

ANNIE & MARY RAIL-TRAIL FEASIBILITY STUDY

AUGUST 2003



Prepared by the
Natural Resources Services Division of
Redwood Community Action Agency
with
Spencer Engineering & Construction Management, Inc.
Alta Planning + Design
Rails-to-Trails Conservancy

for the
California Coastal Conservancy



ACKNOWLEDGEMENTS

PROJECT TEAM

- Spencer Engineering & Construction Management, Inc. of McKinleyville, California
- Alta Planning + Design of San Rafael, California
- Rails-To-Trails Conservancy California Office
- Planwest Partners of Arcata, California
- Dr. Michael Smith of Eureka, California
- Alex Kassatkin of Arcata, California

ORGANIZATIONS, BUSINESSES AND INDIVIDUALS

The following agencies, organizations, businesses and individuals contributed their time and effort to meetings, research assistance, and/or input to this project.

- Adjacent landowners, public participants and survey respondents
- North Coast Railroad Authority: Boardmember Leo Sears and staff
- Charles Montange, Attorney
- Frank Lovio and Dan Hauser
- Caltrans District 1 Planning Staff
- Cities of Arcata and Blue Lake: staff and councilmembers
- Humboldt County Departments of Public Works and Community Development, and Supervisor John Woolley
- U.S. Congressman Mike Thompson' s Eureka office staff
- Humboldt Bay Municipal Water District: Director and staff
- Blue Lake Rancheria: Director and staff
- Northern Counties Logging Interpretive Association
- Humboldt State University Natural Resources Planning Classes of Michael Smith
- Humboldt County Historical Society, Blue Lake Museum, Arcata Eye and McKinleyville Press
- City of Modesto staff
- Friends of the Annie & Mary Rail-Trail

SPECIAL THANKS

- State Senator Wesley Chesbro and his Eureka office staff
- State Coastal Conservancy Board and staff, and the California voters

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND SUMMARY

A. PROJECT AREA	3
B. PROJECT PURPOSE AND GOALS	3
B1. Project Purpose	3
B2. Project Goals	3
C. TERMINOLOGY	4
D. SUMMARY OF FEASIBILITY ISSUES AND ACTION ITEMS	5

CHAPTER 2. SETTING

A. THE ANNIE & MARY CORRIDOR	7
A1. North Coast Railroad Authority	7
A2. Physical State of the Corridor	12
B. NATURAL RESOURCES	14
B1. Mad River and Tributaries	14
B2. Wildlife and Vegetation	15
C. CULTURAL RESOURCES	16
C1. Native American History	16
C2. European Settlement	17
C3. History of the A&MR Railroad	17
D. COMMUNITIES	19
D1. County of Humboldt	19
D2. City of Arcata	19
D3. City of Blue Lake	20
D4. Community of Glendale	21
D5. Community of Korbelt	21
D6. Blue Lake Rancheria	21
E. LAND USE AND PUBLIC ACCESS	21
E1. Corridor Land Uses	22
E2. Humboldt Bay Municipal Water District	22
E3. Recreation	22
E4. Other Points and Events of Interest	24

F. ACTION ITEMS	25
------------------------	-----------

CHAPTER 3. PLANNING FRAMEWORK

A. HISTORY OF A&M RAIL-TRAIL PLANNING	26
--	-----------

B. PLANNING AND POLICY CONTEXT	27
---------------------------------------	-----------

B1. Summary of Local General Plans and Interest	27
---	----

B2. Local Trail, Bicycle, and Transportation Plans	29
--	----

C. OTHER RELEVANT JURISDICTIONS AND THEIR PLANS	30
--	-----------

C1. North Coast Railroad Authority	30
------------------------------------	----

C2. Humboldt Bay Municipal Water District	31
---	----

C3. Blue Lake Rancheria	32
-------------------------	----

C4. California Department of Transportation (Caltrans)	33
--	----

D. ACTION ITEMS	33
------------------------	-----------

CHAPTER 4. COMMUNITY INVOLVEMENT

A. SCOPE OF COMMUNITY INVOLVEMENT	34
--	-----------

B. PUBLIC OUTREACH	34
---------------------------	-----------

B1. Public Meetings	35
---------------------	----

B2. Public Survey	39
-------------------	----

C. AGENCY AND ORGANIZATION OUTREACH	42
--	-----------

D. ACTION ITEMS	45
------------------------	-----------

CHAPTER 5. TRAIL DESIGN

A. RECOMMENDED TRAIL STANDARDS	46
---------------------------------------	-----------

A1. Width and Surface	47
-----------------------	----

A2. Structural Section	49
------------------------	----

A3. Design Speed	51
------------------	----

A4. Drainage	51
A5. Intersections and Crossings	52
A6. NCRA Rail-Trail Planning & Design Guidelines	52
B. RECOMMENDED STRUCTURAL TREATMENTS	52
B1. Trestle Treatments	52
B2. Bridge Treatments	54
C. ACCESS CONTROL	56
C1. Separation	56
C2. Fencing	57
C3. Bollards	58
D. TRAIL SUPPORT FACILITIES	59
D1. Utilities and Lighting	59
D2. Signing and Marking	59
D3. Trail Entry Features	61
D4. Landscaping Features	62
D5. Trail Furniture	63
E. SPECIFIC DESIGN TREATMENTS	63
E1. Specific Trailhead Recommendations	64
E2. Road Crossing Design Background	64
E3. At-Grade Crossing Features	65
E4. Typical Crossing Prototypes	66
E5. Conceptual Crossing Diagrams	68
F. ACTION ITEMS	69

CHAPTER 6. ALIGNMENT ALTERNATIVES

A. ARCATA REACH: ARCATA CITY LIMIT TO WATER DISTRICT PARK I	72
A1. Key Characteristics	72
A2. Key Connections	74
A3. Constraints	74
A4. Alignment Alternatives	75
A5. Recommended Trail Alignment	76
A6. Recommended Trail Support Facilities	76

B. PARKS REACH I: WATER DISTRICT PARK I TO WARREN CREEK ROAD	77
<hr/>	
B1. Key Characteristics	77
B2. Key Connections	79
B3. Constraints	79
B4. Alignment Alternatives	79
B5. Recommended Trail Alignment	82
B6. Recommended Trail Support Facilities	83
C. PARKS REACH II: WARREN CREEK ROAD TO WATER DISTRICT PARK 4	83
<hr/>	
C1. Key Characteristics	83
C2. Key Connections	85
C3. Constraints	85
C4. Alignment Alternatives	85
C5. Recommended Trail Alignment	88
C6. Recommended Trail Support Facilities	88
D. BRIDGE REACH: WATER DISTRICT PARK 4 TO GLENDALE	88
<hr/>	
D1. Key Characteristics	88
D2. Key Connections	91
D3. Constraints	91
D4. Alignment Alternatives	91
D5. Recommended Trail Alignment	91
D6. Recommended Trail Support Facilities	92
E. GLENDALE REACH: DOWNTOWN GLENDALE TO CHARTIN ROAD	92
<hr/>	
E1. Key Characteristics	92
E2. Key Connections	93
E3. Constraints	93
E4. Alignment Alternatives	93
E5. Recommended Trail Alignment	98
E6. Recommended Trail Support Facilities	99
F. BLUE LAKE WEST REACH: CHARTIN ROAD TO HATCHERY ROAD	99
<hr/>	
F1. Key Characteristics	101
F2. Key Connections	101
F3. Constraints	101
F4. Recommended Trail Alignment	101
F5. Recommended Trail Support Facilities	102

G. BLUE LAKE EAST REACH: HATCHERY ROAD TO MAD RIVER LEVEE	102
G1. Key Characteristics	104
G2. Key Connections	104
G3. Constraints	104
G4. Alignment Alternatives	105
G5. Recommended Trail Alignment	107
G6. Recommended Trail Support Facilities	107
H. KORBEL REACH: MAD RIVER LEVEE KORBEL	108
H1. Key Characteristics	108
H2. Key Connections	108
H3. Constraints	108
H4. Alignment Alternatives	110
H5. Recommended Trail Alignment	110
H6. Recommended Trail Support Facilities	110
J. SUMMARY OF ALIGNMENT RECOMMENDATIONS	111

CHAPTER 7. MANAGEMENT AND MAINTENANCE

A. OPERATING AN A&M RAIL-TRAIL: GENERAL PRINCIPLES	112
A1. NCRA Transfer of Responsibility to Trail Management	112
A2. Coordination of Operating Responsibilities and Procedures	112
A3. Developing Trail Use Regulations	113
A4. Working with Adjacent Property Owners	114
B. TRAIL MANAGEMENT AGENCY	117
B1. Jurisdictional Analysis	117
B2. Potential Trail Management Agencies	117
B3. Management Agency Research	118
B4. Trail Management Options	121
C. MANAGEMENT AGENCY REQUIREMENTS	124
C1. Responsibilities	124
C2. Liability and the Trail Management Entity	125
D. EASEMENTS AND LICENSES	126
D1. Easements	126
D2. Licenses	126

E. TRAIL MAINTENANCE PLAN	128
E1. Maintenance Needs	128
E2. Maintenance Trust Fund	129
E3. Reporting Mechanisms	129
F. ACTION ITEMS	130

CHAPTER 8. COSTS AND FUNDING

A. CONSTRUCTION COSTS	131
B. TRESTLE AND BRIDGE COSTS	132
C. TRAIL COSTS	133
C1. Cost Estimates By Reach	133
C2. Support Facilities	135
D. MAINTENANCE COSTS	136
E. PROJECT FUNDING	136
E1. Environmental Enhancement and Mitigation Program	136
E2. Recreational Trails Program	137
E3. Regional Transportation Improvement Program	137
E4. TDA Article III	137
E5. Safe Routes to School (AB 1475)	137
E6. Habitat Conservation Fund	137
E7. Land and Water Conservation Fund (LWCF)	138
E8. Air Quality Management District (AB 2766)	138
E9. Historic Resource Preservation Funds	138
E10. State Public Access Program	139
E11. Bicycle Transportation Account	139
E12. State Coastal Conservancy	139
E13. TEA-21	140
E14. Humboldt Area Foundation	140
E15. California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002	140
E16. Community-Based Transportation Planning & Environmental Justice Grant Programs	
E17. Grassroots Fundraising	141

F. MATCHING CONTRIBUTIONS **141**

G. ACTION ITEMS **141**

CHAPTER 9. CONCLUSION**A. IMPLEMENTATION STRATEGY** **143**

A1. Seeking Funds 143

A2. Railbanking 144

A3. Establishment of Management Structure 144

A4. CEQA 144

A5. Priority Reaches 146

B. CONCLUSION **146**

LIST OF APPENDICES, TABLES AND FIGURES

Appendix Title

- A.** Arcata & Mad River Railroad Rehabilitation Analysis
- B.** Relevant Species of Concern
- C.** Annie & Mary Rail-Trail and Trail Development Issues Survey & Report
- D.** Engineering Evaluation Report
 - 1. Trestle Evaluation Worksheets
 - 2. Corridor Description and Drainage Recommendations
 - 3. Typical Deck and Guardrail Details
 - 4. Engineer's Estimate for Structures Cost
 - 5. Engineer's Estimate for Reach Cost (A&M Corridor)
 - 6. Engineer's Estimate for Alternative Routes Costs
- E.** Conceptual Road Crossing Diagrams
- F.** Standard Bicycle and Trail Sign Sizes
- G.** Annie & Mary Rail-Trail Alternatives Assessment
- H.** Draft NCRA Rail-Trail Planning and Design Guidelines
- I.** Sample Agreements
- J.** A&M Management Research Questionnaire
- K.** NCRA Property Management Policy
- L.** Private Fundraising for Trails Overview
- M.** List of Preparers and Contacts

Table	Title	Page
Table 1.1	Comparison of Alignment Recommendations and Costs from Chapter 6	6
Table 2.1	Property dedications to the Arcata & Mad River Railroad, September 1881 to June 1883.	12
Table 5.1	Basic Crossing Prototypes	66
Table 5.2	Crossings at Existing Intersections	67
Table 6.1	‘Alternative assessment criteria’ scores for the Arcata Reach.	76
Table 6.2	‘Alternative assessment criteria’ scores for Parks Reach I	83
Table 6.3	‘Alternative assessment criteria’ scores for Parks Reach II	88
Table 6.4	‘Alternative assessment criteria’ scores for the Glendale Reach	99
Table 6.5	‘Alternative assessment criteria’ scores for the Blue Lake East Reach	107
Table 6.6	Comparison of Alignment Recommendations	111
Table 7.1	Major Features of License Agreements	127
Table 7.2	Estimated Annual Maintenance Cost for 7 miles of Trail	128
Table 8.1	Summary of Cost Estimate for Trestle/Bridge Restoration	132
Table 8.2	Summary Cost Estimate for A&M Rail-Trail Development	135

Figure	Name	Page
Figure 1.1	Project Vicinity, Annie & Mary Rail Corridor, Humboldt County, California	2
Figure 2.1	Annie & Mary Rail Corridor, Humboldt County, California	13
Figure 4.1	Survey responses regarding support for development of a trail along the Annie & Mary Corridor.	40
Figure 4.2	Survey responses regarding whether a trail along the Annie & Mary corridor would increase quality of life.	40
Figure 4.3	Survey responses regarding how important trails are to the quality of life in the region.	41
Figure 4.4	Survey responses: support for paying a higher rate of sales tax to help fund trail development and maintenance.	33
Figure 5.1	‘Shared-use’, or multiple-use paths are part of the state’s transportation system.	47
Figure 5.2	A multi-use trail provides enough width for different trail users to interact safely.	47

Figure 5.3	Structural trail cross-section options for level and sloped ground.	50
Figure 5.4	Standard trestle decking cross-section.	54
Figure 5.5	Potential fencing designs for various applications along the trail corridor.	57
Figure 5.6	Two (of many) different bollard design options.	58
Figure 5.7	Example of a road crossing diagram presented in Appendix E .	68
Figure 6.1	Route Alternatives and Planning Reaches Overview	72
Figure 6.2	Arcata Reach: Arcata City Limit to Water District Park 1	73
Figure 6.3	Parks Reach I: HBMWD Park 1 to Warren Creek Road	78
Figure 6.4	Parks Reach II: Warren Creek to Water District Park 4	84
Figure 6.5	Bridge Reach: Water Park to Glendale	89
Figure 6.6	Glendale Reach: Downtown Glendale to Chartin	92
Figure 6.7	Blue Lake West Reach: Chartin Road to Hatchery Road	100
Figure 6.8	Blue Lake East Reach: Hatchery Road to Mad River Levee	103
Figure 6.9	Korbel Reach: Mad River Levee to Korbel	109

During the last half of the 20th century, political and economic changes have led to a decline in rail use for both commerce and travel in the United States. Throughout the country, much of the rail infrastructure that once served as critical transportation corridors has been and is being abandoned. Investment to create this extensive rail system was immense, and in an effort to preserve the public investment and historical value of these rail corridors, a movement has developed in the past several decades to preserve or convert abandoned rail corridors to trails for public access and transportation. Growing interest in outdoor recreation and non-motorized transportation has spurred increasing development and use of rail-trails nationwide. In California there are 241 miles of rail-trails. Across the U.S., over 30,000 miles of railroad corridor have been or are being converted to trail (see the Rails-to-Trails Conservancy website at www.railstotrails.org/news/trailfacts/default.asp). These trails are a growing network, serving people of all ages on foot, bike, horseback and wheelchair.

