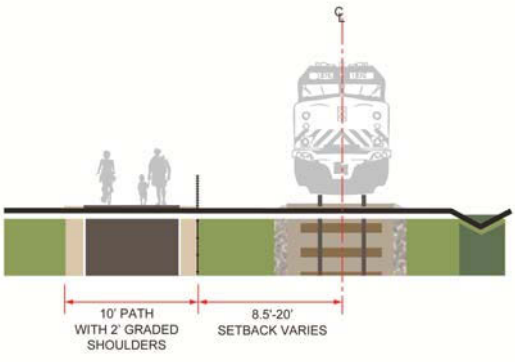
NWP Corridor/Highway 101 intersection (facing west)

NWP corridor east of Highway 101 (facing east); the RWT alignment runs along the north side of the railroad tracks

Typical Cross Sections:



Northern Section



South/West Section

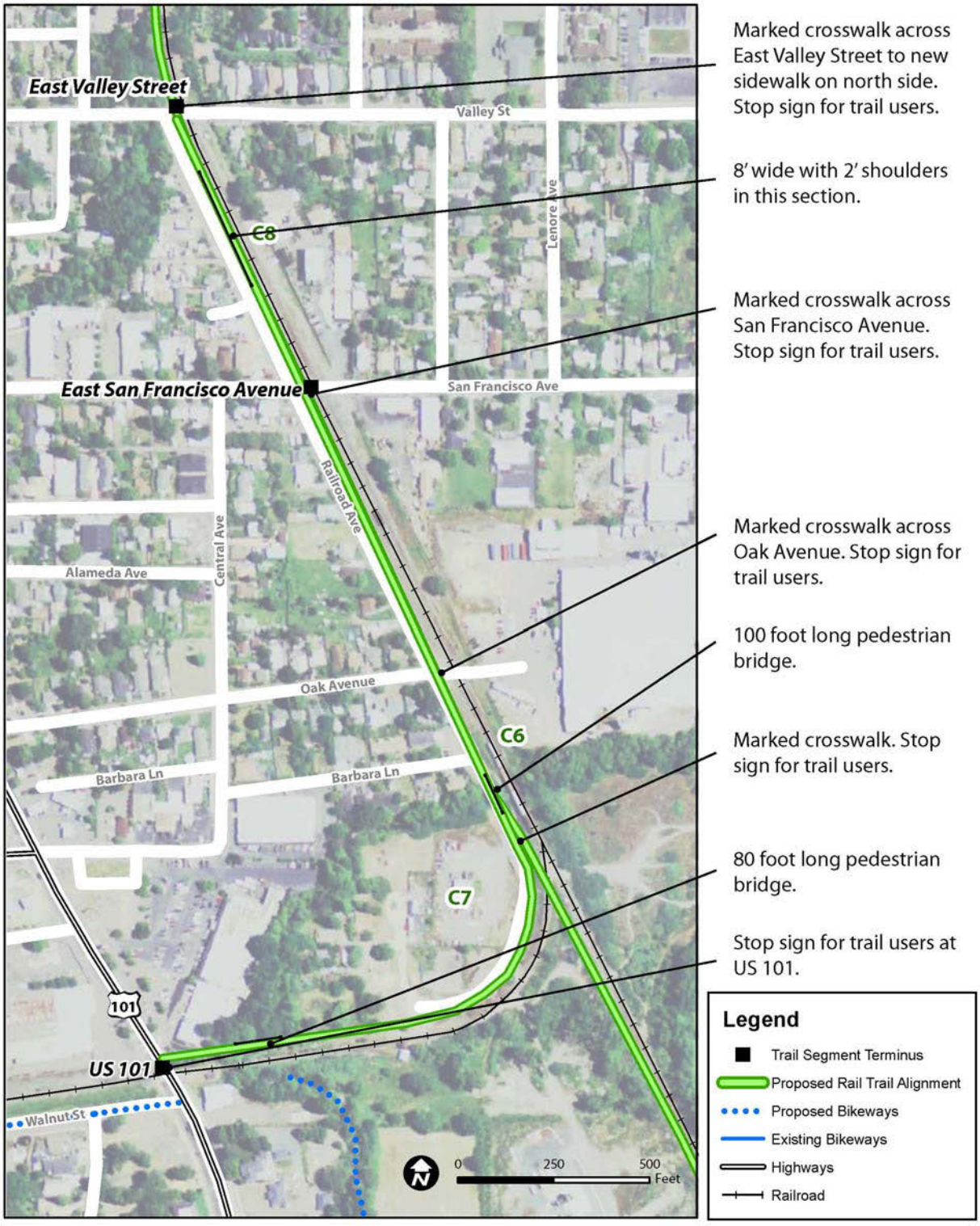


Figure 5-4: Priority Project 3 – Willits Detail

Table 5-3: Rail-with-Trail Planning Level Cost Estimate: City of Willits Segment C7

Opinion of Probable Construction Cost

Agency: City of Willits

Project Name: MCOG Rails With Trails Corridor Plan - Willits Trail Conceptual Design

Project Location: From US 101 to East Valley Street in the City of Willits

Date of Estimate: March 1, 2012

Prepared by: GHD INC (Formerly Winzler & Kelly)

CONSTRUCTION COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	$54,000	$54,000
2	Traffic Control	1	LS	$17,500	$17,500
3	Contruction Area Signs	14	EA	$500	$7,000
4	Water Pollution Control	1	LS	$12,500	$12,500
5	Clearing and Grubbing	1	LS	$12,500	$12,500
6	Remove Concrete and AC Surfacing (Assume RR Ave removal)	2665	SY	$30	$79,950
7	Trail Excavation and Grading	1	LS	$19,000	$19,000
8	Embankment, Imported Borrow	1	LS	$6,250	$6,250
9	Class II Aggregate Base (Assume 9" Thick Trail, 6" under Conc.)	902	CY	$45	$40,590
10	Asphalt Concrete (Type A 1/2" Max., 0.2' Min. Thk. Trail)	498	Ton	$125	$62,250
11	Concrete Curb (Type A1-6)	170	LF	$35	$5,950
12	Concrete Curb & Gutter (Type A2-6)	67	LF	$55	$3,685
13	Minor Concrete (Sidewalks, Curb Ramps)	32	CY	$800	$25,600
14	Pre-Manufactured Steel Bridges (80 ft long est.)	1	LS	$225,000	$225,000
15	Cast-In-Place Bridge Foundation	1	LS	$37,000	$37,000
16	Install Pre-Manufactured Steel Bridge	1	LS	$25,000	$25,000
17	Pre-Manufactured Steel Bridges (100 ft long est.)	1	LS	$253,000	$253,000
18	Cast-In-Place Bridge Foundation	1	LS	$44,000	$44,000
19	Install Pre-Manufactured Steel Bridge	1	LS	$33,000	$33,000
20	Fence (Where trail is adjacent to RR Tracks)	1510	LF	$40	$60,400
21	Detectable Warning Surface (Truncated Domes)	226	SF	$45	$10,170
22	Thermoplastic Pavement Markings	633	SF	$8	$5,064
23	Roadside Sign(s), 1-Post	37	EA	$500	$18,500
24	Reset Roadside Sign(s), 1-Post	2	EA	$500	$1,000
25	Interpretive Sign (Assumed Quantity)	7	EA	$1,500	$10,500
26	Way-Finding Sign (Assumed Quantity)	7	EA	$500	$3,500
27	Adjust Existing Utility Cover to grade (Water Valves, etc)	3	EA	$400	$1,200
28	Adjust Existing Manhole Cover to grade	2	EA	$650	$1,300
29	Relocate Existing RR Utility	2	EA	$1,500	$3,000
30	Trail Amenities (Trash Container, Recycling Container, Bench)	1	LS	$7,000	$7,000
				Subtotal	$1,085,409
				Estimating Contingency (25%)	$271,352
				Opinion of Probable Construction Cost	**$1,356,761**

ENGINEERING COST BREAKDOWN

Item No.	Description	Quantity	Units	Unit Cost	Total
31	Design Engineering & Surveying (Assume 15% of Construction Cost)	1	LS	$203,000	$203,000
32	Environmental Permitting	1	LS	$17,500	$17,500
33	Right-Of-Way (Including ROW Engineering)	1	LS	$25,000	$25,000
34	Construction Engineering (Assume 10% of Construction Cost)	1	LS	$136,000	$136,000
				Subtotal	$381,500
				Opinion of Probable Engineering Cost	**$381,500**

TOTAL OPINION OF PROBABLE PROJECT COST **$1,738,261**

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6. Corridor Design Parameters

This chapter addresses the designs that best support each type of RWT use (walking, bicycling, horseback riding) and how different user groups access the RWT. The Corridor Design Parameters were developed to ensure uniform and consistent standards are applied to the design, construction, safety, operation, and maintenance of a RWT along the NWP ROW. The parameters outline the minimum standards and general requirements for the RWT.

6.1 Summary of NCRA Compliance

The NCRA has jurisdiction over the existing rail line through Mendocino County. Trails within the NWP ROW must be approved by the NCRA Board of Directors and trail applications are reviewed on a case-by-case basis. The NCRA Board has developed a policies manual for "Trail Projects on the NWP Line Rights-of-Way: Design, Construction, Safety, Operations, and Maintenance Guidelines," (NCRA Trail Guidelines) which was adopted in 2009.

Per the NCRA Trail Guidelines, RWT widths, clearances, sight distances, signs, markings, drainage grates, manhole covers, etc. must comply with Caltrans "Highway Design Manual," Chapter 1000, "Bikeway Planning and Design." The selection of signs, markings, and signals must reference the current Manual on Uniform Traffic Control Devices (MUTCD). To the extent feasible, RWT projects must be designed along the outer edges of the NWP ROW, adjacent to the property line. These and additional guidelines have been incorporated into the Plan's Corridor Design Parameters.

6.2 Recommended RWT Design Standards

RWTs are trails and paths that follow existing and often active rail lines. Despite the many benefits of trails constructed in rail ROWs, RWTs also present a range of security and safety issues for trail users that should be addressed through planning and design processes.

National design standards have not been developed for RWTs, although the Federal Railroad Administration (FRA) publishes minimum setback standards for fixed objects next to active railroad tracks, the distance between two active tracks, and adjacent walkways (for railroad switchmen).These published setbacks represent the legal minimum setbacks based on the physical size of the railroad cars and are commonly employed along all railroads and at all public grade crossings. Most Public Utilities Commissions (PUCs), which regulate railroad activities within states, also have specific minimum setbacks for any structures or improvements adjacent to railroads, including any sidewalk or trail that parallels active railroad tracks.

The standards presented below are the result of studies completed by the Federal Highway Administration and Rails-To-Trails Conservancy, along with the PUC and NCRA guidelines. Other useful sources include the American Association of State Highway Transportation Officials (AASHTO), California Manual on Uniform Traffic Control Devices (CA MUTCD) and American Disabilities Act Accessibility Guidelines (ADAAG).

In general, the Caltrans and MUTCD design standards shall be followed to the greatest extent practicable. Minor deviations may be permitted by NCRA. Major deviations that are consistent with the overall intent of the guidelines may be granted by the NCRA.

RWTs may take many forms. Though national design standards have not been developed for RWTs, the Federal Railroad Administration publishes minimum setback standards for objects and facilities adjacent to railroad tracks.

6.2.1 Width and Surface

A RWT along the NWP ROW may take the form of several different facility types, including a Caltrans Class I bike path, multi-purpose trail, and/or equestrian trail, depending on the surrounding land use, site characteristics, and anticipated user groups. Per the NCRA guidelines, the RWT path surface and bridges shall be designed and constructed to accommodate heavy railroad trucks and equipment if no other access is available for emergency vehicles. Design standards for each facility type are presented on the following pages.

Caltrans Class I Bike Paths

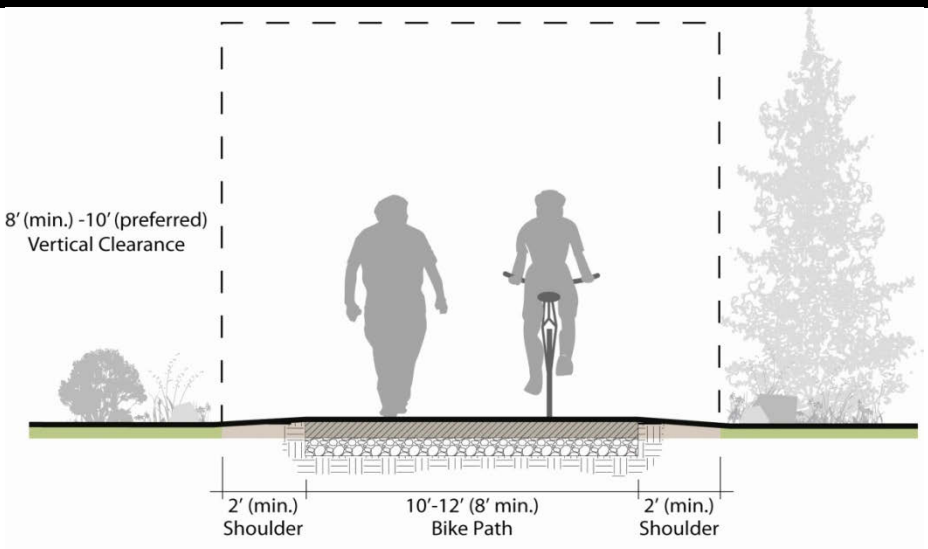
Description

Class I bike paths are facilities with exclusive ROW, with cross flows by motorists minimized. Section 890.4 of the Streets and Highways Code describes Class I bike paths as serving "the exclusive use of bicycles and pedestrians'. Experience has shown that if significant pedestrian use is anticipated, a completely separate facility for pedestrians is necessary to minimize conflicts. The Caltrans Highway Design Manual supports separate facilities and notes that the shared use of a path by pedestrians and bicycles is undesirable, and wherever possible the two uses should be separated. In practice, however, Class I bike paths are typically shared by bicyclists, pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

The anticipated range of users and forecast level of use by different user groups should dictate the design of each specific facility. Higher use, greater variety of use, and higher speed differentials all require greater width, increased separation of users, and greater attention to regulation and education of bike path users. At a minimum, Class I bike paths require an eight foot wide paved surface and two foot wide clear, graded shoulders on both sides. This minimum standard is not appropriate for moderate to high-use segments accommodating mixed uses or high speed bicycle traffic. For moderate to high-use segments, a wider paved surface of ten to twelve feet should be considered. In areas where a variety of users are expected, expanded unpaved shoulders should be included where possible. Where a path also doubles as an access route for maintenance or emergency vehicles, a minimum twelve foot wide path is recommended, as narrower paths tend to break up along the edges due to vehicle loads.