Multiple-use trails can be used for recreation as well as for human-scale transportation not offered by roadways. Trails, a significant aspect of our historic infrastructure, are being revisited as an invaluable facet of contemporary North American communities (Rails-to-Trails Conservancy, 2000).

The Arcata & Mad River rail corridor is located in Humboldt County – 3,500 square miles of rugged coastline, forested mountains, river valleys, coastal terraces, and agricultural lands located in northwestern California. The main population center of the county, located around Humboldt Bay, is approximately 280 miles north of San Francisco and 80 miles south of the Oregon border.

The Arcata & Mad River line (affectionately known as the Annie & Mary) is the end of the Northwestern Pacific (NWP) railroad that extends up the north coast of California from the San Francisco Bay area to and just beyond Humboldt Bay. The Annie & Mary corridor departs the main NWP line in the City of Arcata, travels northeast through the community of Glendale and the City of Blue Lake and onto its terminus in the milltown of Korb (Figure 1.1). The project area, basically from the Arcata city limits to the terminus of the line, is almost seven miles in length. Trains have not run on the Annie & Mary since 1992, nor does it appear that rail service will be possible in the near future.


Owned and managed by the North Coasts Railroad Authority (NCRA), the A&M is one of the few publicly-owned rail corridors in the U.S. Since 1997, a diverse group of citizens, local businesses and elected officials from the surrounding communities of Blue Lake, Arcata, McKinleyville and Eureka has worked to advocate development of a trail on the Annie & Mary corridor. The Natural Resources Services (NRS) Division of Redwood Community Action Agency completed a preliminary assessment of the trail concept in December of 2000. This *Feasibility Study*, funded by the State Coastal Conservancy, is the next phase of the research and planning process.



The historic rail station in Blue Lake has since been converted into a museum.

Figure 1.1, Project Vicinity Map

(back-to-back page, b&w, 8.5x11)



A. Project Area

The focus of this study is on a portion of the Arcata & Mad River rail corridor between its junction with West End Road in Arcata's Aldergrove Industrial Park and the end of the line in Korbel (Figure 1.1). Though the A&M corridor continues southeast through the City of Arcata, the NCRA has indicated there is greater potential for restoring service from the main line, through the city, to the Aldergrove Industrial Park – consequently, the portion of the line south of the Industrial Park (and West End Road) is not considered in this study.

B. Project Purpose and Goals

B1. Project Purpose

The purpose of this *Feasibility Study* is to research and document the opportunities and constraints related to development of a multiple-use trail on the Arcata & Mad River rail corridor. Trail development options have been assessed with sensitive consideration of landowner interests, compatibility of adjacent land uses, and possible management options. Recommendations herein subsequently factor in safety, environmental and cultural resources, long-term trail maintenance, and the likelihood of securing funding for implementation.

It is intended that this document provide the NCRA, elected officials, potential trail managers, adjacent landowners and the public at large with information they can use in the next steps toward the Annie & Mary's future.

B2. Project Goals

This *Feasibility Study* was conducted with the following goals in mind:

- Explore realistic methods of keeping the historic Annie & Mary corridor intact.
- Identify feasible options for development of a high-quality, multiple-use trail that would enable future public access for non-motorized recreation and transportation on the A&M corridor.
- Determine possibilities for the routing, design, funding, construction and management of a trail along (and/or nearby) the A&M right-of-way, linking the communities of Arcata, Glendale, Blue Lake and Korbel.



Presented in this study are options for preventing the deterioration or loss of the historic Annie & Mary corridor, and keeping it intact as a multiple-use trail.

C. Terminology

A&M – Arcata & Mad River, or Annie & Mary, railroad corridor.

Alignment – trail route, particularly where it would be located off of the rail corridor.

Alternative Route – For the purpose of this study, this term describes potential routes outside the A&M right-of-way.

Alta – Alta Planning + Design, trail design consultants (see [Appendix M](#)).

Corridor – The linear parcel owned and/or managed by the North Coast Railroad Authority between Arcata and Korbel.

HBMWD – Humboldt Bay Municipal Water District.

Multiple-Use Trail – A route no less than eight feet wide, with a hard surface, dedicated to non-motorized travel, including: cyclists, walkers, wheelchair users, strollers, equestrians, and/or in-line skaters, depending on the hardness of the surface, intended uses, and so forth.

MUTCD – Manual of Uniform Traffic Control Devices.

NCRA – The North Coast Railroad Authority, the public entity which owns and manages the Arcata & Mad River corridor.

NRS – The Natural Resources Services Division of Redwood Community Action Agency (RCAA), coordinators of this project (see [Appendix M](#)).

Rail-Trail – For the purpose of this study, this term describes the proposed trail on (or near) the railroad corridor. This trail would be an ‘interim’ trail, designed to preserve the ability to restore rail service in the future.

Rail-with-Trail – A trail adjacent to an active or inactive rail-line.

Rail-to-Trail – A rail corridor is converted to a trail temporarily or permanently. The trail is on the former rail-line corridor.

Railbanking – The federal railbanking statute is a means by which an inactive rail line can legally be preserved for future rail use. Railbanking preserves all forms of ownership for the railroad including easements.

ROW – Right-of-way, either by fee title ownership or easement.

RTC – Rails-to-Trails Conservancy, policy and rail-trail clearinghouse consultants to this project (see [Appendix M](#)).

Spencer Engineering – Spencer Engineering & Construction Management, Inc., engineering consultants to this project (see [Appendix M](#)).

SR – Abbreviation for State Route, a more inclusive term than ‘highway’ or ‘freeway’, which are held to specific standards.

D. Summary of Feasibility Issues and Action Items

The Arcata & Mad River Railroad corridor has a significant place in U.S. history. The A&MRRR and its predecessor, the 'Union Plank Walk, Rail Track, and Wharf Company Railroad', was, if not the very first, **one of the first operational railroads** in the western United States. This fact should be confirmed and should serve as a significant motivator for preservation of the corridor.

Trail development on some portions of the A&M corridor would **conflict with adjacent land uses**, and other potential trail routes have been researched and recommended in these cases (Table 1.1).

Considerable investment in the corridor will be necessary to develop a multiple-use trail (Table 1.1). Primary investments will be renovation and retrofitting of the trestle and bridge structures to facilitate trail use. In general, however, multi-use trail development cost estimates (with standards similar to road construction) are in accordance to a typical range of \$250,000 to \$1 million per mile.

A summary of highlights and 'action items' is provided at the end of every chapter in this document. Highlights of those action items are as follows:

- **Railbank the A&M Corridor.** The A&M corridor should be railbanked – a federal statute allows preservation of rail corridors for future rail use while allowing interim use and maintenance (see Chapter 2) – immediately to preserve the NCRA's ability to use it in the future, whether for rail or for trail. The **NCRA should receive funding support** for this effort, as it will ensure the state's investment in the corridor is maintained. It is unlikely that rail service will be restored on the corridor in the near future.
- **Blue Lake Is Ready.** The City of Blue Lake is interested in developing a trail on the portion of the A&M corridor within city limits and assuming management of it as a trail – even in light of the fact that they have no resources to do so. First, however, funding and permits must be secured (Chapters 8 and 9). Further research is necessary to determine if one segment of trail can be permitted before others (Chapter 9).
- **Plans Should Include A&M Rail-Trail.** None of the other local governments that could potentially serve as trail management agencies are ready or yet willing to take on management of a trail on the corridor – however public sentiment appears to be in strong support of using the corridor as a trail. Local government plan updates should reflect this level of support, and the public should continue to make its interest known if, in the current climate of local government funding challenges, trail development on the corridor is still considered an important endeavor.
- **Design Trail To Accommodate Neighbors.** Many landowners adjacent to the corridor are concerned about how trail design, function and management will impact their privacy, safety, and quality of life. Trail planning and designs should very carefully consider their interests.
- **Develop A Regional Parks and Trails District.** A plan for a practical mechanism of funding trail maintenance will likely be necessary to help local governments consider taking on development and maintenance of a trail on the A&M corridor. Additional research needs to confirm the indication in this study that it is possible additional sales tax would be supported for this purpose. A related consideration should be given to the potential for creation of a Regional Parks and Trails District. In particular, the Humboldt Bay Municipal Water District needs financial help maintaining the Mad River Bridge – which supports a water transmission line – in the short term.
- **Funds Are Available Now.** A significant amount of recreational trail, historic preservation, and non-motorized transportation funds are available through numerous state funding programs as a result of voters' approval of the 'California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002' – otherwise known as Proposition 40. In this time of extreme budget shortfalls, however, this kind of funding is not expected to last beyond the next two or three years. In order to best utilize these funds, trail development action should be taken soon. Local funds should be raised to address pre-implementation funding needs.

Table 1.1
Comparison of Alignment Recommendations and Costs (priorities in italics).

Reach	Preferred Alignment	Feasibility Issues	Estimated Cost (1,000)*
<i>Arcata</i>	<i>Alternative B: original corridor, with 600 feet of trail slightly below grade to improve privacy for adjacent landowners.</i>	<i>More costly than at-grade trail, however the trail will be a better ‘neighbor’ with this design.</i>	\$825
Parks I	Alternative A: original corridor, but with as many accommodations for the adjacent landowner in question as possible.	Shared use and privacy design issues will need to be addressed individually with adjacent landowners to ensure the trail is a good neighbor.	\$1,600
Parks II	Alternative A: original corridor and trestles.	Retrofit of the trestles, not to mention maintenance of them, introduces a substantial cost increase to trail development, however their historic significance and visual role on the corridor (as well as the logistical difficulty of re-routes) make the original corridor the preferred choice.	
Bridge	Original corridor.	Full retrofit of the bridge and approach trestles will be costly – though partial retrofit for minimum trail structure needs could be possible.	\$1,710
Glendale	Alternative C: almost completely separate from the original corridor and parallels the northern side of State Route 299.	The public and most agencies seem to feel that pursuing approval of Caltrans right-of-way encroachment is much preferable to the myriad of design and safety problems presented on the original corridor through Glendale.	\$1,115
<i>Blue Lake West</i>	<i>Original corridor.</i>	<i>This of all reaches is probably the most immediately developable as a city facility: driveway/road crossings and Powers Creek trestle replacement are the main issues.</i>	\$350
<i>Blue Lake East</i>	<i>Alternative C: as a short-term approach, the trail would end at Hatchery Road and connect with the City’s Trail Loop.</i> (Alternative B: as a long-term approach, the trail would connect the A&M corridor, Mad River levee and Hatchery Road to form a loop.)	<i>From the perspective of trail users, development of both options is ideal, but landowner needs and concerns must be addressed. If land uses change east of Blue Lake, trail development may be less of a concern to adjacent landowners – hence consideration of Alternative B as a ‘long-term’ option. In either case, bike/ped facilities on Hatchery Road will also need improvement.</i>	\$17
Korbel	Not recommended for trail development at the current time.	Unless Simpson Timber Co., who owns most of the corridor in this reach, wishes to pursue trail development in the future, it would not be developed as a trail.	\$0

*Not including additional right-of-way access acquisition. See [Chapter 7](#) for details about cost estimates.

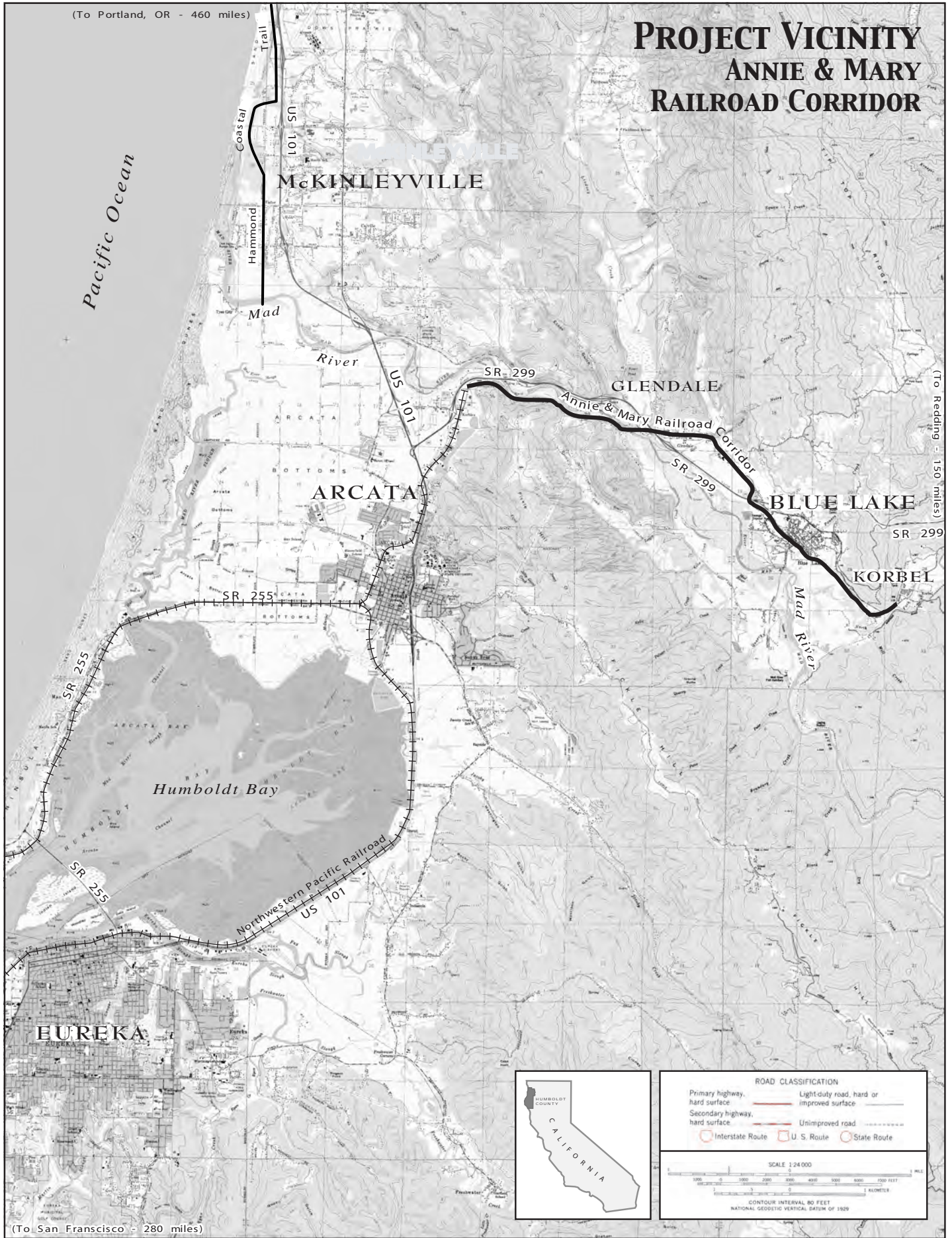
Refer to [Chapter 6](#) for a detailed description of planning reaches and analysis of alternatives.