Class I paths immediately parallel and adjacent to highways must be separated from automobile traffic by a five foot separation or a two foot separation with barrier, per the Caltrans Highway Design Manual. Paths adjacent to roadways can provide critical links in regional trail systems where a local, county or Caltrans public ROW is the only viable alignment alternative. All standards set forth in Caltrans Highway Design Manual Chapter 1000 (1003.1) shall be met in order for a Class I bike path to serve as a transportation facility. In addition, the Manual of Uniform Traffic Control Devices (MUTCD) provides guidance on appropriate signage and controls at trail roadway intersections.

Graphic



This graphic is presented to illustrate classification standards and not meant as design guidelines.

Standards

- Ten to twelve foot paved width (eight foot min.)
- Twelve foot width where path doubles as an access route for maintenance or emergency vehicles
- Two foot minimum required clear graded shoulder width on each side, three feet is preferred
- Eight foot minimum vertical clearance, ten feet is preferred
- 2% cross slope to facilitate drainage
- A grade of 2% or less accommodates the widest range of cyclists and is recommended. A 5% (maximum) grade allowed. Steeper grades can be tolerated for short segments (up to 150 meters or about 500 feet), although design speeds should be increased and path width should allow for additional maneuverability.

Potential Applications

- High use commuter and recreational corridors where accommodation of bicyclists and pedestrians separate from local streets and highways is desirable
- Publicly-owned easements and ROWs that connect major community destinations or connect independent communities and may provide a non-motorized commute facility
- Caltrans ROWs where separated path is feasible and complementary to the existing State Route transportation function
- Railroad corridors (additional standards apply, see Rail Trails section)

Multi-Purpose Trails

Description

Unless designated otherwise, all recreation trails are considered multipurpose trails. Multipurpose trails are designed and managed for all types of non-motorized users and are substantially wider than other narrow soft-surface trails described below. Multipurpose trails are wide enough to accommodate the widest range of users among the natural surface trail types presented. As the width of the trail increases, the less technical the trail becomes, but it can also become more accessible to users with a broader range of abilities.

Anticipated levels of use, local public opinion, resource sensitivity and site evaluations should be used to determine whether or not a multipurpose trail is an appropriate solution. These paths, while constructed with native surface materials, provide wide treads and clearances potentially accommodating significant volumes of hikers, equestrians and bicyclists. Regulatory signs should be installed to alert trail users to their limitations and responsibilities for sharing the trail. Where hikers, bikers and equestrians are allowed on the same trail, "Yield to" signage should be installed to assign user ROWs.

Graphic

This graphic is presented to illustrate classification standards and not meant as design guidelines.

Standards

- Tread width varies from four to eight feet
- Allowance for passing
- Native materials
- Obstacles occasionally present
- Blockages cleared to define route and protect resources
- Prevailing grade five percent, with limited steeper segments
- Clearances and turning radius to accommodate all uses
- Yield ROW signage to encourage awareness of multiple user groups on the trail

Potential Applications

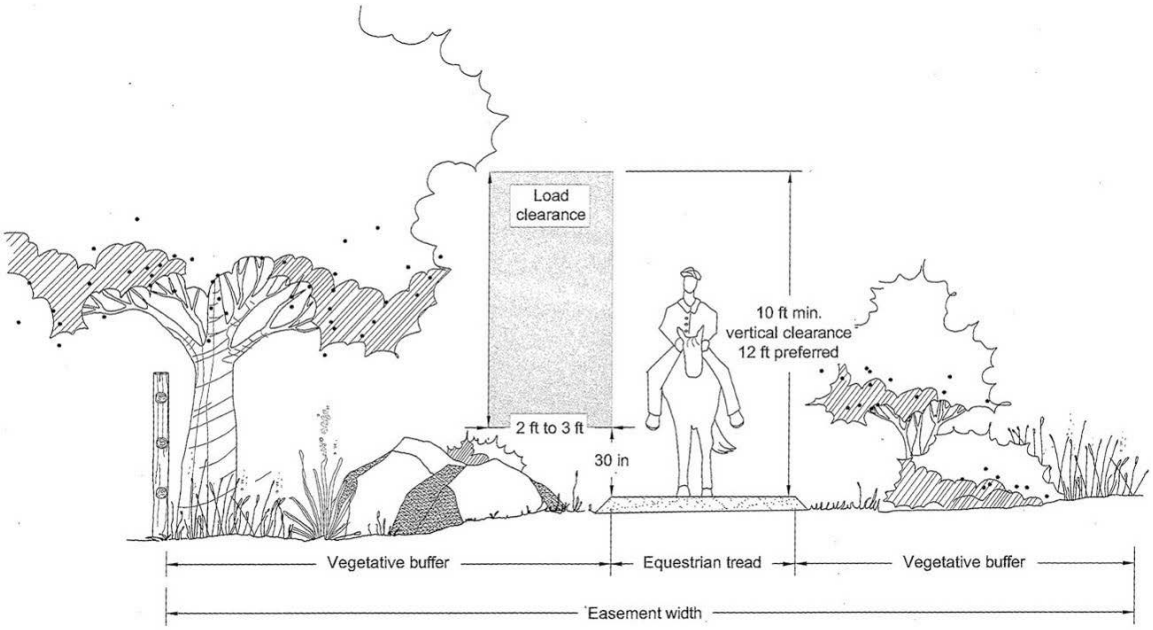
- Local parks and open space
- Low use areas of state and federal parks and resource lands
- Public utility corridors and ROWs not suited to paved multi-use pathways
- Not recommended as a high speed transportation facility for cyclists

Equestrian Trails

Description

Equestrian trails constructed as a part of the regional trails network should be designed to accommodate a horse and rider comfortably while minimizing the required zone of trail construction and maintenance impact. Regional equestrian trails should provide for local and long-distance trail rides. In all cases, these trails will also serve multiple user types. Basic dimensional requirements include an eighteen to thirty-six inch wide trail tread and appropriate horizontal clearances. Compacted natural soil is typically the preferred trail tread. A narrow eighteen inch trail tread should include a minimal twelve inch vegetation clearance on both sides of the trail, providing clear passage while preserving a backcountry trail ride experience. In high use and developed areas, a minimum tread of seven to eight feet should be provided to allow for riding side by side as well as opportunities for passing when bidirectional movements are expected. It should be noted that trails developed for equestrians are often comfortable for pedestrians.

Graphic

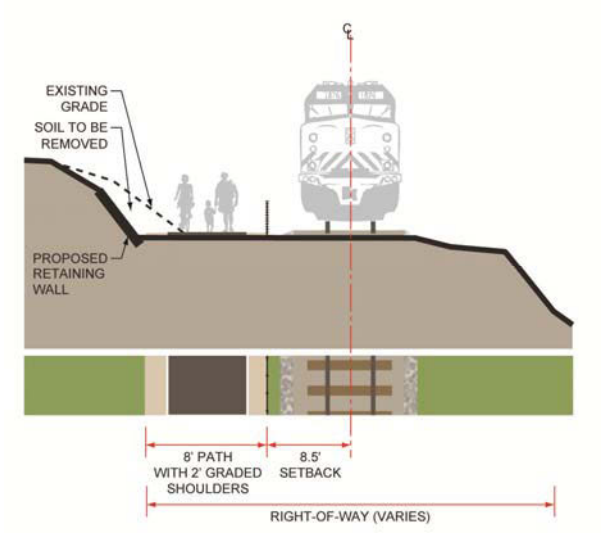


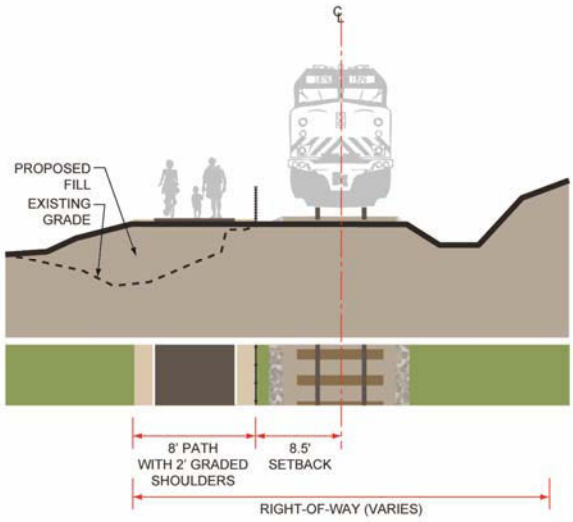
This graphic is presented to illustrate classification standards and not meant as design guidelines. The trail width and buffers will vary in implementation.
Source: USDA/FHWA, Equestrian Design Guidebook for Trails, Trailheads, and Campgrounds

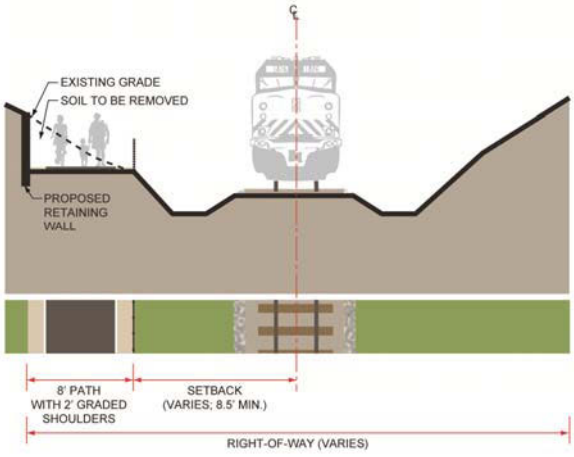
6.2.2 Setback from Rail Line

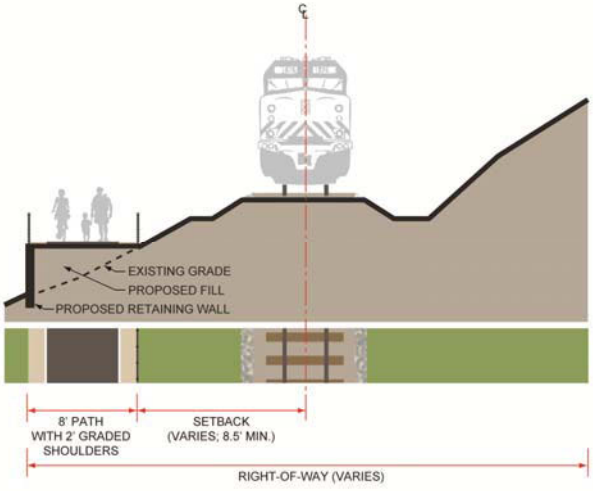
The NCRA guidelines state that RWTs must be placed at the outer edges of rail ROW to the greatest extent possible. Where placement of RWT along the outer property line would impact a sensitive resource, a lesser setback may be appropriate. Per the CPUC, the minimum setback for RWTs is 8.5 feet from a rail centerline along straight segments and 9.5 feet from a rail centerline around curves. Recommended minimum setbacks for the RWT and trail widths are presented on the following pages for urban and rural contexts.

Typical Paved RWT Sections - Rural



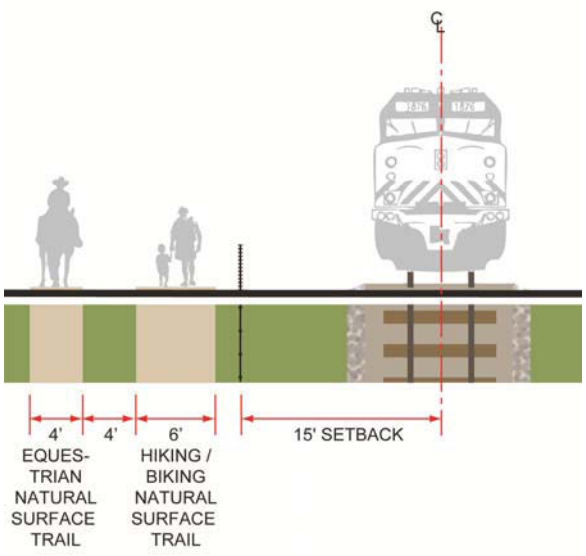


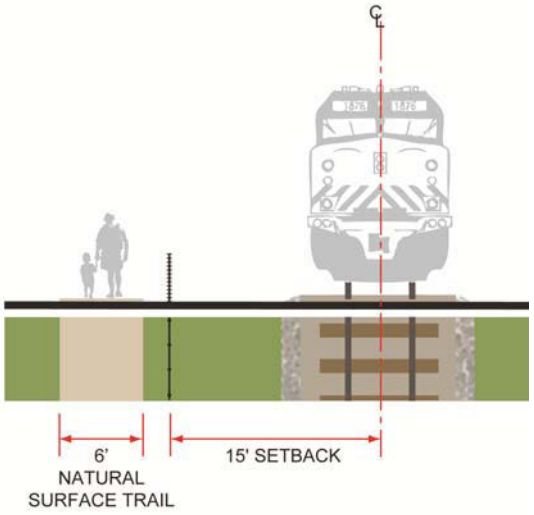




Again, note that the 8.5 foot setback is the minimum acceptable standard. Setback will vary with conditions.

Typical Unpaved RWT Sections - Rural





6.2.3 Accommodating Multiple Use

Description

Strategies to accommodate multiple user types can be categorized into design, management, outreach and coordination efforts. This section describes only design strategies. Management, outreach, and coordination are critical to successfully accommodate multiple uses and manage conflict and will be discussed in the Implementation Chapter.

Design strategies are defined as physical RWT configuration or alignment treatments intended to reduce conflicts between users and/or increase overall safety on multiuse RWTs. Design strategies to address RWT use conflict are typically presented in the context of design for safe, sustainable shared trail use.

RWT Width and Passing Space. RWT width determines whether users can pass each other easily and safely. It also impacts speed; a wide RWT may facilitate higher biking speeds. In general, trail management agencies recommend providing sufficient width relative to the expected amount or type of use. Some agencies recommend that trails to accommodate hikers, equestrians, and mountain bikers should be at least four feet wide while others recommend a three-foot minimum. The U.S. Forest Service states that hiker- and equestrian-only trails can be as narrow as 1.5 feet wide.