(To Portland, OR - 460 miles)

PROJECT VICINITY ANNIE & MARY RAILROAD CORRIDOR

(To Redding - 150 miles)

Pacific Ocean



(To San Francisco - 280 miles)

A. The Annie & Mary Corridor

The A&M corridor plays an important role in local, state and national history, and boasts a rich natural environment and a diverse cultural landscape. Many area residents have memories of trains passing their houses, of riding the train from Korbel to school in Arcata, and of the train frequently derailing in its last years of operation. Local residents also prize the primary visual reminder of the railroad's existence: long and towering wooden trestles adjacent to rural roads. The corridor is still honored annually during the summertime 'Annie & Mary Day' in Blue Lake.

As one of the oldest rail corridors on the west coast that has been managed by a number of different railroad organizations, there are issues that warrant consideration in this context. During the nearly two-year timeline of this study, the physical state of the corridor has deteriorated considerably due to a lack of maintenance and encroachment of neighboring uses.

A1. North Coast Railroad Authority

The North Coast Railroad Authority is one of the only public railroad entities in the country. Most rail-trail research and planning efforts differ significantly from this one in that railroad entities in question are usually privately owned and managed and inhospitable to consideration of alternative corridor uses. It is difficult, however, to characterize the present situation of the NCRA, since its political, organizational and financial status is in a constant state of flux. The NCRA has been clear, however, that though their focus is to provide rail service, they are a public entity that strives to serve the public and care for their charge in the best way possible.



The NCRA has also been clear that long-term plans include re-establishment of rail service on the A&M corridor. It seems to be understood that there is little chance for rehabilitation of rail service on the A&M corridor in the relatively near future – the next ten to twenty (or more) years, possibly – when the NCRA priority, with severely limited resources, is to reestablish service between Lombard and Samoa. To this end, the A&M corridor is not addressed in a suite of strategic planning studies completed in the summer of 2002, compiled into the *NCRA's Strategic Update* and including a Capital Assessment Report (Willdan/HNTB), a Consent Decree Assessment (Kleinfelder), and *The Long Term Financial Feasibility of the Northwestern Pacific Railroad* (PB Ports & Marine). These reports are currently available on the NCRA website at www.northcoastrailroad.org.

Toward the long-term goal of reestablishing rail service on the A&M corridor, the NCRA requested that any trail designs should not impede rail return in a 1998 board resolution supporting trail research.

It is important to note that the history of the NCRA is extremely complex, primarily due to the numerous types and sources of funding that have been allocated, spent, or not awarded for various reasons; to high staff turnover; and to many other issues and problems beset the organization in its short history. Information provided herein is only that which is within the context of the A&M corridor.

In recognition of the benefits that an operating railroad could have for the economy and environment of the north coast, and the difficulties of maintaining a railway constructed through the ever-evolving geology in this region, a bill was passed in the legislature to provide public support for rail service in northwest California. The NCRA was formed in 1989 by the California Legislature under the North Coast Railroad Authority Act, Government Code Sections 93000, *et seq.* In 1992, the state purchased the railroad line from Willits north.

A companion bill passed by the legislature to provide funding to: 1) execute the mandate, 2) preserve and improve the asset, and 3) fund NCRA's administrative responsibilities was vetoed by Governor Deukmejian. This lack of adequate funds to implement the mandate of the NCRA has been a continuing problem. Continuing geologic erosion, damage incurred during heavy winter storms and changes in the way that Federal Emergency Management Act (FEMA) funds are awarded have kept the NCRA in constant funding crisis. Maintenance is particularly difficult in the Eel River canyon where landslides and other storm damage have been extreme. As a result of a November 25, 1998 Federal Railroad Administration Emergency Order (No. 21), the NCRA was ordered to cease all railroad operations.

The NCRA does not operate rail service on the corridor, but retains private contractor/s to do so. The organization is governed by a seven-member board appointed by Humboldt, Sonoma and Mendocino County Supervisors and currently has a staff of two. Funding for operation and maintenance of the NWP, however, has been problematic. In June of 2000, Governor Gray Davis allocated approximately \$60 million to the railroad. This money was to be spent on debt reduction, opening the south end of the line (from Willits in Mendocino County to Schellville in Sonoma County), and upgrading the line. It was also intended for augmenting FEMA funds designated for repair of damage from the 1998 storms for the north end of the line to return it to operable conditions. This funding, as of yet, has not been available to the NCRA due to state and federal requirements for release of the funds.

Return of Rail Service

Economic and environmental benefits usually make shipping by rail a preferred option for many businesses. However, the service must be consistent and dependable. The problems caused by storm damage, landslides, and NCRA funding problems have required potential rail freight customers to find other methods of shipping until consistent service can be restored. Restoring freight service to the main line between the San Francisco Bay area and Arcata is a top priority of the NCRA, and though restoration of service to the A&M corridor is a long-term plan, one of the primary questions asked by members of the public, adjacent landowners, and local governments is 'what is the likelihood trains will run on the A&M corridor in the foreseeable future?'



It is unknown if or when rail service will be reestablished on the A&M corridor.

The 2002 *NCRA Strategic Update* states that:

The entire railroad has been closed to commercial freight service since the Federal Railroad Administration (FRA) issued Emergency Order No. 21 (EO21) on November 28, 1998... While additional rehabilitation efforts are required on the line south of Willits due to the effects of time, major efforts are required from Willits north.

Planwest Partners and Spencer Engineering researched the potential for return of rail service to the A&M corridor ([Appendix A](#)). Spencer Engineering utilized a 1991 estimate for rehabilitation of rail facilities on the corridor ([Appendix D](#)) to extrapolate a current cost estimate. This estimate, \$8,087,456.00, however, can only serve as a frame of reference – actual costs would be much higher

than those presented here; a qualitative analysis corroborated by former A&M manager, Frank Lovio (2002). In particular, this estimate does not include:

- Costs for demolition or (the now necessary) *complete* reconstruction of bridge and trestle structures;
- Reconstruction with a heavier, standard rail gauge;
- Road crossing reestablishment and upgrades;
- Reconstruction of a number of curves that are too tight for all but historic (short) rail cars; or
- Drainage structure or base material reconstruction.

The July 2002 *Capital Assessment Report* provides an assessment of and cost estimates for rail rehabilitation between Lombard and Samoa. This report could potentially provide some frame of reference for analysis of costs associated with rehabilitating structures on the A&M corridor.

In addition to costs for rehabilitation, potential for future freight and passenger service revenue was assessed. There was a more exhaustive study of potential shippers conducted in association with the *Long Term Financial Feasibility of the NWP* after completion of Planwest research for this study ([Appendix A](#)). Potential revenues associated with rail operation on the corridor would not likely be high enough to offset rehabilitation costs.

The last manager of the A&M line was interviewed in June of 2002 regarding his perspective concerning the potential return of rail service. Frank Lovio, who lives on Warren Creek Road near the A&M Mad River Bridge, shared his frustration at trying to manage a railroad line fraught with infrastructure challenges. Two primary physical problems with the line prevented efficient operation: light gauge rail and numerous tight corners caused frequent derailments, and the hazardous state of trestles, particularly the Warren Creek Trestle.

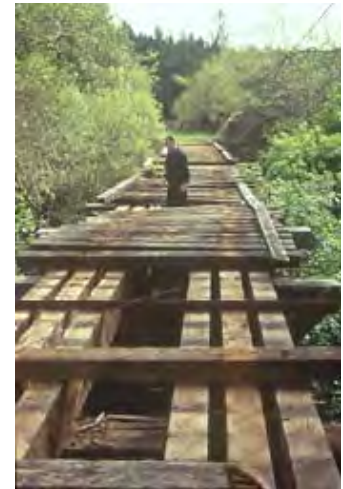


It may not be financially feasible to restore rail service to the A&MRR line

Mr. Lovio recounted that when in use, the Warren Creek Trestle apparently shook so hard that buses were ordered to not proceed under it when trains were present. It was after observation of a train on this trestle in 1995 that caused a Federal Railroad Administration representative to declare that Mr. Lovio himself would be liable if an accident were to occur. It was at this point that the NCRA closed the line, not to open since.

Mr. Lovio recalled infrastructure costs and minimum operations required to maintain service on the line. He reviewed estimated costs for restoring service on the line presented in [Appendix A](#), and felt they were significantly lower than what it would actually require to repair track and tie, trestles and bridge. He also noted that several curves on the line would need to be straightened to allow standard cars to use the corridor – and he emphasized that standard passenger cars would likely never be able to use the corridor due to their length. He also said that they had to run 50 cars a day on the line to bring in the necessary revenue for rail operation.

Overall, Mr. Lovio feels it is unlikely that the A&M will be able to support rail service again, and hopes that the corridor can be preserved as a public trail.



Historic wooden trestles on the corridor will be costly to reconstruct to support rail use.

Railbanking

In the long-term, the NCRA would like to restore rail service to the entire line, and on a longer timeline, to the A&M corridor. However, significant improvements would be required to reestablish rail service on the corridor, as discussed in [Appendix B](#). Because return of rail service to the corridor is not likely in the near future, the NCRA could railbank this section of the line, primarily to preserve their options and rights to the corridor.

Amendments to the 1983 National Trails System Act (NTSA) – 16 U.S.C §1247(d) – allow for preservation of rail corridors for future rail use while allowing for interim use and maintenance. Railbanking is a voluntary agreement between a rail carrier proposing to abandon a railroad right-of-way and a ‘trail agency’ (such as a government entity or land trust). Abandonment and railbanking proceedings are regulated by the Surface Transportation Board (STB). Railbanking provisions of the NTSA have, to date, preserved 3,707 miles of rail corridors in 26 states that would otherwise have been abandoned and lost to the public trust which (in most cases) originally provided for their acquisition.

Because a railbanked corridor is not considered abandoned, it can be sold, leased or (preferably) donated to a trail manager without reverting to adjacent landowners under abandonment proceedings. Furthermore, railbanking legislation preempts all state and local laws that may provide for reversion of easements. Other considerations are that a railroad’s ‘common carrier obligation’ (e.g. to remove railroad infrastructure upon abandonment) is waived and neither the California Environmental Quality Act nor the National Environmental Protection Act processes are triggered.

In this case, the NCRA could make a railbanking agreement with itself as a public entity until an/other entity/ies step forward to assume management responsibility. Formal transfer (or subcontracting) of management responsibility is provided for in 49 C.F.R. §1152.29. In several cases, the STB allowed agencies to railbank to themselves. In the event segments of the corridor not owned by NCRA are railbanked, easements will be preserved, but the NCRA cannot exact any financial return on their use (Rails-to-Trails Conservancy, 1996).

The process to railbank is complex (ibid.). Evidence of this complexity is the apparent fact that there are only a small handful of attorneys in the country who are knowledgeable about this process – one of which, Charles Montange of Washington state, provided the project team with some general railbanking information. To commence railbanking (which usually takes at least several months), abandonment proceedings must be initiated first. In this case, it would be a notice of exemption invoking STB’s two-year out-of-service exempt abandonment procedures (described in 49 C.F.R. §1152.50). During the abandonment process, and before its completion, railbanking proceedings would be initiated. Public notices must be posted about these proceedings, and environmental and historic reports must be filed with the STB. The NCRA must prepare and file a “statement of willingness” to assume financial responsibility for the corridor (required under 49 C.F.R. §1152.29). The NCRA would also file a request for an exemption from “offer of financial assistance” procedures (49 U.S.C. §10904, where an “offering” party may seek to acquire the property under STB terms and conditions). The NCRA should submit a fee waiver request to the STB. More details and project-specific information regarding railbanking will require expert counsel.

The estimated costs of railbanking include legal fees for an attorney with specific railbanking experience; NCRA staff (and/or consultant) costs of providing the attorney with necessary information and basic environmental and cultural reports; and STB fees (which are commonly waived for public agencies). This expense could range between \$8,000 and \$15,000.

Approximately 140 miles of rail corridor in California have previously been railbanked by cities, counties, trail organizations, and Joint Powers Authorities, according to staff at the California Office of the Rails-to-Trails Conservancy. Until the NCRA finds an entity willing to agree 1) to assume all managerial, financial and legal responsibility for the corridor and 2) that use of the right-of-way is subject to restoration of rail service, their main goal for invoking the federal railbanking statute is to ensure that the corridor remains intact as a linear feature with singular ownership.

If restoration of rail service becomes feasible in the future, a study by the General Accounting Office (1999) notes that the return of inactive rights-of-way to rail service is easier under railbanking than after abandonment. This study notes that resumption of rail service over a railbanked corridor is a 'rather straightforward process'. A few of the then 147 railbanked corridors (now 169, according to the RTC) had been returned to rail service.

At the time of writing, the NCRA is considering railbanking this 6.8-mile out-of-service segment of the A&M corridor, and is likely to do so when enough funds are available. The Friends of the Annie & Mary Rail-Trail are raising funds for railbanking and are waiting for a decision from the NCRA Board of Directors. The City of Arcata sent a letter dated August 7, 2003 requesting the NCRA railbank the A&M corridor from the northern city limits to Korb, and to request use of the corridor through the city for trail development.

The NCRA also appears to be considering use of the corridor as a trail. NCRA property management policy ([Appendix K](#), which is currently provided in a link on their website, www.northcoastrailroad.org) notes that 'protection and preservation of the former Northwestern Pacific Right-of-Way for transportation purposes is of paramount importance.' If the corridor is railbanked initially to the NCRA, management authority would need to be transferred at a time when pursuit of trail development is 1) requested by a trail management entity (see [Chapter 7](#)) and 2) approved by the NCRA.

Ownership Status

Before the details of railbanking were researched, the project team launched into determining ownership status on the corridor due to some questions about the issue. This research is presented below, however to be clear, if the corridor is railbanked, all rights to use of the corridor for transportation purposes will be preserved, whether they are fee title rights or easement rights.

The NCRA asserts that they own the A&M corridor in fee title. Of the approximately 130 neighboring parcels in the project area, at least four adjacent landowners, however, claim they possess deeds that refer to the A&M corridor as an easement granted to the railroad in former times (specifically APNs 516-27-104, 516-14-117, 516-17-108, 516-17-109, 312-14-122 and 312-15-103). When title searches were performed as the entire Northwestern Pacific corridor was acquired by the state, the A&M corridor was unfortunately not included in the process. Assessor's records indicate fee title ownership by the NCRA, except for the portion of the line east from the junction with the Mad River levee, where Simpson Timber Company owns the corridor.

To attempt to seek additional clarification on the matter without being able to conduct a formal title search on each rail corridor parcel in question, Spencer Engineering completed cursory ownership research in September 2002. Original deeds that comprised the corridor were reviewed in some detail.

Susie Van Kirk, local historian, reviewed eighteen property deeds recorded between 1881 – when the Arcata & Mad River Railroad Company was established – and 1887 – when most of the right-of-way for the railroad had been acquired – for Spencer Engineering. These deeds appear to cover most of the rail line, but apparently not all of the parcels of the current-day Arcata & Mad River Railroad corridor. Without detailed research, it was difficult to derive an exact correlation between these historic parcels ([Table 2.1](#)) and the parcels of today.

Deed language varies. In general, the deeds seem to fall into two categories. Ten of the 18 appear to grant ownership of the parcel, not just a right-of-way, to the railroad company. These do not state what the use of the land is for, nor do they have any language providing for reversion of the land back to the original property owner if it isn't used for a railroad.

The other eight deeds that were reviewed have dedication statements like "A right of way for a Rail Road over and across said property...", or, "...for the use of said Arcata and Mad River Railroad Company in the construction and operation of its Railroad over said right of way.", or, "A strip of land Thirty <30> feet wide for Railroad purposes on and over the land ...". None of the deeds reviewed appear to have any language that reverts ownership back to the original or adjacent property owners if the land is not used for rail purposes.

Table 2.1**Property dedications to the Arcata & Mad River Railroad: September 1881 to June 1883.**

	Type of Dedication	Book*	Page*	Date	Month	Year	Name
1	Fee Title	3	694	24	Sept.	1881	M.J. Falor
2	Easement	4	349	29	Nov.	1881	George Webster – Warren Creek
3	Fee Title	4	594	28	Nov.	1881	George Tilley
4	Fee Title	4	596	29	Dec.	1881	Arcata Transportation Co.
5	Fee Title	8	129	13	Dec.	1882	Martha Roger
6	Fee Title	8	131	6	May	1882	Thomas Devlin
7	Easement	8	433	24	April	1882	John Vance – Warren Cr.
8	Fee Title	8	438	31	March	1883	Jacob Zehndner
9	Fee Title	8	444	24	April	1883	John P. Warren
10	Easement	8	693	28	May	1883	C. Chartin – Blue Lake Ranch
11	Easement	8	694	28	May	1883	T. Larkin
12	Fee Title	8	697	28	May	1883	G.A. Stewart
13	Easement	8	699	28	May	1883	A. Norton
14	Fee Title	9	4	31	March	1883	Gustav Muhlberg
15	Easement	9	21	18	June	1883	William Scott
16	Easement	9	120	27	June	1883	G.W. Chandler et.al. Korbel
17	Fee Title	9	123	27	June	1883	Adam Koeppel
18	Easement	9	125	29	June	1883	Daniel McCahan

* Reference is to book and page of "Deeds", Humboldt County Records.

Several of the deeds reserve some rights to the original owner to cross the railroad property at some specified or unspecified points. One deed retains rights to timber over a certain diameter on the property. Precise analysis of these deeds is difficult, since they all have statements such as the following:

"Together with all and singular the tenements hereditaments and appurtenances thereunto belonging or in any wise appertaining and the reversion and reversions remainder and remainders rents issues and profits thereof to have and to hold all and singular the said premises together with the appurtenances unto the said party of the second part [Arcata and Mad River Railroad Company] and to their heirs and assigns forever."

Most of this research indicates the NCRA does retain the rights to the corridor, however, to determine exact status of parcels in question, full title searches will need to be completed.

A2. Physical State of the Corridor

The A&M corridor stretches approximately 6.8 miles from the Arcata Industrial Park to the Simpson Timber mill in Korbel. The corridor roughly parallels the Mad River and connects two cities and two unincorporated communities (Figure 2.1).

The western end of the corridor study area is the Aldergrove Industrial Park in Arcata at the rail corridor junction with West End Road. The corridor follows State Route (SR) 299 for a short distance, and then meanders above the Mad River through lush riparian forest – paralleling and crossing West End Road and Warren Creek Road – until crossing the Mad River. Once across the river, the corridor parallels a former rail yard where historic logging and railroad equipment is stored, continues under SR 299, and through the community of Glendale. The corridor travels through Glendale's industrial, residential, and agricultural areas and passes once again under SR 299 and into the town of Blue Lake.

Figure 2.1, Annie & Mary Corridor Aerial Map

(whole page, color, 11x17 accordion fold)



In less than five years since rail and tie were removed, much of the corridor is grown over, and several trees have fallen across trestles.

The corridor bisects downtown Blue Lake, immediately adjacent to a number of buildings including City Hall, the historic train station-turned-museum, the Logger Bar, the Mad River Grange, and a number of homes. The corridor continues along agricultural fields and riparian forests. The end of the line is the Simpson Timber mill and the company town of Korbel.

Most of the rail bed is fifteen to twenty feet wide. There are a few exceptions, in which the corridor is underlain by compromised drainage structures. In these areas, the rail corridor is between five and ten feet wide.

A number of sites with inadequate drainage were identified where the corridor is eroded, rutted, diverting water onto inappropriate places or does not drain.

The corridor was stripped of track and tie for salvage in late 1997, although a few small segments remain intact. Areas where the tracks and/or ties are still present include a segment near the Arcata Industrial Park and a few segments between the Simpson lumberyard and mill.

A number of adjacent industrial and residential uses have begun to encroach upon the railroad corridor. Several of these areas were not accessible during field investigation, thus the state of the corridor in these sites has not been confirmed. The NCRA does not have enough staff or funding support to pursue encroachments.

There are four standing timber trestles – and two small missing wooden bridges – in need of restoration for use as a rail or trail. There is also one three-span steel through truss bridge with two timber approach trestles spanning the Mad River that will require rehabilitation and retrofit. Many of these structures have historic significance, dating back to the early part of the last century, and require various levels of repair to restore them to their original, usable condition. More detailed structural and corridor analyses are in [Chapter 5](#) and [Appendix D](#).



The corridor is being used for private purposes in many places.

B. Natural Resources

The natural landscape and topography of the A&M corridor is a mix of riparian, second-growth conifer forest, agriculture, industrial and residential land uses. A complete environmental review will have to be complete with all of the permitting agencies for project implementation. The research done for this feasibility study is rudimentary and in no way exhausts the investigation along the corridor.

B1. Mad River and Tributaries

The Mad River drains approximately 497 square miles of mountainous terrain in Humboldt and Trinity Counties (Tolhurst, 1995). The river's headwaters are in Trinity County flowing northwesterly through the northern Coast Range and emptying into the Pacific Ocean in McKinleyville, just north of Arcata.

The total length of the main stem is slightly over 105 miles. The principal tributaries to the Mad River are the North Fork Mad River, Lindsay, Canon, Maple, Boulder, Bug, and Pilot Creeks. These streams drain about 30 percent of the total watershed. Along the A&M corridor smaller streams that flow into the river are Minor, Warren, Mill and Powers Creeks.

The lowest Mad River flows generally occur during the summer, usually July to September. Highest flows occur between December and March. Although inland mountains may receive up to 90 inches of rainfall annually, the study area receives less, from 40 inches at the coast to 65 inches near Blue Lake. Rainfall occurs mainly in the winter months, when coastal temperatures average 50°F (Tolhurst, 1995).

B2. Wildlife and Vegetation

The lower Mad River valley in the vicinity of the A&M corridor is characterized by a riparian/coastal forest and pastureland vegetation. Upland slopes are second-growth mixed conifer-hardwood forest. The lowland areas are predominantly riparian forest with agricultural, urban and industrial land use. Active farms along the corridor include irrigated and dry pastures and some produce crops.

What follows is a brief discussion of species and primary habitat types that will require specific consideration during environmental review. A number of these habitats are protected by law or support sensitive species protected by law. The Department of Fish and Game believes that the following species should be considered during the implementation of a potential trail. These species are protected under the Federal or State Endangered Species Acts; coho salmon (*Oncorhynchus kisutch*), chinook salmon (*O. tshawytscha*), steelhead trout (*O. mykiss*), bald eagle (*Haliaeetus leucocephalus*), marbled murrelet (*Brachyramphus marmoratus*), northern spotted owl (*Strix occidentalis caurina*), American peregrine falcon (*Falco peregrinus anatum*), willow flycatcher (*Empidonax traillii*), bank swallow (*Riparia riparia*). Refer to [Appendix B](#) for a list of species that warrant further consideration in this context.



Thick riparian vegetation flanks the western portion of the corridor.

Riparian Habitat

The California Department of Fish & Game and the County of Humboldt recognize streamside vegetation zones as sensitive habitats. Both agencies recommend construction setbacks from the vegetated riparian corridor. The County has specific standards regarding setbacks – in areas outside the Urban Development and Expansion areas - one hundred feet measured as the horizontal distance from the stream transition line on either side of perennial streams and 50 feet for intermittent. Inside Urban Development areas it is 50 feet for perennial and 25 feet for intermittent streams. When necessary, width of streamside management areas (SMAs) are expanded to include significant areas of riparian vegetation and areas of slope instability, not to exceed 200 feet (Humboldt County Framework General Plan, pages 26-27, standards section 3432). The Department of Fish & Game recommends, but does not regulate, riparian setbacks – wetland setbacks, however, are required to be a minimum of 100 feet. DFG regulatory focus is on alteration of the stream channel and sensitive habitat areas that are mapped.

Large riparian trees may serve as nest sites for birds of prey. The federal Migratory Bird Treaty Act and California Department of Fish & Game Code protect these birds and their nests. Riparian habitat exists at most stream and river crossings.

In-Stream Habitat

The Mad River is an important spawning and rearing stream for three species of anadromous salmonids, king salmon or chinook (*Oncorhynchus tshawytscha*), silver salmon or coho (*O. kisutch*), and steelhead trout (*O. mykiss*). All three species are listed as threatened under the federal Endangered Species Act. It also contains a healthy population of resident trout. Anadromous coastal cutthroat trout (*O. clarki*) have been found in the lower river and tributaries.

Sedimentation from land use practices and geology may be limiting good quality spawning habitat. California Department of Fish & Game staff noted that the maintenance of the corridor as a trail would likely reduce sedimentation in the Mad River (Schwabe, 2002).

C. Cultural Resources

The cultural history of the Mad River valley is rich and inexorably linked with area natural resources. The area was home to the Wiyot before arrival of European settlers. The Arcata & Mad River Railroad played an important role in the era of European settlement of the area.

C1. Native American History

Before the time of European arrival, the Humboldt Bay region was the home of the Wiyot, an Algonquian-speaking people. Before 1850 there were 1500-2000 Wiyot Indians and by 1860 there were no more than 200 left (Benson et. al, 1977). On February 25, 1860, Eureka citizens massacred large numbers of Wiyot as they slept on Indian Island. This event was one of the factors, in combination with displacement, disease, and slavery that devastated their numbers. This tragic event has remained a pervasive part of their cultural heritage.

The territory of the Wiyot began south of Yurok territory, near Little River. Wiyot territory was then divided into three natural divisions. The area of the lower Mad River was known as "Batawat." Humboldt Bay was called "Wiki" and the lower Eel River was "Wiyot." Approximately 10 former Wiyot towns lie near the A&M corridor. They ranged in size from 2 to 15 houses. The largest in Batawat was called "Kolikeme" and was located on the north side of the river mouth. This was the location of an annual ceremony called the summer jumping dance. Another historic site of interest, "The Arrow Tree," is located one mile east of Korbel. This no longer living redwood tree was formerly "stuck so full of arrows that it was like a porcupine up to a height of 30 or 40 feet (Loud, 1918)." It is said that two tribes formerly at war declared peace there and hence used it as a boundary. It became an altar for worship and a place of prayer (Loud, 1918).

Today there are about 450 people of Wiyot descent; most of them live in non-indian communities in northern California, while a lesser number live on the Blue Lake and Rohnerville Rancherias and on the Table Bluff Reservation south of Eureka. (<http://www.allianceofcatribes.org/bluelake.htm>)

C2. European Settlement

In December of 1849, a group of Trinity River miners found Humboldt Bay through an overland route and settled there in 1850. Initially, they called the settlement “Union,” after members of the Union Company laid out the plaza and surrounding blocks. This new supply center and point of entry for the interior gold mining regions on the Klamath, Trinity, and Salmon Rivers provided services for miners and their families. When the settlement was incorporated in 1858, the town was renamed “Arcata” (Arcata Chamber of Commerce, 2000).

Blue Lake was in its heyday during the late 1880’s as a central freight loading and pack mule station for those going east to the Trinity gold country. Although gold prompted these settlements, it was the area’s timber resources, which sustained its development. Along with Korb and the no longer existing communities of Scottsville, Riverside and Powersville, Blue Lake was also a bustling logging and timber town, with hotels, stores, a pharmacy and an opera house.



The Oddfellows Hall in downtown Blue Lake.

C3. History of the A&MR Railroad

The Arcata and Mad River Railroad is a rich part of California history. Sources in the Humboldt County Historical Society library document the AMRR as California’s first operating railroad. On December 15, 1854, what was then named the “Union Plank Walk, Rail Track, and Wharf Company Railroad” incorporated, making it the state’s first railroad. This was just three months before Sacramento’s railroad. The first “locomotive” to pull cars on the tracks, was a white horse named “Spanking Fury”. In 1860, the town of “Union” changed its name to Arcata. In the 1870’s, passenger service carried travelers from Arcata to Eureka, although timber accounted for most of the traffic along the line as logging swept into full production.



This undated advertisement in the Arcata Union newspaper illustrates the role the A&M corridor once played. (Courtesy the Arcata Eye)

While railroads around the country were spreading their networks, the Arcata and Mad River Railroad began a series of expansions as well. From the mid 1870’s throughout the 1890’s, the line stretched along the Mad River and across it, to the communities of Glendale, Blue Lake and Riverside. It then extended to the town of North Fork, now known as Korb, and continued beyond to Canyon Creek. Lumber mills followed the railroad into most communities along the Mad River as well as around Humboldt Bay.

The Arcata & Mad River Railroad came to be known as the Annie & Mary Railroad around the turn of the century. There are two possible sources of local lore for this name. The first involves the nieces of Mr. A. Korb, Annie and Mary Vintera, who were aboard a

northbound train from Arcata to Korbel when it fell through the Mad River Bridge, and plunged 40 feet to the riverbed. The other, more popular belief about the nickname, comes from the names of the two bookkeepers at either end of the line, one named Annie Carol, and the other named Mary Buckley. In 1970, the Arcata Mad River Railroad line was named a California Historical Landmark with a ceremony and a plaque in the City of Blue Lake.

The Arcata Mad River Railroad continued to provide freight service until 1992. The *Long Term Financial Feasibility of the NWP* (2002) summarizes the recent history of the NCRA.

The NWP was the only means of transportation within the corridor prior to completion of Highway 101 and remained the sole means of substantial freight movement for decades. It is worthy of note that the railroad has survived many natural disasters and was restored much sooner than State Highway 101 after the devastating and record setting storm of December 1964.