Where trails are too narrow for users to pass each other, clear areas or stable shoulders can act as passing areas to reduce conflicts. A passing area or a stable shoulder can be created from a wide earthen bench that is allowed to overgrow. Alternately, where the bench or shoulder cannot continuously provide passing space, passing areas may be provided at regular intervals. Where the width of the trail is less than five feet, passing should be provided every 1,000 feet. The U.S. Forest Service recommends passing spaces for equestrians of five feet wide by 10 feet long to allow a single trail animal to pull off the tread.

Sight Distance. Specific standards for sight distance are rarely cited in the research, and tend to vary. The U.S. Forest Service notes that recommended sight distances for equestrians vary and are most commonly 50 to 100 feet. Some trail management agencies recommend a 100-foot average sight distance on trails. Sight line issues can also be addressed with a policy of regularly thinning overgrowth, especially near curves.

Speed Control Features. Placing or using elements along the trail corridor can create narrowing and turns that encourage users to slow down as they approach crossings or narrow trail segments. These elements have a wide variety of designs and names including: 'trail anchors,' 'technical trail features,' and 'choke points.'
While agencies commonly use these measures for controlling speeds, few design guidelines or manuals provide specific instructions for their use. If installed incorrectly or not maintained, these features could exacerbate conflicts by creating conflict areas, blind corners, or increasing speeds.

The International Mountain Biking Association (IMBA) manuals (2004 and 2007) are commonly referred to sources which detail the use of obstacles and choke points. In managing mountain biking, IMBA recommends adjusting the trail 'flow' with anchors, turns, choke points, and surface textures to control speeds (2007). Sufficient sight distance for users is required to see the obstacle and slow down in advance of the feature, although the document does not recommend specific distances. This may be more applicable in less populated areas where the Rail-with Trail may serve recreational connections in the county.

Gradient. Trails can be constructed with a grade change so that users approach a ridge nose (where sightlines are poor) or a trail intersection at an uphill in either direction, slowing users at potential conflict areas. Grade rises can be built on approaches to trail junctions and in locations with poor sight lines. These techniques can enhance the trail experience for all users and are a key element of sustainable trails. Abrupt changes in grade should be avoided, as should fall line trails, which exacerbate erosion.

Curvilinear/Sinuous Design. Trails should be designed with curves to follow the natural topography, reduce users' speeds, and to create a more varied and enjoyable trail experience. This can be created through the use of trail anchors and pinch points, or by weaving the trail between trees and other features. 'Chicane-style traffic calming' can reduce speeds on soft-surface trails.

Turns should not be sudden or too tight for users to safely negotiate. Adequate sight distances must be provided. The U.S. Forest Service notes that horses can comfortably negotiate a minimum turn radius of five feet, with six to eight feet preferred. Portland Parks & Recreation recommends that the turn radius of a hiking/mountain biking trail where equestrians are allowed should be 10 feet minimum.

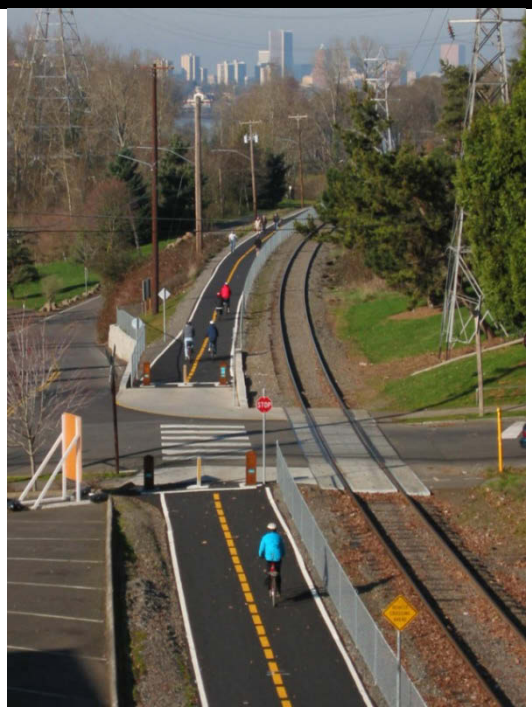
Separate Trails and Specialized Trails. Some agencies provide alternate routes for different user types. They provide loop trails or an arterial multi-use trail leading to single-use trails, and they may designate a use-intensive trail or area. While it is a common strategy to separate users who travel at different speeds, often with parallel treads in the same trail corridor, this treatment is inconsistent with California State Parks trail policy.

6.2.4 At-Grade Roadway Crossings

Description

Where a proposed RWT will cross a roadway at-grade, it is important to remember two items: 1) RWT users will be enjoying an auto-free experience and may enter into an intersection unexpectedly; and 2) motorists may not anticipate bicyclists riding out into the roadway from a perpendicular RWT. However, in most cases, it is possible to design an at-grade RWT crossing with a reasonable degree of safety while meeting existing traffic engineering standards. Evaluation of multipurpose RWT crossings should involve an analysis of vehicular traffic patterns, as well as consideration of the behavior of trail users. This includes traffic speeds (85th percentile), street width, traffic volumes (average daily traffic and peak hour traffic), line of sight, and trail user profile (age distribution, range of mobility, destinations). A traffic safety study should be conducted as part of the actual civil engineering design of the proposed crossings to determine the most appropriate design features. This study would identify the most appropriate crossing options given available information, which must be verified and/or refined through the actual engineering and construction document stage.

Graphic



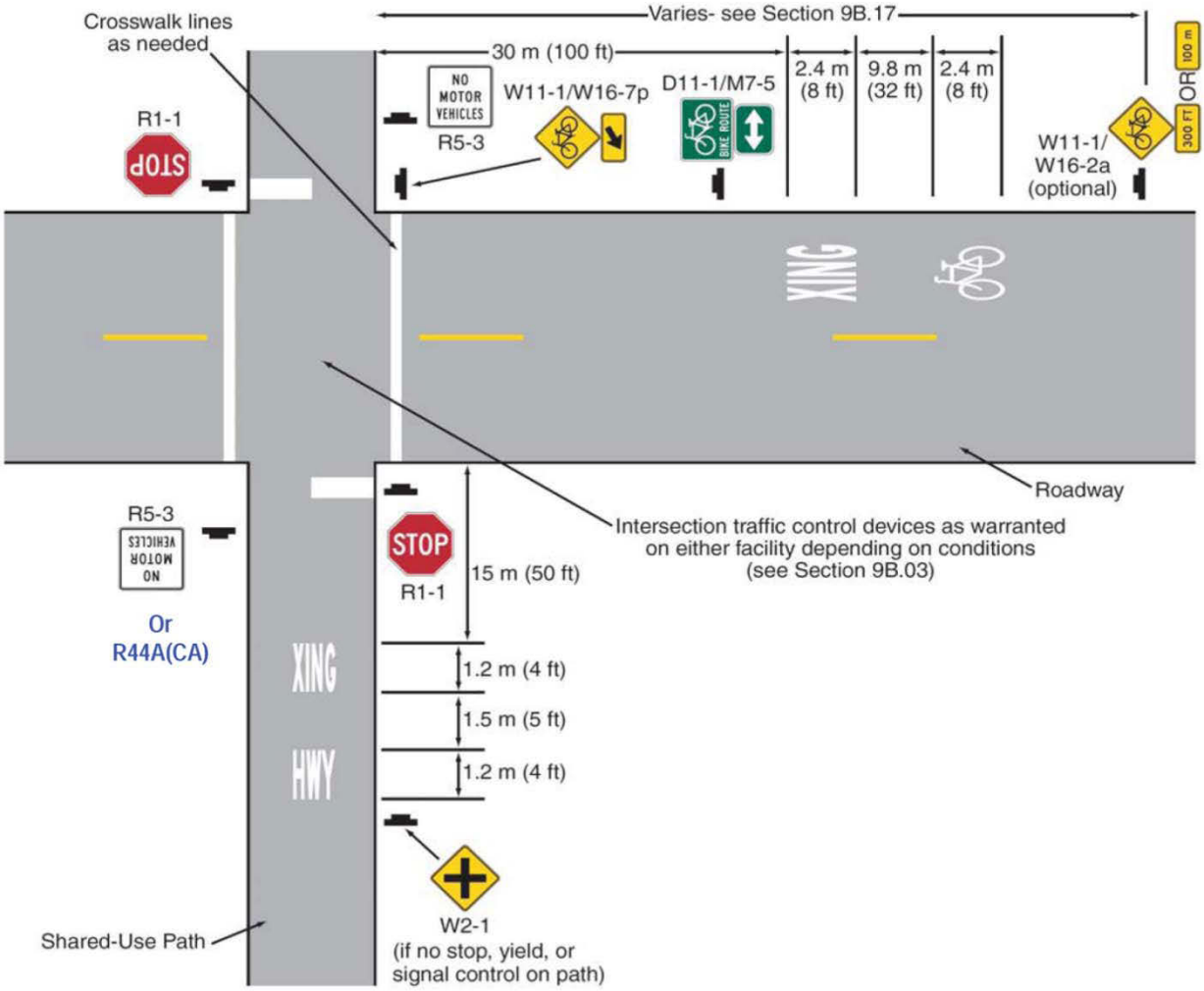
Trail crossing on the Springwater Trail in Portland, OR

Standards (CA MUTCD)

- Intersection Warning (W2-1) signs should not be used where the shared-use path approaches a controlled intersection
- Engineering judgment may determine that limited visibility of a controlled intersection may require Intersection Warning signs.
- Bicycle Warning signs (W11-1) alert the road user to unexpected entries onto the roadway by bicyclists
- Intersection traffic control (R1-1) may be applied to either facility

Graphic (CA MUTCD, Part 9)

Figure 9B-7. Examples of Signing and Markings for Shared-Use Paths



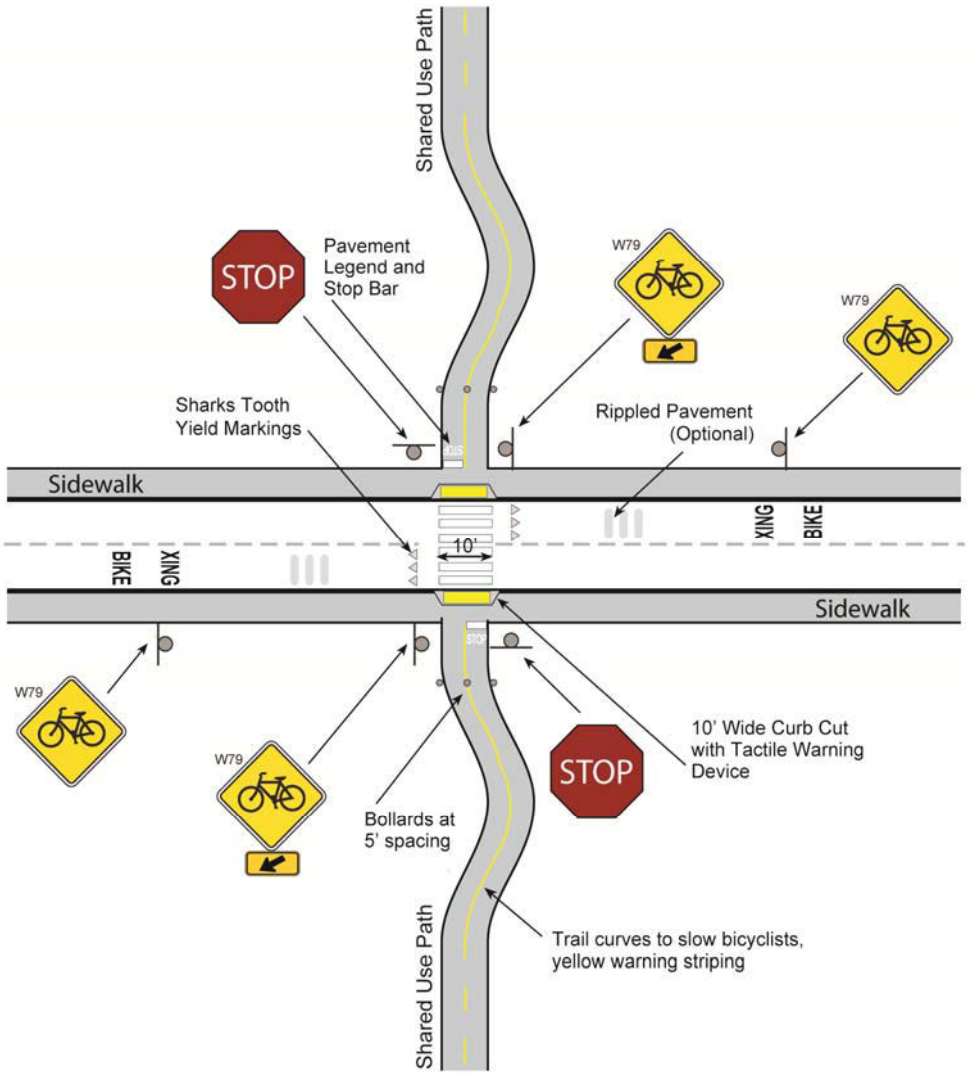
Type 1: Unprotected Midblock Crossings

Description

Uncontrolled or Type 1 mid-block crossings (unsignalized, but potentially with other traffic control devices) are recommended for streets with 85th percentile travel speeds below 45 mph and Average Daily Trips (ADTs) below 10,000 vehicles.

The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, RWT traffic, use patterns, road type and width, and other safety issues.

Graphic (CA MUTCD, Part 9)



Type 1 Unprotected Crossing

Type 2: Route to Existing Intersections

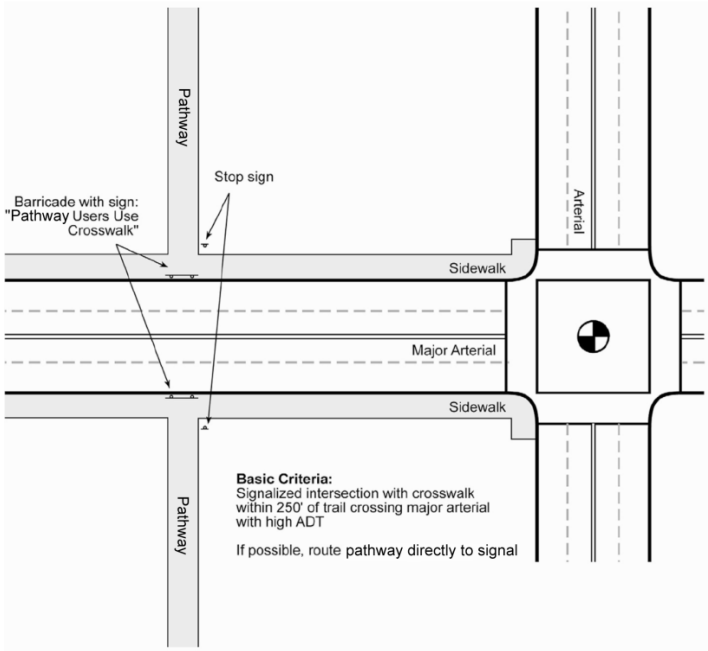
Description

RWTs that either parallel a roadway or emerge closer than 200 feet from a protected intersection should be routed to that intersection in most cases. Motorists are not expecting to see pedestrians and bicyclists crossing so close to an intersection, traffic congestion may extend to the point of trail emergence, and the crossing may unnecessarily impact traffic capacity on a corridor.

One of the key challenges with using existing intersections is that it requires bicyclists to transition from a separated two-way facility to pedestrian facilities such as sidewalks and crosswalks, normally reserved for pedestrians. Widening and striping the sidewalk (if possible) between the trail and intersection may help to alleviate some of these concerns.

Where the RWT does not emerge at an existing intersection, carefully thought out physical design and directional signing will be required to keep bicyclists and others from crossing at the unmarked location. Signs warning motorists of the presence of bicycles may be needed, as well as right turn on red prohibitions.

Standards



Type 2 Crossing

Maximum Distance from Trail to Intersection:

- 200' for street width 40' or less
- 350' for street width over 40'

Length of barrier to prevent informal crossing:

- 50' for street width 40' or less
- 100' for street width over 40'

Intersection Improvements:

- Warning signs for motorists
- Right turn on red prohibitions
- Elimination of high speed and free right turns
- Adequate crossing time
- Pedestrian-activated signals

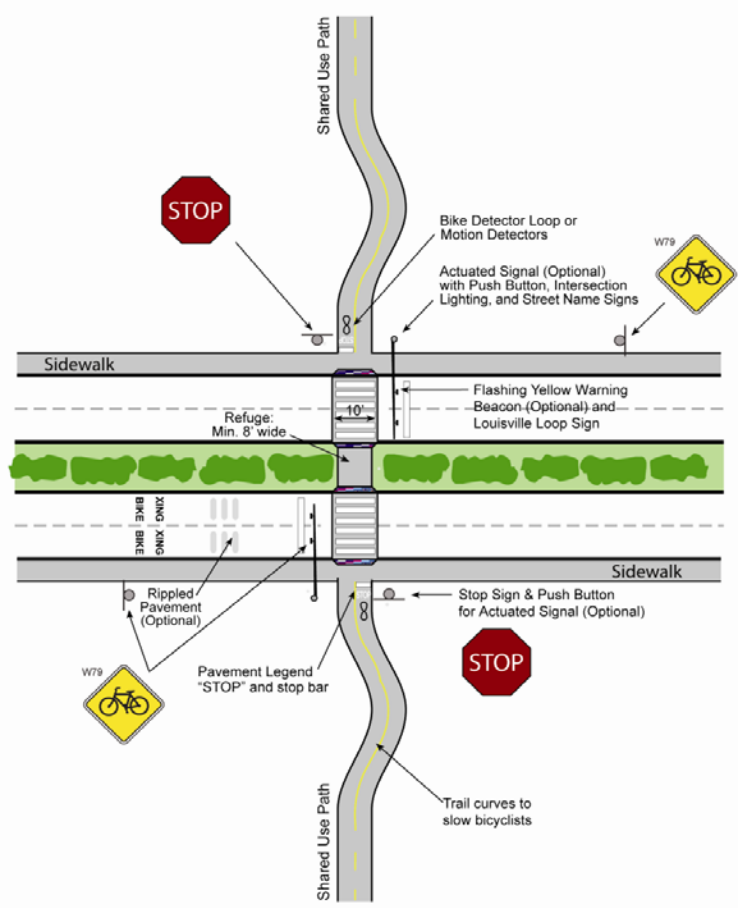
Type 3: Signalized Midblock Crossings

Description

New or exclusive signalized crossings (Type 3) are identified for crossings more than 200 feet from an existing signalized intersection and where 85th-percentile travel speeds are 45 mph and above and/or ADTs exceed 10,000 vehicles. New signals require the input of local traffic engineers, who review potential impacts on traffic progression, capacity, and safety. On corridors with timed signals, a new trail crossing may need to be coordinated with adjacent signals to maximize efficiency.

RWT signals are normally activated by push buttons, but may also be triggered by motion detectors. The maximum delay for activation of the signal should be sixty seconds, with minimum crossing times determined by the width of the street and trail volumes. The signals may rest on flashing yellow or green for motorists when not activated, and should be supplemented by standard advance warning signs. Typical costs for a signalized crossing range from $75,000 to $150,000.

Graphic (CA MUTCD, Part 9)



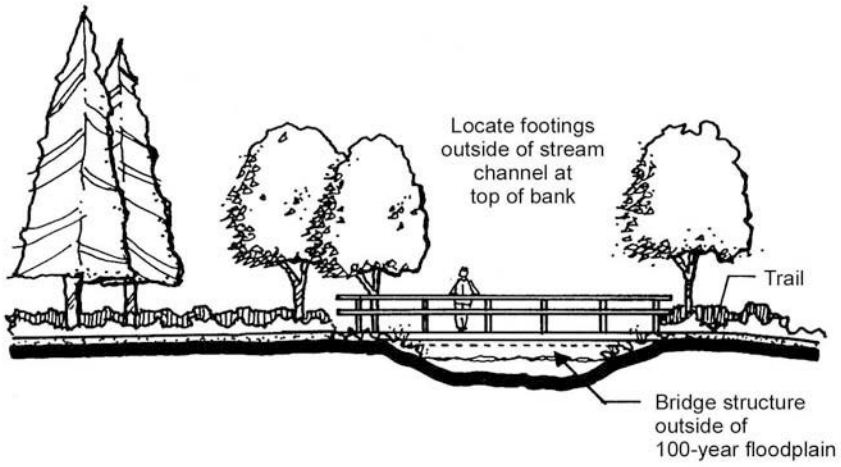
Type 3 Signalized Crossing

6.2.5 Stream or River Crossings

Description

The RWT may require a stream or river crossing with a bridge. While bridges can be some of the most interesting features of a RWT system, they can also be the most challenging. Bridges should be at least as wide as the trail. ADA guidelines require handrails no shorter than thirty-six inches and decking material that is firm and stable. Bridges should accommodate maintenance vehicles if anticipated. Footings should be located on the outside of the stream channel at the top of the stream bank. The bridge should not impede fish passage or constrict the floodway. All bridges and footings in the corridor will need to be designed by a registered structural engineer. Cost, design, and environmental compatibility will dictate which structure is best for the trail corridor.

Graphic



6.2.6 Railroad Trestles, Bridges and Tunnels

Description

The numerous trestles, bridges, and tunnels on the NWP corridor in Mendocino County represent major barriers to any new RWT. Where needed, new bridges for the RWT will be required where there are creek crossings—most likely pre-fabricated steel structures that can be lifted into place. Bridge abutments need to be designed to minimize environmental impact, and no piers should be placed within the flood zone whenever feasible. Some of the longer spans (over 200 feet) may require very expensive engineered solutions that could prove to be cost prohibitive. The longest span in Mendocino County is 374 feet (Feliz Creek), located just south of Hopland. On the sections north of Dos Rios, it may be possible to use the existing trestles under the agreement with the NCRA to maintain the structures and vacate them if/when rail service returns.

Tunnels also represent major barriers for the RWT. Most of the tunnels are located north of Willits. There are only two options for a RWT when it confronts a tunnel on the NWP corridor: (1) use the tunnel under agreement with the NCRA to provide adequate maintenance and relinquish the tunnel when rail service returns, or (2) attempt to go around or over the rock, hill or mountain. Either option is likely to be very expensive. However, old railroad tunnels are being used by RWTs in California and throughout the country successfully. The images below show the recently restored Cal Park Tunnel on the NWP corridor in Marin County, which will be shared with the future rail service.

Graphic

6.3 Key RWT Design Elements

6.3.1 Design themes

A RWT theme creates a cohesive and memorable RWT, while establishing a distinctive, clearly recognized identity or "sense of place." Numerous influences can inspire a path theme. It can draw on the area's cultural or historical context thereby giving a sense of continuity within and connection to the larger region. The path identity could reveal natural, historic and cultural patterns in the landscape. The theme brands a RWT segment as a unique place and provides a reason for people to experience it. A theme and corresponding name would help establish the RWT as a destination.

A unifying theme serves to inform subsequent design elements from site furnishings to interpretive information and art installations. A RWT specific logo may also be developed to complement the name. The path theme can be expressed in building materials, craftsmanship, how the RWT responds to climate (ex: use of shade structures, color or drought-tolerant plantings) and natural, historic and cultural references, to name a few.

6.3.2 Entrance Features

RWT entrance features would help people find and continue on the RWT. Entrances could feature a combination of split rail fencing, native plantings, wayfinding signs, interpretive installations or signage, and/or public art. Each of these features is described separately in this section.

6.3.3 Public Art

Local artists can be commissioned to provide art for the RWT and its theme, making it unique. Art installations may be functional as well as aesthetic, providing places for trail users to sit and play. Artistic themes can draw upon the history or environmental surroundings of the NWP railroad. Public art can add to the RWT experience, especially for children. Art is best suited in high visibility areas, such as intersection access points and key landmarks along the NWP ROW. In general, all art installations should be located three to six feet from the edge of the paved surface.

6.3.4 Environmental Access/Interpretation/Enhancement

Interpretive installations and signs enhance the RWT experience by providing information about the history and culture of the area. Installations may discuss local ecology, people, environmental issues, and other educational information. Interpretive elements may take many forms from the standard sign to interactive features. Educational information may be placed at scenic view areas or in relation to specific elements being interpreted.

6.3.5 Striping and Markings

Striping and other markings along paved RWTs assist users by indicating assigned travel ways or directions and provide advance information for turning and crossing maneuvers. A dashed centerline stripe may be used on RWTs where passing is allowed. A solid centerline may be used where passing is discouraged, such as at blind corners, high traffic areas, areas of narrow RWT width, intersection approaches, and/or areas where nighttime riding is expected with limited lighting. A solid white line may be used to separate different types of

users (e.g., bicyclists and pedestrians). Warning markings shall be placed no less than 50 feet in advance of cautionary conditions.

Obstructions in the traveled way of a multi-use trail shall be marked with retroreflectorized material or appropriate object markers. Trail obstructions and vertical features, such as abutments, bollards, and other fixed objects or features that cause trail constriction should be avoided. However, when necessary, they should be marked with a 4-inch wide pavement stripe to gain the attention of approaching trail users.

A retroreflective pavement striping pattern brings attention to this bollard

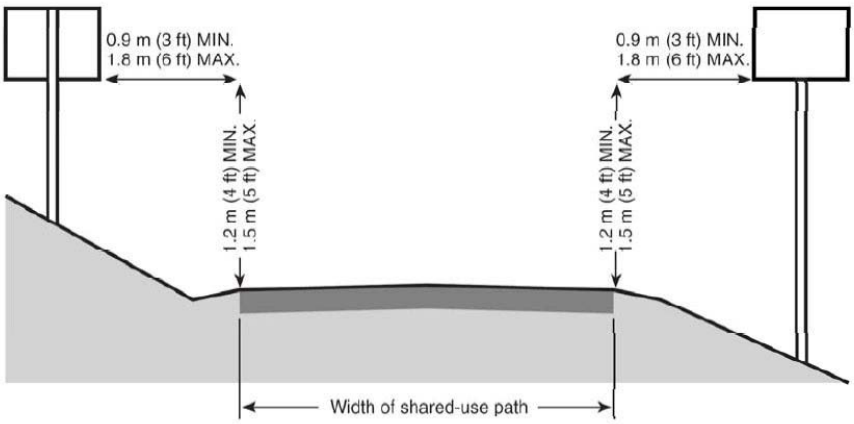
6.3.6 Signs

Signs and markings are an important component of safely directing and regulating bicycle, pedestrian and equestrian usage on regional trail facilities. The California Manual on Uniform Traffic Control Devices (CA MUTCD), Part 9 Traffic Controls for Bicycle Facilities, 2003, should be consulted for typical design standards.

Design and Placement

The CA MUTCD states that all signs shall be retroreflectorized. Standard sizes for signs oriented towards bicyclists and motor vehicle drivers are available in Part 9 of the CA MUTCD. Vertical sign clearances from RWTs shall be between four and five feet. Horizontal clearances shall be between three and six feet from path edge.

The final striping, marking, and signing plan for the RWT will be resolved in the full design phase of the RWT, and should be reviewed and approved by a licensed traffic engineer or civil engineer. This will be most important at locations where there are poor sight lines from the RWT to cross-traffic (either RWT user or motor vehicle).



The CAMUTCD specifies clearances for signs on shared-use paths

Regulatory Signs

Description

Regulatory signs should state the rules and regulations associated with trail usage, and identify the managing agency, organization or group. The purpose of RWT regulations is to promote user safety and enhance the enjoyment of all users. It is imperative that before any RWT is opened, RWT use regulations are developed and posted at trailheads and key access points. RWT maps and informational materials might include these regulations as well. Establishing that the RWT facility is a regulated traffic environment just like other ROWs is critical for compliance, and often results in a facility requiring minimal enforcement. An attorney can review the trail regulations for consistency with existing ordinances and enforceability. In some locations, it may be necessary to pass additional ordinances to implement trail regulations.

Typical Trail Regulations	Graphic
• Hours of use • Motorized vehicles, other than power-assisted wheelchairs, are prohibited • Keep to the right except when passing • Yield to oncoming traffic when passing • Bicyclists yield to pedestrians and equestrians • Give an audible warning when passing • Pets must always be on short leashes • Travel no more than two abreast • Alcoholic beverages are not permitted on the trail • Do not wander off of trail onto adjacent properties	  **Sign displaying trail rules**

Warning Signs

Description

Warning signage alerts RWT users of upcoming conditions, which may include steep grades, potential conflicts, turns and roadway crossings. Warning signs should be installed in a location that provides the trail user with ample time to react. Care must be taken not to place too many signs at crossings lest they overwhelm the user and lose their impact. Sign selection, sizing, clearances and locations are specified in the CA MUTCD, Part 9.