Southern Pacific sold the portion of the railroad north of Willits in 1984. Named the Eureka Southern, it operated until December 1986 when it declared bankruptcy. A Federally appointed bankruptcy trustee managed the railroad until 1992. Southern Pacific continued to operate the NWP south of Willits through an operating agreement with the California Northern Railroad.

In 1989 the California Legislature created the North Coast Railroad Authority (NCRA). Utilizing State provided funding this new authority acquired the former Eureka Southern out of bankruptcy in 1992. The NCRA acquired that portion of the NWP between Willits and Healdsburg from Southern Pacific in 1996.

The remaining portion of the NWP south of Healdsburg is now owned by the Northwestern Pacific Railroad Authority (NWPRA), a joint powers agency comprised of NCRA, the Golden Gate Bridge, Highway, and Transportation District, and the County of Marin. Freight service and related maintenance of this portion of the railroad is the responsibility of NCRA under an agreement with NWPRA.

In 1997 the NCRA Board chose to seek a private sector agreement to provide the freight service operations and maintenance of the railroad. Proposals were received and Rail-Ways, Inc. of Elgin, IL was as for the operator. Within weeks of reaching an agreement the El Nino storms of 1998 closed the railroad north of Willits with a series of major landslides. Decades of deferred maintenance left the railroad in a serious state of disrepair. Rail-Ways operated freight service south of Willits until the Federal Railroad Administration (FRA) issued Emergency Order 21, which closed the entire railroad in November 1998 for their failure to meet federal standards.



The A&MRR was served by numerous engines that carried both passengers and freight.



Historic train equipment in the Glendale rail yard.

Glendale Rail Yard

The Northern Counties Logging Interpretive Association manages an approximately one-acre yard adjacent to the corridor on the north side of the Mad River. The Association's goal is to create a museum for historic logging and railroad equipment and to restore passenger rail for tourism. AMRRR, Shay, and Hammond Line engines can be seen in the yard, as well as other historic rail related equipment. The yard is currently open to the public on an intermittent basis, and inquiries should be directed to the Northern Counties Logging Interpretive Association.

Blue Lake Museum

There is also a museum in the old AMRRR station in downtown Blue Lake, which is a local historical landmark. The Blue Lake Museum has historic photos and equipment on display, and is open to the public several days a week. The 1970 historic landmark plaque is located on the building. A central, linear park is located adjacent to and west of the museum building as well.



The Blue Lake A&MRR depot now serves as a museum for the corridor.

Historic Trestles

There are four large, freestanding wooden trestles along the corridor that are the primary public reminder of the Annie & Mary's existence. These trestles are considered by the public to be important historic elements of the region, and are indeed some of the last wooden trestles left in the region.

D. Communities

There are a number of communities adjacent to or in close proximity to the A&M corridor. The incorporated cities of Arcata and Blue Lake will likely be the most involved and affected by the development of a rail-trail along the A&M corridor.

D1. County of Humboldt

As one would travel on US Highway 101 in the northwestern corner of California, Humboldt County is located approximately one hour south of the Oregon border, five hours north of San Francisco, and four hours west of Redding on State Route 299. Approximately half of the county's population of 128,400 lives in unincorporated areas, and 59 percent of residents live in the Humboldt Bay area population center (Humboldt County, 2002). There are seven incorporated cities, ranging in size from approximately 400 to 30,000, including Blue Lake and Arcata along the A&M corridor. Of the 2.3 million acres of Humboldt County, much of it is forestland, coastal bluffs and beaches, or prairies and agricultural 'bottoms'. Very little of Humboldt County could be considered 'flat' in any way, except the small areas of alluvial river valleys and Humboldt Bay bottomlands.

Most of the project area is unincorporated and under County jurisdiction. The County owns and manages ten parks (equaling 478 acres) around the county, and one multi-use trail in McKinleyville. The rapidly growing unincorporated community of McKinleyville is the home of the Hammond (Rail-)Trail – the southern terminus of which is approximately two miles west of the A&M corridor.

D2. City of Arcata

The City of Arcata (with a population documented at 16,650 in 2000) is at the southwestern end of the A&M corridor. Arcata has a popular 'town center' – the plaza, a central green space surrounded by shops, restaurants and other amenities. Arcata is the home of Humboldt State University, the students of which comprise a significant portion of the city's population during the school year. The City is actively



The Arcata Plaza is gathering place for daily, weekly and annual events, such as the famous Kinetic Sculpture Race.

working towards preservation of open space, parks, creation of trails, and development of a pedestrian- and bicycle-friendly environment.

The City of Arcata owns and operates a number of parks and open spaces with trails and other recreational facilities. The City recently constructed a California Welcome Center near the junction of SR 101 and SR 299 to serve visitors to the region. The City of Arcata has expressed interest in connecting the Community Forest's trail system to the A&M, and has submitted (but was not awarded) grant applications for trail development on the A&M corridor.

The City is currently completing a Pedestrian and Bicycle Master Plan, which addresses use of the A&M corridor within City limits. The public has long used this corridor as a *de facto* trail, and consequently there is a great deal of public support for development of a multi-use trail on the railroad right-of-way that extends from the Arcata Marsh & Wildlife Sanctuary to the Aldergrove Industrial Park and study area. Until it is determined that this portion of the corridor will not be restored for rail service in the short-term, however, the NCRA is not likely to support this concept. This portion of the corridor is too narrow for a rail-with-trail design. One idea presented during the Master Plan public outreach meetings was to find a way to retrofit the tracks with a temporary surface that could be removed when rail service was restored. Another option along the northern portion of the corridor in the City is a parallel water transmission line easement nearby and to the east of the rail corridor.



For some time, the City of Arcata has been considering the potential for trail development along the A&M corridor in city limits.

At the time of completion of this study, the City Council voted unanimously to send a letter (dated August 7, 2003) to the NCRA to request use of the corridor through the city for trail development, and requested that the NCRA act to railbank the corridor between the Aldergrove Industrial Park and Korbel.

D3. City of Blue Lake

Blue Lake is primarily a residential community, which had 1,240 residents in 1994. Current census data shows a significant drop in population, however officials contacted at City Hall felt that the data regarding Blue Lake was inaccurate and they believe the population remains around 1200 residents. Although the town has water and public utilities, it offers relatively few services. Many residents travel out of town for work, shopping and other needs.

The lands to the north and east of the City are primarily steep hillsides owned by private timber companies. The lands to the south and west of Blue Lake are relatively level valley areas used primarily for residential and agricultural uses. Agriculture in the area includes cattle grazing and general crop rotation. Most of the processing/manufacturing associated



This mural, adjacent to the A&M corridor, was recently added to the downtown Blue Lake scene.

with local timber harvesting and agriculture is located outside of the City limits. There is a small industrial park located in the City that houses a number of successful businesses.

This small city has a historic atmosphere. The Blue Lake Museum, the former railroad depot, as well as the City Hall meeting space in the restored 'Skinner Store' – built in 1894 as a creamery – are historic sites, in addition to other historic buildings in the downtown area. Blue Lake is also the home of the world-renowned Dell'Arte School of Physical Theater, which draws students from all over the world.

The City of Blue Lake, in conjunction with the Blue Lake Trails Group, is finishing the final phases of negotiations for its one-mile multiple-use trail loop around the business park and along the Mad River near the A&M corridor, which could be connected with the rail-trail.

D4. Community of Glendale

Glendale is a small, unincorporated community two miles west of Blue Lake stretching along Glendale Road, and includes a mix of residential, commercial, and industrial properties. There is a small town center with a market, bowling alley and a few other services.

In Glendale, the Northern Counties Logging Interpretive Association manages an historic rail yard adjacent to the corridor. The yard is full of equipment representing the lifetime operations of the A&M.

D5. Community of Korbelt

Tiny Korbelt is one of the only company mill towns left in California. Historically, Korbelt was a thriving industrial timber town, and as the end of the rail line was the 'jumping off point' for miners and others bound for the Trinity and Klamath River country. There are no services in Korbelt.

D6. Blue Lake Rancheria

The 42-acre Blue Lake Rancheria, located adjacent to the west of the City of Blue Lake, is within the traditional territory of the Wiyot people. The Wiyot, lived around Humboldt Bay and along the Eel and Mad Rivers in northern California, ranging into neighboring forests and prairies. Approximately 10 former Wiyot villages lie within or around the potential trail area.

The Blue Lake Rancheria culture/language base includes Wiyot, Yurok, Tolowa, Algonquian, and Athabascan influences. The tribe has federally recognized tribal status and a membership of 53. The Rancheria gained federal trust status on December 15, 1983. The Rancheria members hope to acquire more land, since the present property will not accommodate the increase in membership that the tribe anticipates. The Rancheria recently opened a new casino facility. The tribe has expressed interest in trail facilities near the casino.

E. Land Use and Public Access

Predominant land uses along the corridor include a mix of residential, agricultural and industrial. Though no form of public use is legally allowed on the corridor, it has historically been and still is well used by local residents – now primarily in places where overgrowth is removed by either the Water District or adjacent landowners.

E1. Corridor Land Uses

There are several land uses that currently dominate the project area. A significant amount of lands adjacent to the corridor are dedicated to rural and community residential use. Several of the larger adjacent parcels are actively managed for grazing and farming. Three primary industrial areas exist along the corridor: at the western terminus of the project area in Arcata, in Glendale, and between the corridor and the Mad River in Blue Lake. Commercial uses occur along the corridor in downtown Blue Lake, in Glendale, and in the Aldergrove Industrial Park, in Arcata. Public recreation and local government or water district facilities are managed adjacent to the corridor along West End and Warren Creek Roads and in Blue Lake.

This diversity of land uses is common along railroads, which are built to particularly serve industrial and community transportation purposes. Rail-trails across the country interface with these and other types of adjacent land uses. As this area becomes more populous – development pressures are currently relatively high for the region’s history in Arcata, McKinleyville and potentially around Blue Lake – uses are likely to become increasingly residential.

The A&M corridor is zoned as a public facility through the various local jurisdictions.

E2. Humboldt Bay Municipal Water District

The Humboldt Bay Municipal Water District provides water to much of the region for commercial and residential use. The Water District collects water from several pumping stations on the Mad River, processes the water to meet drinking water standards, and transports the drinking water to the area’s municipalities including Arcata, Blue Lake, McKinleyville, and Eureka. The Water District manages pipelines and other facilities, such as air relief vents, located within, crossing, or running along the A&M corridor.

In addition to their role as water provider, the Water District manages two parks along the corridor. Recreation management, however, is a small component of the overall Water District program. Water District Parks 1 and 4 are named for the pump stations located in the river near each park. The Water District estimates the amount of maintenance hours spent per week on the parks is eight hours.



Blue Lake’s Perigot Park is popular for softball, skating, bocce and picnicking.

E3. Recreation

As noted earlier, the Water District manages two parks, which are immediately adjacent to the A&M corridor and the Mad River. Park 1, off of West End Road, is the larger and more frequented park. A Water District employee estimated it to be 20 acres in area, which on summer weekends hosts some 40-50 people per day. Park 4, off Warren Creek Road, is about half that size. Both are open year round during daylight hours. The parks have a variety of amenities including restrooms, picnic tables, barbecues, trash disposal and horseshoe pits. Additionally, the parks offer river access, where swimming and fishing are both permitted.

Perigot Park is located across Railroad Avenue from Blue Lake City Hall and is used for baseball, jogging, bicycling, boating and fishing. There are new bocce ball courts and a children's playground, which are both well used.

The 620-acre Arcata Community Forest and Redwood Park contains 10 miles of roads and trails as well as a picnic area and playground. It has the distinction of being the first community-owned forest in the U.S (City of Arcata, 1998).

The Arcata Marsh and Wildlife Sanctuary spans 154 acres and has 4.5 miles of trails. It is home and temporary refuge for over 200 species of birds. Other nearby parks include the Aldergrove Marsh and the Azalea State Reserve north of State Route 299.

The Mad River Hatchery is operated by the California Department of Fish & Game. It was built by the California Wildlife Conservation Board in 1971 to enhance salmon and steelhead populations in California's north coast streams. The annual production of Mad River Hatchery is currently 250,000 steelhead yearlings, 64,000 Rainbow trout and varying numbers of chinook smolts, yearlings, and coho yearlings depending on the number of adults trapped the previous season. The enhancement of fish populations in the lower Mad River has provided for heavy sport fishing below the hatchery.

The Blue Lake Trail Loop

The Blue Lake Trail Group and the City of Blue Lake have been working toward development of a 'loop' trail around the City's business park and along the Mad River since 1997. The Mad River levee, the southern portion of the loop, has been used by the public for many years. Other portions of the loop currently serve as fire access roads and function as trail, include sidewalks along Hatchery Road, and other portions require some trail development work.

The northwest corner of the loop is approximately 500 feet from the A&M corridor along Hatchery Road.



The Blue Lake Trail loop, consisting of a fire access road, levee and other access routes, is near the A&M corridor.

The Mad River Levee

East of the business park is an approximately one-mile section of river levee that, most of which, was for many years a source of contention in the Blue Lake community. Though the public had been using the



Part of the eastern Mad River levee was recently opened for public use.

levee as a trail for many years, periodic irresponsible uses of the levee caused adjacent agricultural landowners frustration and concern. One adjacent landowner in particular challenged the right of the public to use the levee, but recently settled out of court with the State of California to allow public access after fencing and other accommodations were made. At the eastern limit of this landowner's property is a gate on the levee, beyond which public access is not currently allowed. This section of the levee connects with the A&M corridor at the levee's floodgate.

The Hammond Trail

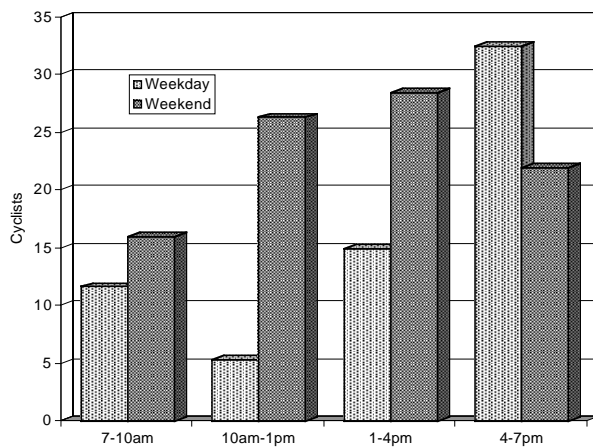
The southern terminus of the Hammond Coastal Trail, currently the Mad River Bridge south of McKinleyville, is approximately two miles from the western end of the proposed A&M rail-trail. Also a former railroad line, the Hammond Coastal Trail is a segment of the California Coastal Trail. Currently, the Hammond Coastal Trail is the only Class I bike path in Humboldt County that provides opportunities for both recreation and non-motorized transportation.

The County of Humboldt began developing a trail on this corridor in 1979, when the steel truss Hammond Mad River Bridge was retrofitted for non-motorized use. Since that time, the trail has been expanded northward approximately 4.5 miles to Clam Beach County Park – including some shared segments of roadway, and one short missing ‘link’ at Widow White Creek, north of the Mad River mouth – by County Public Works and



The Hammond Trail in McKinleyville, just west of the Annie & Mary corridor, is also a former railroad line.

NRS. Portions of the trail are paved with asphalt (8-foot width), other portions are compacted gravel and native soil, and some of the newer segments have a surface of crushed shale (with a 10-foot width and native soil shoulder). Funding for construction of the trail has mostly come from state programs such as the State Coastal Conservancy, Caltrans’ Environmental Enhancement and Mitigation Program (Chapter 8).



Average number of cyclists counted during twelve-hour periods on several dates in the fall and spring of 1997-98 on the Hammond Mad River Bridge (NRS, 1999).

Use levels on the Hammond Trail are not well documented, however a bicycle count in 1997-98 shows that daily use of the region’s only long-distance multi-use trail is significant (NRS, 1999). NRS staff also receive frequent complaints that the Hammond Trail – usually referring to that portion near Hiller Park and Widow White Creek in McKinleyville – is not wide enough to comfortably accommodate heavy use on particularly weekend days with good weather.

E4. Other Points and Events of Interest

Schools

The Blue Lake School serves students kindergarten to 8th grade who are primarily from the communities of Glendale and Blue Lake and nearby outlying areas. It is located near the A&M corridor. After 8th grade students must travel to the nearby Arcata and McKinleyville High Schools. Arcata High School serves students 9-12th grade from many communities in the Northern Humboldt School District.

Northern Humboldt Community Day School is located just off West End Road less than a quarter mile from the proposed trailhead. The school serves youth in 9th through 12th grades.

Humboldt State University is a four-year college located in the City of Arcata. Students and faculty add significantly to the population of Arcata and neighboring communities when the University is in session. HSU classes have contributed to A&M research efforts.

Dell'Arte is renowned for its excellence as an International School of Physical Theatre and as one of the longest-running theatrical ensembles in the U.S. The facility in Blue Lake is home to an internationally-acclaimed touring company, a full-time professional actor-creator training program, summer workshops, a Bali residential program, original performances by resident and guest theatre artists and an innovative arts in education program. Dell'Arte draws students and audience members from all over the world. Performances take place throughout the year, highlighted by the annual Mad River Festival each summer.



The Dell'Arte School of Physical Theater holds a samba parade and pageant on Annie & Mary Day every July.



The Friends of the Annie & Mary Rail-Trail provide an information booth at Annie & Mary Day in Blue Lake.

Related Community Events

The project area boasts a number of popular events. **Annie & Mary Day** is celebrated every summer on the third Sunday of July, and serves as Blue Lake's primary community celebration for the year. This event used to include rides on the railroad, however now includes a parade, a fiddle contest, food and games, a craft fair, and a street pageant at Dell'Arte.

The Six Rivers Running Club hosts running events on West End Road every year.

Bicycling groups host rides,

and recently, 'cyclocross' races on private parcels near the corridor.

The City of Arcata hosts many community events annually, most of which are downtown in the Plaza area and include the Kinetic Sculpture Race, the Oyster Festival, and the North Country Fair.



In previous years, as here in 1979, Annie & Mary Day events included train rides.

F. Action Items

- The corridor should be **railbanked** immediately to preserve the NCRA's ability to use the corridor in the future – whether for rail or for trail. The **NCRA should receive funding support** for this effort, as it will ensure the state's investment in the corridor is maintained.
- The natural, cultural, settlement and development **history of the corridor** should be more extensively researched and reported for use in interpretive information, due to its significance as one of the first operational railroads in the western United States.
- **Cultural and threatened and endangered species surveys** should be completed for the corridor.
- If trail development occurs on the A&M corridor, on- or off-street facilities should be improved to establish a connection between it and the **Hammond Coastal Trail**.

Planning a rail-trail is often a long and involved process. This chapter provides a brief overview of the history of planning efforts associated with the proposed A&M Rail-Trail. Also outlined are planning documents that support or mention the potential for utilizing the A&M corridor as a trail.

A. History of A&M Rail-Trail Planning

As previously mentioned, trains have not run on the Annie & Mary corridor since 1992. In 1997, the North Coast Railroad Authority (NCRA) made plans to restore service on the Annie & Mary route with a federal transportation grant. The NCRA Executive Director at the time contacted Natural Resources Services (NRS) to see if matching funds could be available to work simultaneously toward development of a trail adjacent to the rail line. However, federal rail funds were re-prioritized for use on the main line when it became apparent that winter storm damage in the Eel River canyon, south of the Humboldt Bay region, demanded significant resources to restore service. That need, combined with the knowledge that the existing federal funds for the Annie & Mary line would not be sufficient to get trains to Korbel again, led the NCRA to delay the restoration of service to Korbel indefinitely. In late 1997, a debtor of the NCRA removed A&M rails and ties for salvage.

Consideration of a trail along the A&M rail corridor was initiated in response to strong community desire to make use of this public corridor as a trail linking the communities of Arcata and Blue Lake. In the late 1990's, a community 'visioning' funded by the Forest Service Rural Communities Assistance Program inspired the creation of four community groups; one of these was the Blue Lake Trails Group. This group determined that the use of the A&M corridor for a trail should be a top priority, but that it was beyond their scope to look at the whole trail outside of city limits. A few members of the trails group created the Friends of the Annie & Mary Rail-Trail (Friends).

The Friends formed after two public meetings, during the fall of 1997 and the winter of 1998, in response to public interest in a trail, as well as to organize volunteers. Since their formation, the Friends have made rail-trail educational presentations, and raised funds for the assessment of rail-trail feasibility. NRS staff have provided technical assistance and organizational support to the Friends. The Friends received initial support in the form of resolutions and support letters from the North Coast Railroad Authority, the Cities of Blue Lake and Arcata, the Humboldt County Board of Supervisors, former State Senator Mike Thompson, and former State Assemblywoman Virginia Strom-Martin. State Senator Wes Chesbro has been a strong supporter of the trail concept along the A&M corridor as well.

In May of 1998, the NCRA board endorsed research of the trail concept through board resolution 98-2. The board did not endorse development of the trail, but was interested in exploring the idea further. The NCRA has been consulted throughout the research and planning process.

In December of 2000 NRS completed the A&M Rail-Trail Preliminary Assessment with funds from local donations and small grants. This document outlined current efforts and potential issues with trail development along the corridor. The assessment also addressed the need for a more comprehensive feasibility study. This *Feasibility Study* effort was launched in September of 2001.

B. Planning and Policy Context

There are currently numerous existing plans that encourage the use of out of service rail lines as multiple use trails. In addition, many plans and studies highlight the creation of interconnected trail systems for transportation and recreation as a priority. Information used in this *Feasibility Study* includes existing general plans, bicycle and trail plans and other relevant reports, plans and issues.

B1. Summary of Local General Plans and Interest

Three local general plans address the specific area associated with the potential trail. The following is a summary of relevant policy language from associated plans.

City of Arcata General Plan, 2000

The following excerpts from the City's General Plan illustrate community interest in and commitment to non- motorized transportation and recreation opportunities. The transportation element principles and goals provide a framework for the creation of a "transportation system which provides a choice of travel modes". Goals include providing opportunities for and encouragement to residents for use of alternative forms of transportation such as walking and bicycling.

Objective. Create and maintain a balanced transportation system with choice of bus transit, bicycle, and pedestrian as well as private automobile modes. Reduce the percentage of trips that are made by automobile and provide the opportunity and facilities to divert trips from automobiles to other modes.

Objective. Create a complete, interconnected bicycle and pedestrian circulation system. Increase the percentages of person trips via walking and bicycling. Provide a pedestrian and bicycle system which serves commuter as well as recreational travel.

While the proposed Annie & Mary Rail-Trail would be in just a small section of the City limits, plan supports development of trails that provide a substantial link to an interconnected City network. The trail would provide both local and regional commuter and recreational travel opportunities.

The General Plan T-5a Overall bicycle route system and connectivity.

2. *Cooperation with local and regional agencies and jurisdictions. The City shall cooperate with other agencies to establish and maintain off-street pathways and trails utilizing creek, utility, and railroad right of way.*

Policies related to rail service and conversions to trails

T-7a Retention of railroad right of way. The North Coast Railroad Authority is encouraged to maintain railroad rights-of-way even if service is abandoned. The City may consider purchase of right of way should the Authority decide to sell. Railroad right of way may potentially be used for creation of multi-use trails. Long range potential uses of railroad right of way include an exclusive bus transitway or passenger rail service.

T-7d Rails to trails conversions. The City supports plans to convert abandoned railroad rights-of-way to provide multi-use trails. Planning efforts shall be coordinated with federal, state, and regional agencies to obtain funds to purchase or lease abandoned lines if the railroad authority selects not to dedicate the right of way. If feasible, active railroad lines may be used for multi-use trail purposes.

The rail corridor through Arcata is and has long been heavily used by pedestrians though there are no formal trail facilities. The City recently applied for funds to build a rail-with-trail on the portion of the Arcata & Mad River corridor between Sunset Avenue and Alliance Road, through Shay Park. Though unsuccessful in that effort, the City is still interested in seeing this corridor better serve the public.

The City is currently working on a Bicycle and Pedestrian Master Plan Update. One aspect of this planning effort will address potential connections to other communities and recreation opportunities, including the Annie & Mary Rail-Trail. When complete, this plan will outline policies, programs and projects to support the increased use of bicycles as an alternative mode of transportation.

City of Blue Lake General Plan, 1986

The City of Blue Lake has been interested in improving non-motorized transportation in their community for at least 15 years. In recent years, the Council and Planning Commission have been very interested in developing trails in and around the community, including the A&M corridor. The most recent City General Plan was adopted in 1986. While the information is somewhat dated, it illustrates the ongoing interest for non-motorized transportation by the community.

The stated goal of the of the circulation element is to “provide for all forms of transportation needed and used by the community.” The general plan describes policies and implementation measures for improving “non-vehicular access”.

Policy 18. The City shall promote the use of bicycles as a convenient, alternate mode of transportation consistent with Blue Lake’s ‘small town’ atmosphere.

Additional policies in the General Plan refer to coordinated pathways for pedestrians, bicyclists and equestrians. More recently, the City has developed a trail and pathway plan. Refer to the section B2, below, for more detail on this plan.

Humboldt County General Plan

Most of the A&M corridor lies in unincorporated areas, therefore, the County General Plan will greatly influence planning and development of the corridor. At the time of this study, the Humboldt County General Plan is in the middle of a multi-year update process. When complete, the General Plan will guide county-wide development with a twenty-year focus.

The current 1984 General Plan states:

‘Bicycles should be considered as a viable transportation option for commuting in Humboldt County.’

In a summary of Humboldt County’s General Plan update process, the *Critical Choices Report* (2001) notes a proposed range of options for ‘non-motorized transportation’, including the recommended option that staff:

Develop trails implementation policies and standards, e.g. dedications, acquisitions, security, compatibility with adjacent land uses, maintenance, design, etc...

Currently, it is difficult to determine to what extent the Annie & Mary, or general policy support for multiple-use trails like it, will be addressed in the current update of the General Plan. Information regarding public support in the following chapter may be useful in that respect. An initial General Plan ‘discussion paper’ *Moving Goods and People* (2002) introduces policy options, including: making bikeway and trail developments a funding priority by including them into Capital Improvement Program lists for roads and by pursuing federal and state funds for them (as many local cities currently do); development of a county-wide master plan for non-motorized transportation; establishment of ‘level of service’ standards for non-motorized facilities; and establishment of partnership ‘Adopt-A-Path’ and ‘Adopt-A-Bikeway’ programs.

B2. Local Trail, Bicycle, and Transportation Plans

HCAOG Regional Transportation Plan, 2000 -2002

The Humboldt County Regional Transportation Plan (RTP) is a planning document of the Humboldt County Association of Governments (HCAOG). HCAOG member entities are Humboldt County, Caltrans and the incorporated cities. The RTP is updated every two years, and the overall goal of the current 2000-2002 plan is:

“To develop, operate and maintain a well-coordinated, balanced, countywide multimodal transportation system that is safe, efficient and provides good access to all cities, communities, and recreational facilities, and into adjoining regions. A balanced multimodal transportation system includes but is not limited to highway, public transit, aviation, marine, railroads, recreation, bicycle, pedestrian, and utility systems.”

The RTP states several specific goals, policies and objectives that support creation of a “*transportation system that provides inter-community and intra-community non-motorized pedestrian and bicycle travel throughout the region.*” The potential development of the rail-trail is consistent with the policies and goals for diversifying transportation options in Humboldt County. The Annie & Mary Rail-Trail planning efforts are identified in the RTP as a short-term project.

Humboldt County Regional Pedestrian Needs Assessment, 1999

This study, by SHN Consulting Engineers for the Humboldt County Association of Governments, provides a detailed assessment of the regions pedestrian facilities and needs.

In a section regarding the community of Blue Lake, use of the A&M line for pedestrian travel was noted as one of the three primary issues. The study suggests the use of the NCRA right-of-way to accommodate pedestrian needs.

Humboldt County Trails Plan, 1979

The County Trails Plan will not be fully updated as a part of the current County General Plan update. However, a segment of the new plan will focus on recreation, and will include some information on trails. At the time of this writing, the County website (<http://co.humboldt.ca.us>) has a link on its homepage to a site with the entire text of this outdated Plan – an indication of the level of community support for trail development.

The 1979 County Trails Plan compiled all past known routes and provides recommendation for planning policies. The plan was developed in order to:

Provide guidelines for the establishment of a safe, convenient, and enjoyable transportation and recreation oriented county trails program for use by bicyclists, equestrians, and hikers.

Increase the level of participation in transportation and/or recreation bicycling, horseback riding, and hiking activities which can provide physical, social, environmental, and economic benefits for County residents and tourists visiting the region.

One clear objective of the plan is to develop an easily accessible trail network to connect communities. The plan also contains policies that would help to guide planning for potential rail-trails. Table 2.1 in the plan cites abandoned railroad rights-of-ways and historic trails as potential sites for trail development.

Trails that provide access to ‘destination points’ such as river access, community recreation lands and community activity centers are considered highly desirable under the plan.

Blue Lake Community Trail & Pathway Plan, 1999

This plan identifies proposed trails, long-term priorities, policies and potential implementation measures to facilitate the development of a better pedestrian and bicycling environment in Blue Lake.

Providing an alternative transportation system that is ‘safe, fun and efficient’ is one of the guiding principles for the plan. Also highlighted is cooperation with agencies and other jurisdictions in order to utilize abandoned right of ways. This plan provided the framework for conceptual design recommendations for the Blue Lake Trail Loop. The plan may be used again in coordination with this Feasibility Study to guide potential development of the Annie & Mary through the City of Blue Lake.