Warning signs should also be installed to alert vehicle drivers of the potential presence of RWT users at intersections.

Graphic

Typical warning plaque

W8-10: Bicycle Surface Condition Warning Sign

Wayfinding Signs

Description

A comprehensive sign system makes a trail system memorable and navigable. Informational kiosks with maps at trailheads and other RWT user generators can provide enough information for someone to use the RWT with little introduction. A RWT wayfinding map typically includes current location, nearby destinations, and prominent natural and built features.

RWT navigability and identity is enhanced by having a consistent, unique logo or design that will help guide people to and along the RWT. Gateways or entry markers at major access points further augment the RWT experience. They should be visually clear and distinctive while maintaining consistency with other sign features found on the RWT.

Clear, pedestrian-scaled signs and markers will aid in wayfinding and separation of user groups. Signs should be consolidated to avoid clutter and sign fatigue. In addition to a trail logo being posted on bollards, gates, and at trailheads, wayfinding markers and signs should be placed at key decision points and non-motorized facility junctions. Distances may also be marked periodically so that RWT users who wish to pace themselves have a means of doing so.

Graphic	
	 
Destination and distance information (California Coastal Trail)	**Directional arrows (Bay Area Ridge Trail)**
  	 
Pedestrian scaled mile marker signs	**Trail markers**

Interpretive Installations

Description
Interpretive installations and signs can enhance the trail experience by providing information about the history, culture, and ecology of the area. Installations may discuss local flora and fauna, environmental issues, and other educational information. While interpretive features are often assumed to be sign elements, a variety of means may be used to convey interpretive information including art pieces and interactive exhibits.
Graphic
 

6.3.7 Fencing and Barriers

Given that the RWT alignment occurs within a scenic area, the use of fencing may be considered an impairment to the scenic resource. However, given the narrow nature of the corridor and minimal separation from the railroad track, some type of acceptable barrier design will need to be developed.

A wide variety of physical barriers are used in RWT corridors. Of the 65 RWT facilities surveyed in the United States today, 71 percent have a physical barrier between the trail and tracks. The types of barriers in use include fences, walls, vegetation, grade differences, and ditches.

Operational considerations (right-of-way widths, frequency of use, access to loads, vehicle speeds, etc.) for the line paralleling the RWT may prevent the use of a barrier in some segments.

Fences are the most common type of physical barrier used in RWT corridors. A number of fencing types are available, ranging from simple wood post and rail fences to tall, heavy-duty steel fences. Selection of a fencing type, height, and location depends on the frequency and speed of trains, number of trail users, amount of trespassing anticipated along a given segment of the RWT, concern for entrapment on the wrong side of the fence, and the aesthetic qualities desired.

Need for Fencing

Factors to consider when deciding on fencing necessity and styles include:

- Safety: Fencing can be used as an indicator to alert trail users to a hazard and to reduce inadvertent trespass.
- Security: Fencing between the trail and adjacent land uses can protect the privacy and security of adjacent property owners. While crime and vandalism have not proven to be a common problem along most multi-use trails, fencing is often included. The type, height, and material of the fencing are subject to local policies.
- Historic crossing locations: The height and design of a fence influences whether lateral movement will be inhibited. Few fences are successful at preventing people from continuing to cross at historic illegal crossing locations. Fencing that cannot be climbed will typically be cut or otherwise vandalized. Heavy-duty fencing such as wrought iron or other styles of fencing that are difficult to climb are often more expensive.
- Cost: Fencing and other barriers, depending on the type of materials used and the length, can be costly, so options should be considered carefully.
- Openings: Fencing and fence posts, especially end posts, can become collision hazards. The number of openings should be minimized, trail setbacks should be observed, and the design should not present sharp or dangerous protrusions.

Recommendation

Where fencing is to be installed along the corridor, it should be located a minimum of 8.5 feet (9.5 on curves) from the nearest track centerline and a minimum of 2 feet from the edge of the trail tread (3 feet of separation is preferred). Where the fence is located within 15 feet of the centerline of the nearest track, it should be designed with periodic removable sections for rail maintenance work, unless adequate access can be provided on the opposite side of the tracks. All fencing should provide breaks or openings at least five feet wide every 500 feet to allow emergency access and escape.

With normal setback, fencing height should range between 36 and 48 inches, with 42 inches standard.

Regardless of fence type, railroad maintenance vehicles and/or emergency vehicles may need fence gates in certain areas to facilitate access to the track and/or trail. Fence design should be coordinated with railroad maintenance personnel, as well as representatives from utilities that extend along the corridor.

Per the NCRA guidelines, a three-rail split-rail fence, in combination with landscaping, which can serve both as a visual and physical barrier, may be used in a rural or environmentally sensitive areas. Fence and/or barrier designs will be reviewed and approved by NCRA.

6.3.8 Landscaping and Lighting

The plant palette for the RWT should be reflective of the local environment. Low maintenance, low water-use, native and locally adapted species will ensure healthy plant materials over time. Plant materials may serve different functions depending on the specific needs of an area. Plantings along any fences or barriers would soften views of the fence or barrier. The project landscaping shall meet all requirements specified by the Member Agencies.

Lighting improves the safety of the RWT user by increasing visibility during non-daylight hours. Lighting should consider the surrounding land use to minimize unwanted light pollution. Lighting fixtures should be pedestrian scale and installed near benches, drinking fountains, bicycle racks, trailheads, and roadway crossings.

Under certain circumstances, lights can disorient migratory birds flying at night or attract wildlife, such as insects and insectivores. Potential adverse impacts of new or modified light sources and any appropriate mitigation will need to be determined on a case-by-case basis during environmental review in compliance with CEQA and/or NEPA. In general, lighting systems should direct light to prescribed areas with limited scatter. Lights should avoid unnecessary glare, night sky pollution, light trespass on neighboring properties, and energy waste.

6.3.9 Amenities

Amenities enhance the RWT experience, encourage RWT usage and make RWTs more comfortable for the user. Basic amenities include: benches, trash receptacles, shade opportunities, and signs. In central Mendocino County, shade and water are important amenities for trails and trailheads. Enhanced amenities include: trail specific logos, art installations, interpretative elements, and creative applications to reinforce a RWT brand or a "sense of place". RWT elements should be constructed of durable, low maintenance materials such as concrete, stone and metals. Amenities and RWT support features should be placed a minimum of two feet from edge of RWT.

Site Furnishings

RWTs with high user volumes, particularly those that have drive-in access and service a destination point, should provide amenities to support users. Amenities include trash and recycling receptacles, benches, restrooms, and informational kiosks. RWTs that restrict bike or equestrian use, or that facilitate pedestrian coastal access, should provide parking for bikes and horses at their entrances.

Seating & Tables

Providing seating at key rest areas and other appropriate locations encourages people of all ages to use the RWT by ensuring that they have a place to rest along the way. Seating can be simple benches with wood slats or more ornate with stone, wrought iron, and concrete. Benches should ideally utilize shady areas to provide RWT users relief from the sun. Tables provide picnicking opportunities and should be installed in easily accessible areas near trailheads.

Shaded seating node along the trail

Bicycle Parking

Bicycle parking allows RWT users to safely park their bicycles if they wish to stop along the way or leave their bicycle at trailheads while they hike. Bicycle parking may be installed at trailheads, intersections with trails that prohibit bicycle use, and at popular destinations along a RWT.

Restrooms

A properly designed public restroom improves the experience of both those who operate the facility and those who use it. Proper design reduces queuing, misuse and the potential for vandalism and lowers initial and recurring costs. At a minimum, restroom layout and design must comply with the ADA and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities. The recommendations below may further improve safety for users and lower maintenance costs.

- Restrooms should be sited to benefit from natural surveillance by the community. Activate the surrounding area with information kiosks, picnic areas, bus stops or parking pay stations.
- Choose vandal-resistant hardware and graffiti-resistant surfaces.
- Clean restrooms frequently. A high level of maintenance can be an effective deterrent to vandalism, litter, and encroachments. Establish a monitoring and evaluation plan for maintenance.
- Lower the risk of in-stall vandalism by putting sinks and trash bins outside in the open.
- Consider the installation of unisex stalls. With unisex stalls, individual toilets can be cleaned or repaired without closing the facility.
- Install a tap for power washing.
- Install ample lighting. Special lighting may be required at entry vestibules.

Parcourse or Fitness Trail

A parcourse or fitness trail is an outdoor exercise track or course, especially for joggers, equipped with a series of stations along the way where one is to stop and perform a specific exercise. They can be incorporated with the trail corridor or developed in an adjacent space.

The courses are typically designed to promote fitness training with equipment located to provide specific forms of exercise. The design can incorporate natural features including climbable rocks, trees, and river embankments, or manufactured products (stepping posts, chin-up and climbing bars) designed to provide similar physical challenges. The degree of difficulty of a course is determined by terrain slope, trail surface (dirt, grass, gravel, etc.), obstacle height (walls) or length (crawls) and other features.

7. Implementation

This chapter provides a general framework for timing implementation as well as information for operations and maintenance of the of the Rail-with-Trail segments for both near term and long term projects.

7.1 Recommended Trail Phasing

The eight criteria described below were developed to help classify RWT segments for phased implementation. The criteria were developed to give weight, and therefore higher priority, to those RWT segments that best support the plan goals.

1. **Public Input.** The MCOG RWT Corridor Plan process engaged the public through workshops and a survey. During these outreach efforts, public input concerning preferred RWT segments was collected. RWT segments with demonstrated public endorsement receive a high score for this prioritization criterion.
2. **Proximity to Population Centers.** Population centers in Mendocino County along the NCRA rail line include the incorporated cities of Ukiah and Willits and the unincorporated area of Redwood Valley. RWT segments near population centers are likely to experience the most use and support residents who choose to bicycle or walk for transportation. RWT segments within three miles of population centers receive a high score for this prioritization criterion.
3. **Proximity to Activity Centers.** Activity centers are major trip destinations within Mendocino County (e.g. parks, commercial districts, employment centers, schools, etc.). By increasing pedestrian and bicycle accessibility to major activity centers, the MCOG RWT Corridor Plan can reduce traffic congestion and support residents and visitors who choose to bicycle or walk for transportation. RWT segments within ¼ mile of activity centers receive a high score for this prioritization criterion.
4. **Connection with other Pedestrian and Bicycle Facilities.** Creating connectivity to existing pedestrian, bicycle, and/or equestrian facilities enable more non-motorized trips to be made, and provides RWT users multiple routes for reaching their destination. RWT segments that connect to existing and proposed trail or other bicycle or pedestrian facilities will help create a robust network. Facilities that connect to an existing or proposed trail or other bicycle or pedestrian facility would receive a high score for this prioritization criterion.
5. **Connection with other RWT Segments.** Gaps in the RWT corridor discourage RWT use because they limit route continuity or require RWT users to choose alternate routes to access their destinations. RWT segments that fill a gap in the MCOG RWT Corridor and/or connect with other RWT segments would receive a high score for this prioritization criterion.
6. **Environmental Constraints.** The NCRA rail corridor through Mendocino County includes environmentally sensitive resources, including wetlands and drainageways. Environmental constraints may increase the complexity and difficulty of permitting certain RWT segments. RWT segments with minimal environmental constraints receive a high score for this prioritization criterion.

7. **Constructability.** The number of impediments within the RWT footprint that must be addressed will affect constructability. This could be in the form of railroad structures essential to rail operation or stream crossings that affect cost. It could also include geographic constraints, terrain, etc. RWT segments with few impediments receive a high score for this prioritization criterion.
8. **Ease of Maintenance.** Ease of maintenance would be affected by several factors, including the type of facility constructed, materials used, and the remoteness of the RWT segment. RWT segments anticipated to have a high ease of maintenance receive a high score for this criterion.

7.1.1 Phase I Priority Projects (0-5 years)

The selection of the Phase I projects was previously discussed in Chapter 5. These projects are slated to be funded and completed within five (5) years, or, by 2017. The success of the three Phase I projects, including their ability to attract funding, will largely determine the success of the entire system. With the Ukiah Phase I segment already funded, MCOG and relevant local agencies should actively pursue available state and federal funding for the other two priority segments. These projects will be more attractive to funding agencies with preliminary engineering and cost estimates completed as part of this planning process. While local economic conditions make raising local funds difficult, any local match that can be secured to advance these projects and leverage outside funding is invaluable.

7.1.2 Phase II Projects (5-10 years)

The Phase II projects (see below) are slated to be completed within 10 years, or, by 2022. As noted, the trail phasing was determined by a review of criteria based on a combination of feasibility, connections to communities and activity areas. A brief description of these segments is presented below.

Hopland Area Segments (S3, S4)

These two segments would provide a continuous 3.5 mile pathway through Hopland. The corridor would extend northward and southward into the surrounding residential and farming areas. This route could be popular with visitors as well since it connects to tourist businesses (including wineries) and the right-of-way traverses vineyards in the vicinity.

South Ukiah Segments (S8, S9, S11)

These three segments would connect to the Phase I Ukiah pathway (East Gobbi Street-Clara Avenue) to the south, providing a connection from El Roble Road into the city. These segments are typically on level terrain with few feasibility issues, and also serve local homes and businesses.

North Ukiah-Redwood Valley Area Segments (S11, C2, C3)

These segments would provide a direct connection from Redwood Valley (Laughlin) into Ukiah, connecting to the Phase I segments between Brush St-Lake Mendocino Drive, and East Gobbi St. and Clara Avenue. These segments will serve residential, commercial areas and farmlands north of Ukiah. In addition, the segment could provide connections into Ukiah-area schools and businesses. The terrain in this area is flat with few obstacles to developing a Class I paved bicycle path.

Willits Area Segments (C6, C8)

These two segments will connect to the Phase I segment in Willits (US 101 – East Valley Street) on the north and south, eventually providing a continuous pathway from East Hill Rd. on the south to Casteel Lane on the north. These three segments would provide connections into Willits from surrounding residential and commercial areas.

7.1.3 Phase III Projects (10-20 years)

The Phase III projects (see below) may be completed within 20 years, or, by 2032. These segments were selected for longer term implementation based on a combination of feasibility and connections to communities and activity areas. Segments N 4, N5, and N6 (Eel River Canyon) are not included on the list of long term projects for several reasons, including: (a) the extent of landslides, (b) the number of bridges and tunnels, (c) the isolation of the canyon, (d) concerns about fire and emergency access, and (e) the fact that the proposed Phase I, II, and III projects already identified in this plan will be extremely difficult to fund and construct within the 20-year planning horizon.