Humboldt Bay Trails Feasibility Study, 2001

Funded by a grant from the State Coastal Conservancy, the *Humboldt Bay Trails Feasibility Study* was developed by the Natural Resources Services of RCAA to serve as a collection of research and recommendations to encourage and facilitate improvement of non-motorized access to and around Humboldt Bay. The document is broad was created to be used by a variety of local, state and federal governments along with citizen support groups. The study is intended to heighten awareness of the connection of local communities to the Bay, help to set regional public access priorities, and coordinate access and non- motorized projects into community and regional planning. The projects outlined in the study could be linked with the Annie & Mary Rail Trail as part of an integrated regional trails system.

Bicycle Facilities Feasibility Study, 1997

The *Humboldt County Bicycle Facilities Planning Project*, completed by NRS and funded by the North Coast Unified Air Quality Management District, was designed to serve as a regional non-motorized transportation planning tool and ‘jumpstart’ to increase focus on non-motorized needs in the Humboldt Bay region. The study is an analysis of potential bikeways in and between the communities in the population center of northern Humboldt County. Natural Resources Services of RCAA solicited and collected input from community members commuter and recreational cyclists, transportation planners, engineers, municipal and county governments, and special districts.

This study cited the potential for a rail–with-trail along the A&M corridor. Recommendations for improved facilities from Arcata to Blue Lake include the creation of a Class I bike path along the rail corridor. The study acknowledges constraints associated with trail development.

C. Other Relevant Jurisdictions and Their Plans

C1. North Coast Railroad Authority

As mentioned, in 1998 the NCRA Board passed Resolution 98-2, which authorized the NCRA to support efforts to research the potential for a trail on the A&M corridor.

The most relevant planning documents produced by the NCRA in recent years, a suite of 2002 studies that were summarized in the *NCRA’s Strategic Update*, were briefly mentioned in Chapter 2. None of these studies address the conditions of or plans to revive service on the A&M line, except in an interview of potential shippers along the line, which includes several along the A&M corridor: Britt Lumber and the LP Arcata Particleboard Plant in the Aldergrove Industrial Park; Blue Lake Forest Products – which closed its doors in April of 2002 – in Glendale; and the Simpson Timber Company

Korbel operation. The scope of these studies is otherwise stated to be between Lombard and Samoa, on the main NWP line.

C2. Humboldt Bay Municipal Water District

The HBMWD was created under Division 20 of the California Water Code. The Water District derives its powers and purposes from Part 5 of Division 20. As noted on the District's website (www.hbmwd.com):

HBMWD is a wholesale water agency that serves the greater Humboldt Bay area - including the cities of Eureka, Arcata and Blue Lake, as well as Community Service Districts serving unincorporated areas such as McKinleyville, Cutten, Fairhaven, Fieldbrook and Manila. The population served via these agencies totals about 65,000 people.

Water Districts' recreational powers are provided for under Article 1, Section 71660 of Part 5: "A district may construct, maintain, improve and operate public recreational facilities appurtenant to facilities operated or contracted to be operated by the district."

The Water District is interested in the development of the Annie & Mary Rail-Trail as it affects the facilities and operations of the District. Some trail features that may affect the District's property adjacent to the trail are fencing, signage, surfacing and drainage. These elements should be designed in consultation with District staff to maximize the benefits of the trail to the District and minimize or mitigate impacts. Designed correctly, the trail could provide a myriad of benefits to the District's parks via increased exposure and access, and, most significantly, could provide needed assistance with bridge maintenance.

The Water District is part of a joint powers agreement (JPA) with other municipal water providers within the state. The JPA was formed to allow the Water Districts to create special insurance coverage for the recreational uses of the providers' facilities. The ability of the water providers to continue a recreational use component of their facilities rests, at least partially, with the ability to acquire and retain this specialized insurance. In a fall 2002 meeting between NRS, City, County, and Water District staff, the Water District indicated that they are not interested in assuming management responsibility for a completed Annie & Mary Rail-Trail. They feel such a responsibility is beyond the scope of their expertise and authority.

In addition to trail design impacts, where water facilities and pipelines are within the rail corridor the District is concerned that their maintenance access and access agreements with adjacent landowners are not impacted by any potential trail development. Maintaining the best possible relationship with these adjacent landowners is important to the Water District.

The District Board has not taken an official position on the potential rail-trail. In meetings and conversations with district staff, it was noted that the District is not interested in management of the trail at this time (see Chapter 7, Management and Maintenance, for summaries of agency interviews). District staff felt that it would require additional mandates and funding. However, the District is very concerned about access to waterlines and maintenance of facilities that support them, particularly the line across the Mad River Bridge.

C3. Blue Lake Rancheria

Blue Lake Rancheria is a federally-recognized Indian reservation shared by native Wiyot, Yurok and Hupa people on 31 acres southwest of and adjoining the City of Blue Lake. Blue Lake Rancheria is governed by a General Council – all resident tribal members over 18 – with an elected 5-member Business Council. A Charter Development Corporation (formed in 1988) manages the tribe's economic activities.

The Rancheria is interested in the A&M corridor due to its proximity to the Rancheria and to a number of culturally significant sites along the corridor. The Rancheria recently developed a casino on their property, increasing the levels of traffic traveling Chartin Road, which crosses the A&M corridor. During the road improvements associated with this project, Chartin Road and Railroad Avenue were improved – sidewalks and curbs were constructed over the A&M corridor crossing of Chartin Road.

Consideration of Cultural Resources

Rancheria representatives hoped that, however trail development might occur, that planners of various agencies and organizations properly consider nearby cultural resources. Hence, the following information is included as a guide and reminder for how to assess and plan for cultural resources in proximity of the corridor.

During the planning phase of new access or trail facilities along the Annie & Mary corridor, an evaluation must be conducted about the potential impacts on known or unknown cultural resources. Damaging impacts occur in two ways: construction activities can directly alter or destroy a site and, indirectly, new access or trail facilities can open cultural sites to increased traffic and potentially destructive activities caused by visitors.

The term ‘cultural resources’ refers to prehistoric and historic artifacts and places that have significance to contemporary people – they tie the present to the past. In general terms, these resources are 1) locations where people lived or processed materials, 2) small and large human-made items from tools to buildings, 3) by-products from human activities, and 4) human remains.

During Annie & Mary Rail-Trail planning and design, the approximate footprint of disturbance should be shown to the Wiyot Tribe, to ensure their ancestors’ sites are not in jeopardy of being disturbed. Both the Table Bluff Reservation and the Blue Lake Rancheria should be consulted. The tribe has some ‘known sites’ of cultural significance mapped in the general project area, and will notify project planners of potential interface if they are involved early. This information should be recorded in a general way, without specific site location, for further planning efforts and CEQA use, since it is best not to provide information about site location to reduce the potential for all-too-common looting and defacement.

Ideally, trail and access facilities should avoid cultural resource areas, but if this is not possible, the potential to mitigate the amount of disturbance should be discussed with the tribe and employed. In areas where the corridor would become a trail, there will likely be little disturbance. However route alternatives off the corridor, especially in riparian areas, should be evaluated. It is recommended that a Wiyot archaeological monitor and an archaeologist be present during all earthmoving activities. If there is a potential that unknown sites may be disturbed, sample plots and a surface survey should be conducted prior to construction by a professional archaeologist accompanied by a Wiyot monitor. These precautions minimize the potential for cultural resource damage and the extra costs associated with stopping work during the implementation phase due to archaeological disturbances.

Most historic sites attributed to European-American settlers and their descendants are documented in written records and can be found through local research. This should also be accomplished during the planning process and documented for CEQA purposes. A professional archaeologist should be used for site investigation prior to construction if research indicates known or potential historic sites. If a known historic site is within the construction corridor, alternative routes and other mitigation efforts should be employed, where possible.

C4. California Department of Transportation (Caltrans)

Caltrans' interest in the A&M corridor is twofold: as the state agency charged with planning and providing for transportation infrastructure, and as the manager of State Route 299. Caltrans' District 1 staff provided information and input regarding both of these issues.

Caltrans staff provided information about statewide rail studies, Federal Railroad Administration guidelines, past and current NCRA planning efforts, and other information necessary for development of the analysis of rail rehabilitation potential provided in [Appendix B](#). Caltrans staff also participated in discussions regarding the potential for railbanking the corridor (Chapter 2).

SR 299 is a significant feature in the project area. Portions of the A&M corridor are located immediately adjacent to and below this primary transportation feature. As a project that could involve encroachment onto state highway right-of-way and potentially otherwise influence the flow of highway traffic, this proposed trail will be of significant concern to Caltrans.

The westernmost segment of the corridor and two potential trail route alternatives explored in Chapter 6 lie within or adjacent to state highway right-of-way. Chapter 1000, 'Bikeway Planning and Design', of the Caltrans Highway Design Manual notes that "bike paths within the clear recovery zone of freeways shall include a barrier of separation." Additionally, any proposed state highway right-of-way encroachment is subject to extensive analysis and consideration by Caltrans. Any such proposals must illustrate a lack of viable alternatives, and must be approved at the state level through an encroachment permitting process. This process has been employed for several sections of the nearby Hammond Trail, however each encroachment circumstance is unique and carefully considered by Caltrans.

F. Action Items

- If trail development is to be pursued, **local government planning document updates** should reflect this objective. Specifically, the County should pursue all of the recommended non-motorized transportation policy options noted in its 2002 discussion paper *Moving Goods and People*.

Outreach to the community is a critical step in determining the feasibility of any public project. During the process of completing this study the project team has consistently utilized public input to focus ideas and research. This chapter is a brief summary of outreach methodology and results.

A. Scope of Community Outreach

The goals of the outreach effort were as follows:

- To inform the public and relevant agencies of current planning efforts;
- To identify and document issues and concerns of the landowners and agencies with interests or jurisdiction along the corridor;
- To gain input on design and route recommendations from landowners, public and agency representatives.

This outreach effort was intended to provide information to the project team while informing the public of the planning process.

B. Public Outreach

Public outreach to determine adjacent landowner and potential trail user needs and concerns included:

- An informational meeting for landowners adjacent to the corridor held on the evening of December 6th, 2001 in Blue Lake;
- NRS created a simple website with general information about the project at www.rcaa.org/nrs/projects/anymry.html, and the final study will be posted on this website;
- An adjacent landowner was hired as a consultant to the project team to assist in the collection and dissemination of information for and about the project;
- A public survey addressing issues associated with the proposed rail-trail and other trails in the region was sent to 500 randomly selected Humboldt Bay region residents in May of 2002;
- NRS staff met with Frank Lovio, who was the last manager of the A&M line;
- Individual meetings with specific landowners to address important issues concerning specific private property concerns and trail alignment;



A Landowner Forum and Public Forum were both well attended.

- Alex Kassatkin, an landowner adjacent to the A&M corridor, provided consultation services to the *Feasibility Study* team to collect input of other adjacent landowners and corridor area neighbors;
- A second informational meeting was held for the general public, adjacent landowners and agency representatives in Blue Lake on Thursday, September 12th, 2002; and
- Outreach and information has been provided to interest groups through meetings and newsletters of groups such as the Humboldt Trails Coalition, Humboldt Bay Bicycle Commuters' Association, Bigfoot Bicycling Club, Friends of the Hammond Trail, Friends of the Annie & Mary Rail-Trail, California Historic Preservation Foundation (article published in September, 2002), and the California Coast & Ocean (article published in summer of 2001). NRS also provided informational support to the Friends of the A&M at Annie & Mary Days in Blue Lake.

B1. Public Meetings

Landowner Forum

The format of the landowner forum was designed to both provide adjacent landowners information about the potential rail-trail and *Feasibility Study* project and to gather information about their concerns and ideas.

The forum was designed to provide a safe and open place for the landowners to express their concerns, share ideas and learn about the process firsthand. For this reason, no local media was notified and only a few non-landowners were invited, including City, County and NCRA officials. Each adjacent landowner was sent a postcard informing them of the public forum to be held in several weeks.



Approximately 130 residential, commercial and public parcels abut the A&M corridor in the study area.

The first half of the meeting was dedicated to introducing the *Feasibility Study* project and rail-trail projects in general. The introduction consisted of presentations from NRS staff, representatives from the Rails-to-Trails Conservancy, a local resident with land adjacent to the corridor, and a panel discussion with landowners who live adjacent to the Hammond Trail, a local rail-trail.

After the informational presentations, the landowners were invited to stay for 'roundtable' discussions organized by geographic location along the corridor. Three small groups were formed to discuss West End Road/Warren Creek Road, Glendale, and Blue Lake/Korbel corridor issues. Each discussion table had a facilitator and a note taker present. The NRS project team received a great deal of useful information and input from these discussions.

Attendees raised several key issues at the landowner forum. Many of the primary concerns were common for landowners neighboring a proposed trail development. The input gathered at the landowner forum was one of the primary sources of information used to develop route alternatives.

Privacy and Safety Concerns

Landowners expressed concern over reduction of privacy on their adjacent properties. Some felt uneasy about the physical bisection of their property (where there is no existing fence) to accommodate a trail.

Several landowners were anxious about increased activity along a trail corridor, while others welcomed the idea of an alternative place to walk.

One resident stated a trail was not desired under any circumstances, and that the home in this instance would not have been purchased if disclosure of a potential future trail would have been made. However, the same landowner has since expressed support for a trail if alternative accommodations were made. Refer to Chapter 6 for information on alignment alternatives.

Several residents mentioned concern that formalizing a trail and promoting access to the corridor will increase unwanted activities and place a greater burden on adjacent landowners. Residents shared specific concerns regarding increased crime and declining safety, especially for small children and people living alone, caused by increased access to private properties. Some of the specific unwanted activities that landowners currently experience are dumping and littering, use by transient individuals, motorized vehicle use and trespassing for river access. Other residents voiced that they felt that a trail would generate more positive use along the currently unmanaged corridor which would deter illicit use.



Frequent trespassing along the corridor has prompted neighbors to attempt to manage use themselves.

Some of the potential solutions and ideas brainstormed by residents at the forum included:

- Trail designs that address and reduce existing negative behaviors on the corridor (see Chapter 5, Section C, Access Control);
- Recommendations for trail use be posted along the trail, including; carry-in/carry-out trash, respect for the adjacent property owners rights, respect for the adjacent agricultural lands;
- Trash receptacles placed along the trail and maintained regularly;
- Trail design that prevents illegal motorized use of the trail corridor and provides for emergency call boxes;
- Trail use by the general public would likely overwhelm the current illicit corridor use;
- The need for a development plan for the entire trail corridor – landowners do not want to see a dead-end or small segments built without good access to and from ending points; and
- Volunteer patrol or adopt-a-trail type of community involvement that provides a ‘watchful’ presence.