Russian River Segments (S1, S2)

These two segments from Cloverdale (Sonoma County) northward to La Franchi Rd. south of Hopland traverse very steep and rugged terrain, including a tunnel and several bridges. However, the route is along the Russian River which is popular with fishermen and rafters, is close to population centers, and could attract a significant number of users.

Hopland-Ukiah Segments (S5, S6, S7)

These segments traverse a highly scenic, rolling countryside, including extensive vineyards. Most of the corridor is along US 101 and/or the Russian River. This would be an attractive facility for visitors to the area, and an alternative route for local bicyclists and pedestrians between Hopland and Ukiah.

Ridgewood Summit Area Segments (C4, C5)

These two segments between Willits and Ukiah traverse steep but scenic terrain, and could be used by people traveling between the two main cities along the railroad corridor. A Class I pathway could be very expensive to construct on these segments, and the isolation of the route could cause some property owner and emergency access issues.

Outlet Creek Segments (C9, C10, C11, C12, N1, N2, N3)

These 7 contiguous segments north of Willits follow Outlet Creek, US 101, and SR 162. Much of the terrain is rugged with numerous tunnels and bridges, significant landslides, and environmental constraints. However, these route segments are highly scenic and may be of interest to tourists and local residents. This facility could be constructed as a soft trail on the current tracks if rail service does not return within 20 years.

7.2 Cost Estimates

Cost estimates have been developed for the Phase I, II, and II projects based on available data and unit costs for Class I bike paths and soft (unpaved) trails. The total cost to complete a Class I bike path and soft surface unpaved trail in Mendocino County is estimated to be $71,725,525 (for phases I, II, and III). Engineering cost estimates on the three Phase I projects were developed by project consultants based on the preliminary

engineering designs and available information. Phase II and III planning level costs were based on average range of unit costs from $500,000 per mile (level terrain) to $1,100,000 per mile (steep terrain) for a Class I bike path. The costs include some allocation for new bridges and, north of Willits, rehabilitation of existing bridges and tunnels. A more in-depth analysis of these structures would be required to confirm final cost estimates.

7.2.1 Phase I

Cost estimates for the three Phase I projects range from $755,594 for the Ukiah project, to $1,738,261 for the Willits project and $2,548,670 for the County of Mendocino project. Detailed cost sheets are provided in Chapter 5 and are summarized in Table 7-1.

Table 7-1: Phase I Rail-with-Trail Segments with Summary Cost Estimates

Segment	Starting Point	Elevation	Estimated Length (miles)	Est. Cost
S10	E. Gobbi (Ukiah)	600	0.8	$ 755,594
C1	Brush St (Ukiah)	640	2.1	$ 2,548,670
C7	SR 20 Spur/Hwy 101 (Willits)	1400	0.6	$ 1,738,261
TOTAL			**3.5**	**$ 5,042,525**

7.2.2 Phase II and III

The Phase II and III cost estimates are shown below in **Tables 7-2** through **7-3**. As can be seen, the total cost estimate of these two phases is $67,083,000. As noted earlier, the Phase II and III project costs are based primarily on per mile estimates. While these estimates provide a general understanding of resource needs, they are intended to provide MCOG and other relevant jurisdictions with an "order of magnitude" cost so that projects can be prioritized on an ongoing basis and to provide information for next steps (such as soliciting funding, preliminary and final design, and construction). A planning-level range of potential costs is appropriate given the level of uncertainty in the design at this point in the process. Many factors can affect final construction costs, including:

- Revisions to the facility design as required by local, state and federal agency review and/or in response to public input
- More detailed understanding of physical constraints such as drainage, utilities, right-of-way encroachments, etc.
- Fluctuations in commodity and labor prices
- Selected construction materials

The costs per segment can be used to understand the relative investment needed per segment. Detailed estimates should be completed during engineering and design work for each individual segment.

Table 7-2: Phase II Rail-with-Trail Segments with Cost Estimates

Segment	Starting Point	Elevation	Estimated Length (miles)	Est. Cost
S3	La Franchi Rd	470	1.1	$ 550,000
S4	River Road/SR 175	488	1.8	$ 900,000
S5	North Hopland	495	1.5	$ 750,000
S6	Largo Rd	522	2.6	$ 1,300,000
S7	Henry Station Road	573	3.9	$ 1,950,000
S8	El Roble Rd	562	2.1	$ 1,785,000
S9	Norgard Lane (Ukiah)	590	1.8	$ 900,000
S11	Clara Ave (Ukiah)	615	0.3	$ 650,000
C2	Lake Mendocino Drive	655	3.5	$ 1,750,000
C3	SR 20	680	3.4	$ 1,700,000
C6	Hill Rd (Willits)	1410	1.2	$ 600,000
C8	E. San Francisco Ave (Willits)	1365	0.8	$ 400,000
TOTAL			**24.0**	**$ 13,235,000**

Table 7-3: Phase III Rail-with-Trail Segments with Cost Estimates

Segment	Starting Point	Elevation	Estimated Length (miles)	Est. Cost
S1	McCray Rd (Sonoma County)	316	5.0	$ 5,500,000
S2	Commisky Station Road	423	7.1	$ 6,532,000
C4	Laughlin Way	872	7.3	$ 8,030,000
C5	Ridgewood Summit	1913	6.7	$ 6,566,000
C9	Casteel Lane (Willits)	1310	1.6	$ 800,000
C10	De Camp	1280	1.8	$ 900,000
C11	Reynolds Hwy	1250	5.2	$ 5,720,000
C12	Arnold	1232	3.8	$ 4,180,000
N1	Longvale	1164	5.2	$ 5,720,000
N2	Shimmins Ridge Rd (Farley)	1071	2.3	$ 2,530,000
N3	Eel River	985	6.7	$ 7,370,000
TOTAL			**52.7**	**$ 53,848,000**

Table 7-4: Summary Rail-with-Trail Cost Estimates by Implementation Phase

Implementation Phase	Estimated Total Length (miles)	Est. Cost
Phase I	3.5	$ 5,042,525
Phase II	24.0	$ 13,235,000
Phase III	52.7	$ 53,848,000
TOTAL	**80.2**	**$ 72,125,525**

7.3 Operations and Maintenance

This section discusses potential strategies municipalities can employ to facilitate trail development and management efforts along the NCRA/NWP rail corridor in Mendocino County.

A high level of trail maintenance is critical to the overall success and safety of any trail system. Maintenance includes activities such as pavement stabilization, landscape maintenance, facility upkeep, sign replacement, fencing, mowing, litter removal, painting, and pest control. However, the benefits of a good maintenance program are not limited to the physical and biological features of the trails. Other community benefits include:

- A high standard of maintenance is an effective way to advertise and promote trails as a local and regional recreational resource and destination
- Good maintenance serves as an effective deterrent to vandalism, litter, and encroachments
- Regular maintenance is necessary to preserve positive public relations between adjacent land owners and trail managing agencies
- Good maintenance makes enforcement of regulations on the trails more efficient. The management agencies, local organizations and service groups will take pride in "their" trail and will be more apt to assist in protection of the trail system
- A proactive maintenance policy will help improve safety along the trails

7.3.1 Maintenance Guidelines

A successful maintenance program requires continuity and a high level of citizen involvement. Regular, routine maintenance on a year-round basis will not only improve trail safety, but will also prolong the life of the trails. Maintenance activities required for safe trail operations should always receive top priority.

The Rail-with-Trail system through Mendocino County will consist of a variety of facility types, each with distinct maintenance requirements. The table below summarizes typical maintenance standards for regional trail systems:

Table 7-5: Schedule of Maintenance Standards

Maintenance Task	Suggested Frequency
Major damage response (fallen trees, washouts, flooding)	Immediate in response to need
Site furnishings; replace damaged components	As needed
Graffiti removal	Weekly; as needed
Shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
Trash disposal	Weekly during high use; twice monthly during low use
Litter pick-up	Weekly during high use; twice monthly during low use
Fencing repair	Inspect monthly for holes and damage, repair immediately
Inspections	Seasonally (4 times/year)
Pavement sweeping/blowing	As needed; before high-use season
Culvert inspection and maintenance	Before rainy season; after major storms
Lighting repair	Annually
Shoulder plant trimming (weeds, trees, branches)	Semi-annual (Fall or Spring)
Sign repair/replacement	1-3 years
Pavement markings replacement	1-3 years
Introduced tree and shrub plantings, trimming	1-3 years
Pavement sealing; pothole repair	5-15 years or as needed

Paved Multipurpose Path Maintenance

Cracks, ruts and water damage will need to be repaired periodically. In addition, vegetation control will be necessary on a regular basis. Where drainage problems exist along trails, ditches and drainage structures will need to be kept clear of debris to prevent wash outs. Checks for erosion along the trails should occur immediately after any storm that brings flooding to the local area. The trail surface should be kept free of debris, especially broken glass and other sharp objects, loose gravel, leaves and stray branches. Trail surfaces should be swept periodically to keep them clear of debris. Sweeping should be scheduled based on need. Path segments in forested areas will tend to accumulate surface debris such as leaves and branches at a faster rate than other path segments. These areas should be swept more frequently in order to maintain safe surface conditions on paved multipurpose paths.

Natural Surface Trail Maintenance

In general, trail users need clear views of their surroundings so plantings along trails should be maintained to allow for visibility. Understory vegetation along trail corridors should not be allowed to grow higher than thirty-six inches. Tree selection and placement should be made with a goal of minimizing vegetative litter on the trail. Vertical clearance along the trail should be periodically checked and any overhanging branches over the trail should be pruned to a minimum vertical clearance of ten feet (twelve feet where equestrians are anticipated).

Trail closure signage identifying the dates of closure and impacted trail segment

The trail surface should be inspected and repaired to avoid erosion and tripping hazards. The management agency should correct or improve drainage to retain the integrity of the trail structure, including the removal of trail edges where berms tend to build up and where uphill slopes erode onto the trails. In flat areas, the trail should be constructed to provide a surface with a crown or cross slope. Trails in hillside areas should be maintained to provide an outslope. Similar to paved multipurpose paths, the trail surface should be kept free of debris, loose gravel, leaves, and stray branches.

Temporary Trail Closures

The trail, or sections of the trail, may be closed from time to time for maintenance of the facility. Trail users will need to be managed during these closures. The procedural policies that should be followed prior to the closing of the trail are listed below.

- The management agency should post signs at all trail entrances on the impacted segments to be closed indicating the duration of the closure.
- The management agency should keep the public informed and make every effort to keep the closure period as short as possible. The forty-eight hour notice shall be waived in the case of emergencies.
- The management agency should physically block the trail that is being closed with barriers and post "Trail Closed" signs.
- The management agency should provide "Detour" signs describing alternate routes.

The management agency should not re-open the trail until it has been inspected to ensure that the trail is in usable condition. Where obstructions remain, the management agency should provide warning signs for trail users to slow down or dismount where needed.

Trail Monitoring and Safety

This section discusses security and public safety and trail user education for the Mendocino County Rail-with-Trail system.

Security and Public Safety

Properly designed and managed, the Rail-with-Trail system in Mendocino County will provide a reasonable level of safety and security. Additionally, studies have shown that high use is the most effective method of

enhancing safety and security. While portions of the trail are expected to occur in rural areas, trails in isolated locations throughout California have generally not experienced significant safety problems.

In order to maximize safety and functionality for users, and to minimize liability exposure for the management agencies and other property owners, the trail design shall meet all mandatory and advisory standards as identified by Caltrans in the Highway Design Manual, CA MUTCD and the Americans with Disabilities Act (ADA) where feasible and appropriate.

Trail Patrols and Enforcement

Generally, a trail is expected to be self-enforcing by the general public. For the first three months after opening, the management agencies should patrol the trail on a daily basis. After the first three months, the management agencies should patrol on an intermittent basis. The level of patrols should be based on reported incidents and problems.

Patrols encourage appropriate facility use

Community Involvement with Trail Safety

Creating a safe trail environment goes beyond law enforcement officers and should involve the entire community. The most effective and most visible deterrent to illegal activity on any trail is the presence of legitimate trail users. As a general pattern, introducing legitimate use on the trail right-of-way will discourage illegitimate use. Getting as many "eyes on the corridor" as possible is a key deterrent to undesirable activity on the trail. There are several components to accomplishing effective community involvement in trail safety as outlined below.

Provide Access to the Trail

Wherever feasible, provide public access to the trail. Access points should be inviting and signed to welcome the public onto the trail. This includes access from trailheads, other trails, adjacent communities, at roadway crossings and destination points.

Good Visibility from Adjacent Neighbors

Neighbors adjacent to the trail potentially provide twenty-four hour surveillance of the trail and can become a trail manager's ally. Though some screening and setback of the trail is needed to protect an adjacent neighbor's privacy, complete visual blocking of the trail from neighborhood view should be discouraged.

Programmed Events

Events along the trail will help increase public awareness of the trail, thereby bringing more people to the trail. Efforts should aim at raising public awareness while increasing support for the trail. Events might include a daylong trail clean up or a series of short walks led by long-time residents or local leaders.

Community Projects

Community projects are the strongest means of creating a sense of ownership along the trail and they are perhaps the strongest deterrent to undesirable activity along the trail. Ideas for community projects include volunteer planting events and art projects.

Adopt-a-Trail Program

Businesses and residential communities may be adjacent to sections of Rail-with-Trail in the more urban areas of the county. Neighbors of the trail often see the benefit of involvement in trail development and maintenance. Businesses and developers may view the trail as an integral piece of site planning and thus be willing to take on some level of responsibility for the trail. Creation of an adopt-a-trail program should be explored to capitalize on this opportunity and build civic pride. The adopt-a-trail program could include an adopt-a-creek component to keep the county's creeks clean from garbage.

Trails supporters at a work party event

Trail Safety Education and Outreach

On-going safety education is an important means of reducing liability exposure and encouraging safe behavior. Management agencies need to ensure that warning signs explaining the importance of staying on the authorized trail are prominently displayed and regularly maintained. Additionally, the management agencies could create trail brochures or initiate more formal education programs and engage in trail patrols.

Trail safety education and outreach are important means of reducing liability exposure and encouraging safe behavior

Trail Brochures

Management agencies may consider developing, printing, and distributing brochures. Content may include safety information; maps of existing and planned trails, walkways, bikeways, and other trail related facilities; and information encouraging more local trips by foot, horse or bicycle. Maps should include transit stops to demonstrate how people might walk or bicycle to transit. Brochures should be available at trailheads, City Halls, county offices, visitor centers, libraries, community centers and local bicycle shops.

Trail Patrols for User Outreach

Volunteer or professional trail patrols are also beneficial in improving trail safety. Patrols range from informal monthly clean-up and maintenance crews to daily patrols that provide maps, information and emergency assistance. The primary function of these patrols should be to educate trail users and to provide assistance when necessary. Patrols should also be equipped to alert emergency services quickly if needed. Above all, the presence of a patrol deters crime and improves users' enjoyment of the trail. Trail managers should be creative in using "friends of the trail" groups, local community organizations and law enforcement to maintain and monitor the trail.

Volunteer Trail Stewards Program

In the interest of helping jurisdictions meet challenges with operations and maintenance of current and future trail systems, a volunteer trail stewards' (VTS) program can be established to coordinate regular maintenance activities. Volunteers act as eyes and ears on the ground, aiding jurisdictions in monitoring trail usage and performing light maintenance duties on local trails. The program can train stewards to report back on trail conditions after each walk, provide trail information to other users, help prioritize maintenance needs requiring immediate versus long-term attention, and organize periodic maintenance days to improve the trail environment. The primary goal of a VTS program is to get neighbors and frequent users of trails involved in the daily operations and maintenance of their local trails. A VTS program may serve as an effective tool in the future for enabling the development of new trails by addressing concerns over the ability of an agency to meet the burden of additional operations and maintenance demands and costs.

7.3.2 Managing User Conflicts

Though most multi-use trail experiences are pleasing and enjoyable, serious conflicts between trail users can occur. In these cases, the challenges usually relate to a trail user's style of activity (mode of travel, level of experience, etc.), trip focus, expectations, attitudes toward and perceptions of the environment, and level of tolerance for other activities. Each segment of the Rail-with-Trail in Mendocino County will have unique attributes; however, there are a number of standard design techniques that should be used to minimize potential conflicts. These design techniques include adequate trail width to accommodate multiple users, adequate mileage to allow for a varied experience, clear and consistent signage and establishment of multiple access points.

In order to manage multiple user groups with potential conflicts, the trail manager will need to address user conflicts as they arise, based on patterns of usage and recorded incidents. The manager should also review complaints and accident reports on an on-going basis to determine if there is a pattern of user conflicts that needs to be enforced. The manager should take additional measures to address the challenges of shared use, as necessary, such as:

- **User involvement and outreach.** Build understanding and good will by finding mutually agreeable solutions, and then inform the community (through signs, maps, brochures, Internet, media campaigns, sponsorship of "user swap" activity days, joint trail building days, etc.) to actively and aggressively promote responsible behavior.
- **Uniformed presence on the trail.** This can be in the form of police or ranger patrols, maintenance staff, volunteer trail patrols, work crews, etc.
- **Maintenance program.** An efficient and appropriate maintenance program that addresses signs, sight distances, vertical and lateral clearances and surface maintenance.
- **Regulations and enforcement.** For those not influenced by outreach and education, employees and volunteers must have the authority to enforce safe and courteous behavior, with regulations posted prominently at trailheads and other appropriate locations. The four broad areas of regulations include:

  Acceptable uses and right-of-way (ROW) (who must yield to whom) (ex: Motor vehicles, other than power assisted wheelchairs, are prohibited; Stay on the trail; No loitering; no vandalism; no dumping; Keep to the right except when passing; Yield to on-coming traffic when passing; Bicycles always yield to pedestrians; Give a vocal warning when passing; Pets must always be on short leashes; Travel no

more than two abreast; Alcoholic beverages are not permitted on the trail; Bicyclists and pedestrians yield to maintenance vehicles)

- Speed limits (ex: 15 mph speed limit)
- Hours of use
- Objectives of resource protection (e.g., protect waterways by minimizing erosion and sedimentation, enhance native vegetation by preventing the spread of invasive species and minimizing disturbances to vegetation)

7.3.3 Signage Plan

Uncertainty about direction or appropriate etiquette can create user conflicts or lead people to misuse facilities or resources. However, signage can help define trail use and enhance users' experiences. Signs generally fall within one of four categories depending on their intent: directional, warning, regulatory or informational. Detailed examples are provided in Chapter 6.

Directional

Directional signing may be useful for trail users and motorists alike. For motorists, a sign reading "Bicycle Trail Xing" along with an emblem or logo specific to the trail helps both warn drivers and also promote use of the trail. For trail users, directional signs and street names at crossings help direct people to destinations.

The directional signing should impart a unique theme so trail users know the name of the trail and the destination. The theme can be conveyed in a variety of ways: engraved stone, medallions, bollards, and mile markers. At major crossroads and access points, signage helps users find their way and acknowledge the rules of the trail. They are also useful for interpretive education about local culture and history.

Warning

Warning signs alert trail users of obstructions or potential changes (such as an upcoming roadway or railroad intersection, tunnel, reduced sight lines, etc.) that require forewarning. Crossing features for all roadways and railroad tracks include warning signs for both vehicles and trail users. The type, location, and other criteria are in the California Manual on Uniform Traffic Control Devices (CA MUTCD). Adequate warning distance is based on vehicle travel speeds and line of sight. Signage should be highly visible; catching the attention of motorists accustomed to roadway signs and may require additional alerting devices such as a flashing light or roadway striping.

Regulatory

Regulatory signs should state the rules and regulations associated with trail usage, as well as identify the managing agency, organization or group. The purpose of RWT regulations is to promote user safety and enhance the enjoyment of all users. It is imperative that before any RWT is opened, RWT use regulations are developed and posted at trailheads and key access points. Signing for trail users may include a standard stop sign and pavement marking, sometimes combined with other features such as bollards or a change in trail geometry to slow bicyclists. Care must be taken not to place too many signs at crossings lest they overwhelm the user and lose their impact.

Informational

Informational signs can alert trail users to a variety of information, such as permitted uses, hours and seasons of use, the names of and distances to different points of interest and appropriate trail etiquette. Placement of informational signage is typically at trail entrances and near natural, cultural, or historical resources.

7.3.4 Rail Maintenance

Routine railroad activities are expected to include daily inspections, signal maintenance, tie replacement, rail replacement, drainage culvert cleaning, bridge and trestle inspection and repairs, switching and communication equipment access and maintenance, and crossing equipment servicing and repairs. These activities are typically accomplished by having trucks drive alongside the tracks on dedicated maintenance roads or, in some cases, on the side of the ballast near the rails themselves.

Some sections of the Rail-with-Trail may serve as the NCRA maintenance and emergency access route. The trail may be closed if heavy rail equipment is expected to use the trail, or when any maintenance activities are occurring that could be injurious to the general public. As trail sections are developed, the NCRA and relevant local entities should develop specific maintenance and access agreements.

7.4 Funding Opportunities

Funding for trails comes from all levels of government and non-government organizations. This section presents these funding sources, describing the trail types that are eligible for funding and the funding requirements.

Federal

The primary federal source of surface transportation funding—including bicycle and pedestrian facilities—is the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU). As of February 2012 the availability of federal funding for trails is unknown.

Federal funding is administered through the state (Caltrans and the State Resources Agency) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation, with an emphasis on reducing auto trips and providing inter-modal connections. Many federal programs require a local funding match ranging from ten to twenty percent. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

Transportation Enhancements Program

The Transportation Enhancements (TE) Program is a federal funding source that provides for a variety of "transportation enhancement" projects, including bicycle and pedestrian projects and rail-with-trail projects. Funding amounts vary with each reauthorization of the federal Surface Transportation Program. MCOG received $815,000 in TE programming capacity for the 2012 STIP period (FY 12/13 – FY 16/17).

Recreational Trails Program

The Recreational Trails Program (RTP) provides funds annually 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. The maximum amount of RTP funds allowed for each project is eighty-eight percent of the total project cost. The applicant is responsible for obtaining a match amount that is at least twelve percent of the total project cost. Examples of

funded trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized as well as motorized uses. Funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition of easements or property for trails
- State administrative costs related to this program (limited to seven percent of a State's funds)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's funds)

Rivers, Trails & Conservation Assistance Program

The Rivers, Trails and Conservation Assistance (RTCA) program is a National Parks Service program that provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds, and open space. 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.

Land & Water Conservation Fund

The Land and Water Conservation Fund (LWC) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. LWC is administered by the National Parks Service and the California Department of Parks and Recreation and has been reauthorized until 2015. Cities, counties 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. Property acquired or developed under the program must be retained in perpetuity for public recreational use. The grant process for local agencies is competitive, and forty percent of grants are reserved for Northern California.

Highway Safety Improvement Program

Administered by Caltrans, Highway Safety Improvement Program funds are intended to help achieve a significant reduction in traffic fatalities and serious injuries on all public roads. HSIP requires Caltrans to develop and implement a Strategic Highway Safety Plan (SHSP) that identifies improvements. 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. Previous application deadlines have been in October.

Federal Safe Routes to School Program

Caltrans awards funding through both a Federal and State Safe Routes to School Program. The funds are awarded through a competitive application process for bicycle and pedestrian safety improvements, traffic calming and other safety measures. Projects must be within the school vicinity.

State

State funding for trail projects comes from a variety of sources including federal allocations to state governments and voter-approved bonds. State of California agencies typically charged with administering these funds include Caltrans and the Department of Parks and Recreation.

State Transportation Improvement Program

The State Transportation Improvement Program (STIP) is a five-year capital improvement program of transportation projects. It is a major source of funding for transportation projects in Mendocino County. STIP funds are divided into two programs, the Regional Improvement Program (RIP) and the Interregional Improvement Program (IIP). Regional Transportation Planning Agencies have authority to decide how to program their RIP funds, subject to STIP guidelines, while IIP funds are programmed by the State. Funding amounts vary widely with each two-year STIP cycle; however, there have been STIP cycles when no new funds were received due to the State's fiscal condition. MCOG received nearly $1.3 million for the 2012 STIP period (FY 12/13 – FY 16/17).

Statewide Park & Community Revitalization Program

This program provides a competitive grant for new parks and recreational facilities for the most underserved communities in California. Neighborhood and regional trails are eligible for the grant program. Grants from $100,000 to $5,000,000 are awarded and no local matching funds are required.

Bicycle Transportation Account

Caltrans administers the Bicycle Transportation Account (BTA), state funding for local planning and construction projects that improve the safety and convenience of bicycling for transportation (e.g., bikeways accessing schools, employment centers and transit). Applicants must have an approved Bicycle Transportation Plan and their project must meet Caltrans Highway Design Manual Chapter 1000 and Manual of Uniform Traffic Control Devices standards. The maximum individual grant amount is $1.2 million, and a 10% local match is required.

Environmental Enhancement & Mitigation Program

The Environmental Enhancement & Mitigation Program (EEMP) provides grant opportunities for projects that indirectly mitigate environmental impacts of new transportation facilities. Projects should fall into one of the following three categories: highway landscaping and urban forestry; resource lands projects or roadside recreation facilities. The local Caltrans District must support the project, and the program is administered by the State Resources Agency.

Community-Based Transportation Planning Demonstration Grant Program

This fund, administered by Caltrans, provides funding for innovative planning projects that exemplify livable community concepts including bicycle and pedestrian improvement projects. Eligible applicants include local governments, metropolitan planning organizations and regional transportation planning agencies. A ten percent local match is required and projects must demonstrate a transportation component or objective. There is $3 million available annually statewide.

Internal State Agency Funds

State land management agencies such as Caltrans, State Parks and Department of Fish & Game have their own internal dedicated and competitive funding programs for public access, transportation and trails.

State Safe Routes to School Program

Caltrans awards funding through both a Federal and State Safe Routes to School Program. The funds are awarded through a competitive application process for bicycle and pedestrian safety improvements, traffic calming and other safety measures. Projects must be within the school vicinity.

Local

Local sources for trail implementation come from local and state sales tax revenues and can come from development fees.

Transportation Development Act

Transportation Development Act Article 3 funds are state block grants awarded monthly to local jurisdictions for transit, bicycle, and pedestrian projects in California. Funds for pedestrian projects originate from Local Transportation Funds (LTF), which is derived from a quarter percent of the general state sales tax. LTF are returned to each county based on sales tax revenues. Article 3 of the Transportation Development Act sets aside two percent of LTF for bicycle and pedestrian projects. Eligible trail projects include construction and engineering for capital projects, maintenance of bikeways, and development of comprehensive bicycle or pedestrian facilities plans. These funds may be used to meet local match requirements for federal funding sources.

Development Impact Fees

Fees placed on new development can be used as local matching funds to attract funding from other grant sources. Development impact fees or other project-specific exactions are more readily achieved when bikeway and trail projects are identified in countywide local planning documents and are described as serving a specific geographic area where future development is planned or may occur.

Non-Traditional

Non-traditional sources can be public, private or non-profit entities that are not commonly identified as trail funding sources because their main intent is not to directly construct trails.

Community Development Block Grants

The Community Development Block Grant (CDBG) is a federal program that provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Grantees may use CDBG funds for building and improving public facilities, such as streets, sidewalks, and community recreational facilities, and for planning and administrative expenses.

American Greenways Program

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of greenways. Greenways Program awards may be used to fund unpaved trail development. Eligible applicants include local, regional or statewide non-profit organizations and public agencies. The maximum award is $2,500, but awards typically range from $500 to $1,500.

Bikes Belong Grant

Bikes Belong is an organization sponsored by bicycle manufacturers with the intent to increase bicycle riding in the United States. Bikes Belong provides grant opportunities up to $10,000 with no required match to organizations and agencies seeking to support bicycle facility and advocacy efforts. Eligible projects include paved bicycle paths, rails-to-trails and mountain bike trails.

7.5 Risk Management

This section discusses security and public safety for a RWT through Mendocino County. It also identifies safety and liability issues associated with RWTs and available legal protections for RWT owners and operators.

7.5.1 Security and Public Safety

Properly designed and managed, a RWT through Mendocino County will provide a reasonable level of safety and security. Studies by the Rails-to-Trails Conservancy indicate that crime and other problems on trails are generally the same as the adjoining communities. These studies have also shown that high use is the best and most effective method of enhancing safety and security. While the primarily rural aspect of this project is somewhat unique, trails in isolated locations throughout California have generally not experienced significant safety problems. Any trail safety plan for the RWT should detail proactive safety and security for trespassing and crime prevention, emergency response, security and patrols and fencing.

In order to maximize safety and functionality for users, and to minimize liability exposure for the County of Mendocino, the Cities of Willits and Ukiah, and the NCRA, the trail design will meet all mandatory and advisory standards as identified by the CPUC and in the Highway Design Manual, CA MUTCD, and the ADA.

7.5.2 Safety and Liability Issues

The RWT may experience legal costs in the form of insurance premiums, litigation, and settlements. The County of Mendocino, the Cities of Willits and Ukiah, and the NCRA should develop a Memorandum of Understanding (MOU) to address legal, maintenance, and emergency services costs and protocols. With proper design and management, the RWT should not represent a significant increase in liability costs for the County or Cities of Willits and Ukiah, however, the County and Cities may wish to include a cost factor for this based on the cost of an insurance policy.

Liability is an important area of concern in virtually all RWT projects. In the context of a RWT through Mendocino County, liability refers to the obligation of the trail operator or owner to pay or otherwise compensate a person who is harmed through some fault of the trail operator or railroad. A recent nationwide study of RWTs, Rails-with-Trails: Lessons Learned (2002) provides substantial guidance concerning the limits of liability and ensuring user safety.

A RWT through Mendocino County will be considered a shared-use corridor, and the relationship of the parties in a shared-use corridor will be influenced by which entity holds the dominant property interest. For many shared-use corridors, it is the trail that is the incidental use and must take into consideration the interests of the primary user. This is true of a RWT through Mendocino County, as the primary user of the rail corridor is the NCRA.

For the RWT through Mendocino County, the question of ownership transfer or acquisition of an easement with the NCRA must be addressed. It is assumed that similar instruments will be used in Mendocino County to those that have been developed with the NCRA in Humboldt and Sonoma Counties. To maintain greater control on use and operation of shared physical space, typically a license or lease agreement is negotiated detailing the development and operation of the trail.

It is important to recognize the potential risks associated with human activity near moving trains. Given the possibility of an accident, however remote, it is understandable that primary property owners will want to shield themselves as best as possible from potential lawsuits.

7.5.3 Overview of Concerns

Several liability concerns are associated with the location of a trail adjacent to a railroad corridor. These consist of the concern that:

- The trail users might not be considered trespassers if the NCRA invites and permits trail use within a portion of its right-of-way (ROW), and if that were the case, the concern that the railroad might therefore incur a higher duty of care to trail users than they would otherwise owe to persons trespassing in the corridor.
- Incidents of trespassing might occur with greater frequency due to the proximity of a trail.
- Trail users might be injured by railroad activities, such as an object falling or protruding from a train or from accidental exposure to hazardous materials.
- Injured trail users might sue the NCRA even if the injury is unrelated to railroad operations.

7.5.4 Definitions and Laws

As the owners and occupiers of the ROWs, railroads and property owners have legal duties and responsibilities to persons both on and off their premises. Property owners have a duty to exercise reasonable care on their premises to avoid unreasonable risk of harm to others on adjacent properties. Potentially, railroads may be found liable if the use of their ROW creates an unreasonable risk to persons on an adjacent property such as through derailments or objects falling off the trains.

In most states, the duty of care owed to persons who enter another's property depends on whether the injured person is considered a trespasser, a licensee, or an invitee. A trespasser is a person who enters or remains upon land in possession of another without a privilege to do so, created by the possessor's consent or otherwise. A licensee or invitee is a person on the owner's land with the owner's permission, express or implied. Trespassers are due a lesser duty of care than invitees and licensees.

Unique characteristics of a RWT through Mendocino County that may affect the extent to which liability is potentially enlarged include:

- Ownership of land by multiple parties
- The narrow ROW of the corridor in certain segments
- The number of trail-roadway crossings within the Cities of Willits and Ukiah
- The possible need to cross the railroad tracks in one or more places

7.5.5 Available Legal Protections

Potentially offsetting some or all of a railroad's increased liability attributable to a RWT are the State-enacted Recreational Use Statutes (RUSs). All 50 states have RUSs, which provide protection to landowners who allow the public to use their land for recreational purposes. A person injured on land made available to the public for recreational use must prove that the landowner deliberately intended to harm him or her. States created RUSs to encourage landowners to make their land available for public recreation by limiting their liability provided they do not charge a fee. Railroad companies and institutions that agree to a RWT on their

property would have limited liability due to these statutes. In California, the following laws and statutes apply:

Table 7-6: California Applicable Laws and Statutes

Recreational Use Statute (RUS)	Trail, Rails-to-Trails Program, Recreational Trails System, or Similar Statute	Government Tort Liability Act	Railroad Fencing Laws
Cal.Civ.Code § 846 (West 2000.)	Cal.Pub.Res.Code § 5070 et seq. (Deering 2000.) Recreational Trails Act Limits liability for adjacent property owners	Cal.Gov't Code §810-996.6 et seq. (West 2000.)	Cal. Pub. Util. Code § 7626 et seq. (West 2000.) RR liable for injury to live-stock, domestic animals injured due to unfenced right-of-way

The California Recreational Use Statute (Civil Code Section 846) covers: public use of land for recreational, sightseeing, and other purposes; landowner's liability limited; and exceptions. The Statute encourages landowners to open up land for recreational use by the public and provides private landowners with immunity from liability for injuries sustained by persons using their property for recreational use. This protection extends not only to landowners but to others with an 'interest in the land' such as holders of leasehold estates.

As specified in the Statute, a recreational purpose includes such activities as fishing, hunting, camping, water sports, hiking, spelunking, sport parachuting, riding, including animal riding, snowmobiling, and all other types of vehicular riding, rock collecting, sightseeing, picnicking, nature study, nature contacting, recreational gardening, gleaning, hang gliding, winter sports, and viewing or enjoying historical, archaeological, scenic, natural, or scientific sites. Although the statute lists recreational uses to which it extends, the California courts have found that the list is not exhaustive and protection extends to other recreational activities not specifically mentioned by the statute. For statutory protection to apply, the injured party must have entered the land for recreational purposes. If the party who was injured entered the land for purposes other than recreational, the statute's protection will not apply.

A landowner who gives permission to another to enter or use his or her land for recreational purposes does not thereby extend any assurance that the premises are safe for such purpose nor constitute the person to whom permission has been granted the legal status of an invitee or licensee to whom the landowner owes a duty of care. The statute specifically carves out the following three circumstances in which statutory immunity will not apply: where the landowner has committed a willful or malicious failure to warn or guard against a peril, granted permission in exchange for consideration, or extended an express invitation to the injured party.

Finally, the statute allows landowners or others with an interest in real property to present a claim for reasonable attorney's fees (within limits) in certain circumstances. Landowners who have given permission to the public to enter upon or use their land pursuant to an agreement with a public or nonprofit agency for purposes of recreational trail use may present a claim for reasonable attorney's fees when a civil action is brought against them by a person who is alleged to have suffered an injury or sustained damage on their land.

7.5.6 Liability Exposure Reduction Options

Besides the federally mandated RUSs, there are additional available legal protections that reduce risk for adjacent property owners on RWT projects. Table 7-7 lists the options for additional measures.

Table 7-7: Liability Protections

Options	Intent
Trail or rail-with-trail state statute	Create state legislation that limits liability
Trespassing legislation	Create state legislation that specifically prohibits trail users from going onto railroad property outside of the trail
Insurance	Purchase or provide liability insurance in an amount sufficient to cover foreseeable liability costs
Transfer of ownership	The City or County enjoys additional limitations of liability for injuries occurring on owned property

7.5.7 Property Control

As noted earlier, the relationship of the parties in a shared-use corridor will be driven to a great extent by which entity holds the dominant property interest. The type of property control influences both the ease of implementing the project and the liability burden. There are three types of property arrangements: acquisitions, easements, and licenses.

7.5.8 Acquisitions

To accommodate the concerns of property owners with respect to the location of a trail in an active ROW, the managing jurisdiction could look to own the rail corridor itself. This internalizes the liability and coordination efforts. The City or County is treated differently from either NCRA or other property owners due to the unique status as a sovereign entity. This option transfers basic liability to the City or County and would give the jurisdiction the authority to locate the trail in the corridor. This was a successful strategy for the City of Portland's Springwater on the Willamette Trail, for which the regional government, Metro, purchased the railroad corridor from a utility. Trail development agencies interested in pursuing a RWT should acquire the affected railroad property for public ownership whenever feasible. While this option is likely not the best option for much of the primary rail-with -trail corridor, acquisitions should be considered among the alternatives for connecting trails and in key areas where other liability concerns prevent key connections.

7.5.9 Easements

In most instances, full ownership acquisition is not necessary for trail development, and, in many cases, is not an option. Easements, which come in many forms, typically are acquired when the landowner is willing to forego use of the property and development rights (or, if zoning permits, transfer the development rights) for an extended period. The landowner retains title to the land while relinquishing most of the day-to-day management of the property. The trail manager gets sufficient control for trail purposes. The easement is attached to the property title, so the easement survives property transfer. **Table 7-8** provides an overview of easement agreement issues.

Table 7-8: Easement Agreement

A Model Easement Agreement Should:
Guarantee exclusive use or uses compatible with rail-with-trail's activities.
Be granted in perpetuity.
Include air rights if there is any possible need for a structure.
Broadly define purpose of the easement and identify all conceivable activities, uses, invitees, and vehicular types allowed to avoid any need to renegotiate with fee interest owner in future.
State that all structures and fixtures installed as part of a trail are property of grantee.
Include subsurface rights for use by utility franchises.

It is also understood that the major landowner – in this case, the NCRA – would want an easement agreement to address issues on their side. Through cooperative negotiation, the following issues should be addressed in an easement agreement:

- Access needs related to maintenance, etc.
- Trail management plan.
- Future improvements or modifications to the trail.

7.5.10 Licenses

A license is usually a fixed-term agreement that provides limited rights to the licensee for use of the property. Typically, these are employed in situations when the property cannot be sold (e.g. a publicly-owned, active electrical utility corridor), or the owner wants to retain use of and everyday control over the property. The trail management authority obtains permission to build and operate a trail. But it will have little control over the property, and may be subject to some stringent requirements that complicate trail development and operation. Table 7-9 provides an example of model license agreement language.

Table 7-9: License Agreement

A Model License Agreement Should:
Provide an acceptable term length with an option to renew.
Identify all conceivable activities, uses, invitees and vehicular types.
Provide clarity on maintenance responsibilities.
Specify limits on other uses of licensed property.

As with easement agreements, property owners would want a license agreement to address issues on their side. Through cooperative negotiation, the following issues should be addressed in a license agreement:

- Access needs related to maintenance, etc.
- Trail management plan.

- Future improvements or modifications to the trail.

7.5.11 Risk Reduction

Visible signage, the use of physical barriers (such as fences, walls, vegetation, grade differences, and ditches) and good design are prudent liability protection strategies. Trail users should be warned at the trailhead and at any other entrances to stay off the railroad tracks, particularly if there are no physical barriers between the trail and the rail corridor at that location. If the RWT is clearly designed to indicate that the railroad corridor is separate from the trail, trail users injured while within the railroad corridor or on the railroad tracks should be considered trespassers to which no special duty of care is owed. A well-designed RWT can actually reduce trespassing by channelizing pedestrian crossings to safe locations or by providing separation or security. A well-designed RWT should have the effect of reducing both trespassing, as well as risk of being held responsible for injuries sustained by trespassers.

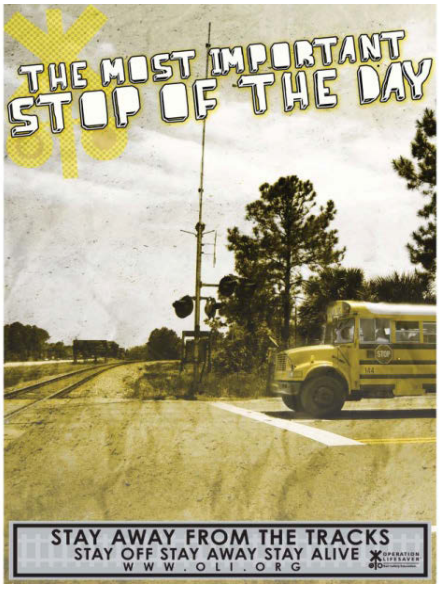
7.5.12 Railroad Safety Education and Outreach

In addition to physical barriers and trail design, railroad safety education and outreach is an important means of reducing liability exposure and encouraging safe behavior along RWT facilities. Many railroad companies participate in some kind of active outreach, including posting signs at trailheads and crossings, attending community events, regular monitoring of tracks, and penalties for trespassers. The City or County could work with the local school district to run education programs on RWT safety. Education programs should target elementary and teen youth. In addition to locally-run programs, most cities also support and participate in Operation Lifesaver.

Operation Lifesaver is a nationally recognized nonprofit organization dedicated to educating the public about the dangers associated with rail grade crossings and railroad rights-of-way. The program works to end collisions, deaths, and injuries at rail grade intersections and on railroad property. It is sponsored cooperatively by a wide variety of partners, including Federal, State, and local government agencies, highway safety and transportation organizations, and the railroad companies.

Trail managers are encouraged to contact their State's Operation Lifesaver Coordinator to arrange for presentations about pedestrian safety and railroad trespass prevention for trail clubs and other trail users[4].

Operation Lifesaver can be an extremely valuable resource for both RWT managers and railroad companies. Its award-winning safety materials include videos and brochures about the dangers of rail trespassing, as well as information for pedestrian and bicycle safety at crossings. As part of a new RWT, railroad companies should encourage the State Operation Lifesaver coordinator to



Operation Lifesaver uses posters like this one to educate the public on railroad safety and trespass prevention

[4] See Operation Lifesaver's website: www.oli.org.

arrange safety presentations and other education events for trail users; identify where safety information materials might be made available on a regular basis (e.g., at a trailhead information kiosk); consider whether local bicycle sales or rental shops will distribute safety information; and consider other means for encouraging safe use of approved trails.

7.5.13 Insurance

To the extent practical and reasonable, trail management organizations should purchase or provide liability insurance in an amount sufficient to cover foreseeable liability costs and pay the costs for railroad company insurance for defense of claims. The managing jurisdiction should provide liability insurance. A policy amount of $10 million is consistent with insurance policies carried by other cities and counties managing similar facilities. Class I railroads often require $5 million to $10 million insurance policies for other activities permitted on their rights-of-way.