NRS shared information from studies showing that transforming a deserted out-of-sight corridor to a public trail is more likely to reduce opportunities for criminal behavior than invite it and that trails to be one of the safest places to be where the crime rate is minor in comparison to other locations (Rails-to-Trails Conservancy, 1998). Some types of trail designs that reduce unwanted behaviors are described in Chapter 5, and include: removable bollards that prohibit unwanted vehicular access; installation of trash receptacles at trailheads to reduce littering and dumping; signage that educates trail users about proximity of and need for respect of adjacent properties; ample trail width that provides for adequate sight distance; and fencing that is both appropriate for trail corridors and commensurate to adjacent landowners’ wishes.

Ownership

Three landowners claim that they, or their predecessors own the right-of-way or they dedicated a reversionary easement to the railroad. Landowners wanted to know if they would be paid for their land if ownership was established in their favor. Ownership issues were discussed in Chapter 2.

Liability

Residents shared concerns about their potential liability, or associated court proceedings if a trail were established, and a trail user became injured. One landowner shared that they did not want the possibility of being taken to court.

NRS shared what is known about landowner liability related to adjacent public trails: in general the law provides protection for trail owner/managers and adjacent landowners in the event of injury to trail users through provisions in the government code and case law. Private landowners are protected from liability unless they willfully or maliciously create or neglect to warn against a situation that would cause harm on the corridor (NRS, 2000).



There are several active agricultural operations adjacent to the corridor.

Agricultural Production

Several large parcels of land adjacent to the corridor are active dairy, beef and crop production operations. Three of these landowners fear that trail use will negatively affect their operations in numerous ways. Design recommendations made in Chapter 5, including fencing, trail routing, landscaping and trail user education, address these concerns. Some types of disturbance can still take place, regardless of precautions, however, depending on the level of responsibility taken on by trail users and the level of enforcement.

Trail Routing

During the meeting there was support expressed for the trail to leave the original corridor in Glendale and parallel SR 299 because of land use conflict concerns on the original corridor. These issues include incompatibility between trail users and existing industrial and agricultural sites; high-speed rural roadway traffic at corridor crossings; and proximity of numerous residential dwellings. These potential alternatives are discussed in Chapter 6.

Maintaining Access

Residents also mentioned concern about their current access being restricted by fencing or other trail designs. Fences along the corridor should be designed with adjacent landowners in mind, and their needs for gates and other accommodations (Chapter 5).

The success of any community project depends heavily upon the involvement and support from residents and community members. The residents along the A&M corridor have been involved from the beginning and have continued to express their concerns and hopes at each stage of the process. Of those adjacent landowners who provided input to this effort (approximately one third to one half of those who own adjacent parcels) a number of adjacent residents are opposed to development of a trail on the corridor, while others are supportive if their needs are met, and yet others are generally very supportive.



Residents currently use the corridor without permission in numerous places.

Individual Landowner Meetings

In response to specific issues discussed at the landowner forum, NRS staff and project engineers met with landowners individually or via phone to discuss route alternatives and other concerns. These individual meetings allowed the landowner to discuss the issues unique to their property and give input on which potential route alternative best suited their needs. By spending time discussing preferences with the landowners, the project team could assess the level of support for each alternative and use the information to assist in accurately ranking the potential solutions through criteria.

Relevant sections and/or CDs with digital files were sent to ten key neighbors to the corridor who had been communicating with the project team throughout the process. Several neighbors called, met with project staff, or sent letters regarding their input to the draft of this study. These responses were largely acknowledgement that relevant issues were addressed and written recommendations reflected them as such. One neighbor wanted to assure that his opposition to any type of trail development was noted; his specific concerns regarding current unwanted uses of the corridor, a lack of respect for corridor neighbors, and that neighbors' concerns should be more heavily weighted than the general public were also reflective of many other neighbors' concerns.

Refer to [Chapter 6](#) on trail alignment considerations for specific landowner sentiment regarding trail alignment alternatives.

A Neighbor's Outreach to Other Neighbors

Alex Kassatkin, a landowner adjacent to the A&M corridor on West End Road, provided consultation for this study regarding the needs of adjacent landowners and the interests of non-adjacent 'neighborhood' landowners. He interviewed some adjacent landowners, contacted others in the neighborhood of the corridor, and assisted at the landowner and public forums.

One particular interest and concern that some adjacent landowners have is that of the current 'unpermitted' use of the corridor and areas near the corridor, particularly in the vicinity of the Mad River. Mr. Kassatkin relayed interest in ensuring that development of a trail does not 1) increase these unpermitted uses of adjacent property and 2) limit private uses of these properties. His recommendation is that trail development efforts provide for appropriate fencing that does not limit landowner access to the trail or to their properties – for instance provision of gates where requested.

Additionally, Mr. Kassatkin reported that there was overwhelming support for trail development among those landowners near but not adjacent to the corridor on the south side of the Mad River. Residents along West End Road noted speeding to be a problem. Many of the landowners interviewed along West End and Warren Creek Roads are very supportive of providing an alternative route to West End Road for bicycle traffic.

Public Forum

A diverse cross section of residents has interest in the potential trail. Outreach can work as a tool to foster connections between advocates and non-supporters of the trail that bring to light issues that neighbors can address as a community.

A second meeting was held in September to provide an opportunity to share the research on the *Feasibility Study* to date and solicit input on route alternatives for the potential trail from anyone and everyone with interest in the trail.



Small groups discussed route alternatives in detail at the September public forum.

A combination of mailings, media contact and personal contact was utilized in an effort to reach everyone with an interest in the proposed trail. Again, all landowners were mailed postcard notification of the meeting. An additional 300 postcards were mailed to individuals who had registered prior interest in the trails at various community events. Media outreach included posters in community gathering places, notices in local newspapers, announcements on local radio stations and email notifications.

The following information was presented to the public at the meeting:

- Outreach and research to date;
- Results from agency meetings;
- Specific concerns of adjacent landowner; developed from the 'neighbors forum';
- Current information on the NCRA;
- Research on potential return of rail to the line;
- Results of the regional trails study developed for this project;
- Potential management and maintenance scenarios; and
- Alternative trail routes.

After the initial presentation the meeting broke into small groups in order to discuss and seek input on alternative routes and planning recommendations. These groups were organized by planning reaches, discussed in detail in Chapter 6. Approximately 50 citizens attended the meeting. The public forum provided an opportunity to continue the dialogue with concerned adjacent landowners and present the progress of the project to additional concerned citizens.

Much of the public input gathered at this meeting addressed trail alignment alternatives and is summarized in Chapter 6.

Media Coverage

During the course of the project newspapers and radio reported on issues associated with the proposed Annie & Mary Rail-Trail and this *Feasibility Study*. Following the public meeting in September, the *Arcata Eye* published a front page article regarding the progress of the *Feasibility Study*.

During the November 2002 elections, the potential trail was mentioned numerous times by both 5th District Supervisor candidates and by Blue Lake City Council candidates in newspaper articles as a very important issue for the region. All of those elected were supportive of A&M trail development.

B2. Public Survey

Methodology

A public survey was sent to a random sample of 500 registered voters in the Humboldt Bay/McKinleyville/Blue Lake area in May of 2002. The survey was developed by faculty and graduate students at Humboldt State University's Department of Environmental and Natural Resource Sciences, with assistance from NRS planners, the Rails-to-Trails Conservancy (RTC), and Alta Planning and Design (Alta). The primary goal of the survey was to formally establish the level of public support for multiple-use trail development on the A&M corridor.

Results

A complete description of the methods used for distributing and analyzing the survey, along with a complete report of all of the survey results, is included in Appendix C. The following information is a summary of the most significant findings from the survey addressing the proposed Annie & Mary Rail-Trail and trail and open-space issues in the Humboldt Bay region.

Survey Results Regarding the Proposed Annie & Mary Rail-Trail

The most significant finding from the survey was residents' overwhelming support for the development of a trail along the A&M corridor. Nearly 7 in 10 of the respondents said they were supportive of such an effort.

In addition, residents agreed overwhelmingly that a trail along the corridor would improve the quality of life of Humboldt Bay region residents (75% agreed with this statement).

Eighty percent of respondents indicated they would use the trail at least a few times a year, with nearly 3 in 10 saying they would use it at least a few times a month.

When asked what type of activities they would use a trail for on the A&M corridor, walking and bicycling were mentioned most frequently (61% of respondents said they would like to walk; 49% said they would like to bicycle). Other top choices (in order of ranking) include bird/wildlife viewing, dog walking, and running/jogging. Residents indicated they would most like to see the trail surface unpaved (36%), followed by those who had no preference (20%). 17% desired a paved surface, while 10% preferred a hard surface such as crushed rock.

Residents chose a variety of desired amenities they would enjoy along the trail if it were constructed. The most desired amenities were benches (63% of respondents), followed by restrooms (53%), parking (43%), interpretive signs (39%), drinking fountains (35%), and picnic areas (32%).

It appears that many Humboldt Bay region residents had not heard about the proposed trail development along the corridor; nearly 6 in 10 respondents said that receiving the survey in the mail was the first they had heard about the proposal.

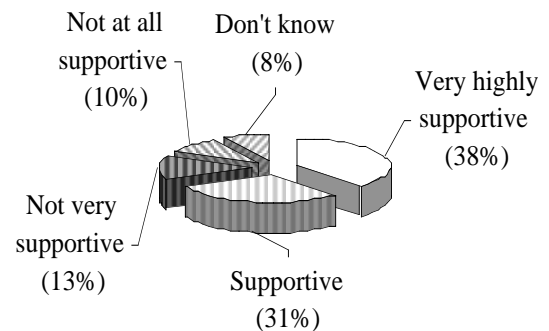


Figure 4.1. Survey responses regarding support for development of a trail along the Annie & Mary corridor.

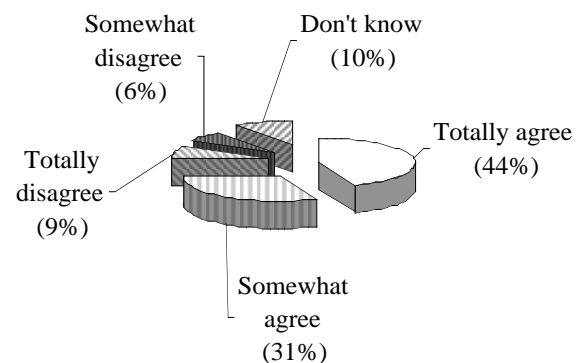


Figure 4.2. Survey response regarding whether a trail along the Annie & Mary corridor would increase quality of life.

Survey Results Regarding Humboldt Bay Region Trails and Open Space

Similar to the results from the set of questions addressing the Annie & Mary Rail-Trail proposal, residents are very strongly supportive of developing new trails in the Humboldt Bay region. Nearly 7 in 10 respondents considered new trail development a high or very high priority.

Respondents reported that recreational and commuting trails were important contributors to the region’s quality-of-life, with nearly 9 in 10 indicating they were important or very important contributors.

Over 40% of the survey respondents said they would be willing to volunteer their time for trail patrols and maintenance activities.

Residents described a number of benefits they felt current/future trails provide, with nearly all of the survey respondents (93%) citing exercise/better health, followed by scenic views (80%), wildlife viewing (79%), opportunity for non-motorized transportation (65%), protection of natural areas (61%), and increased property values (36%).

This strong support for trails may at least be partially explained by the fact that Humboldt Bay region residents appear to be very frequent users of existing trails. Nearly 80% of the respondents said they used trails in the region at least a few times per year, and over one-half reported that they use trails several times per month. Respondents said that they most frequently use the trail system at the Arcata Marsh and Wildlife Sanctuary, with 69% reporting they had used trails there at least once in the past 12 months. The next most popular trails that respondents said they used at least once in the past year included the Eureka Waterfront (57%), Hammond Trail (50%), Arcata Community Forest (50%), Sequoia Park (45%), and the Manila Dunes (41%). The largest percentage of respondents said they used these trails primarily for walking (70%), followed by bicycling (30%), walking dogs (25%), bird/wildlife viewing (24%), and running/jogging (20%). Nearly 25% of the respondents said they walk or bicycle to commute to work on a regular basis and average 4.25 trips a week.

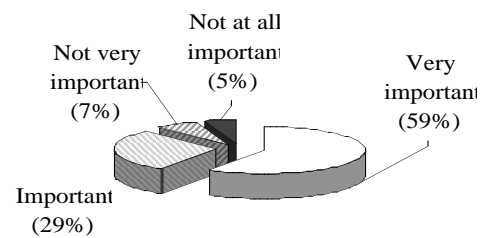


Figure 4.3. Survey response regarding how important trails are to the quality of life in the region.

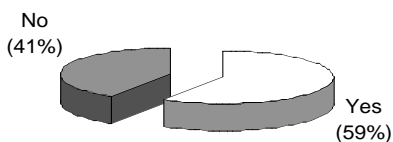


Figure 4.4. Survey responses regarding support for paying a higher rate of sales tax to help fund trail development and maintenance.

When asked where respondents would most like to see new trails constructed, the three most popular responses were the Arcata/Eureka corridor, the Arcata/Blue Lake corridor, and the completion of the Hammond Trail.

Survey results indicate the public would approve of a slight sales tax increase to support trail development in the Humboldt Bay region. Of the 59% of respondents who said they would support a higher rate of sales tax to pay for purchases, a 1¢ increase was the most popular choice (when presented with a choice between 0.10¢, 0.25¢, 0.5¢ or 1¢).

Though not enough support to formally pass a tax increase initiative, it is significant that this support was given, considering that respondents had little information about the details of such a proposal. An increase greater than or equal to \$0.25 was supported by 76% of those who supported a sales tax increase.

Only 43% indicated they would support a property tax increase to fund trail development. Of those supporting a property tax increase, an increase of \$2/year per property assessment (the lowest available option on the survey) was the most popular choice.

Support for an increase in sales tax for a program of *open space acquisition and management* was lower than for a *trail acquisition* program (only 43% would support an open space tax increase vs. 59% for a trail tax increase). Support was slightly less for a property tax increase to fund open space acquisition and management (only 39% vs. 43% support for a property tax increase for trails).

Survey results indicate that Humboldt Bay region residents, as represented by a 30% response, are highly supportive of new trail development in the region, overwhelmingly agree that trails improve the region's quality of life, are frequent users of the region's existing trail network, and would most like to see new trails constructed in the Arcata/Eureka and Arcata/Blue Lake corridors.

C. Agency and Organization Outreach

A variety of management scenarios could be implemented for the A&M Rail-Trail. Many of these would involve several regional agencies. The NRS project team worked with Alta Planning + Design and the RTC to gather input from all of these potentially involved agencies. The management of any future trail is one of the most significant matters of the *Feasibility Study*. Agency outreach to determine potential interest and concerns included:

- An informational meeting for agencies with interest in the Annie & Mary corridor was held on December 7th, 2001;
- Alta Consulting completed a telephone survey with targeted agencies;
- Conference calls with project team and NCRA to apprise the agency of ongoing project issues;
- Meeting with NCRA and Caltrans on specific issues
- A second informational meeting held for the general public and agency representatives, on Thursday, September 12th, 2002.

Introduction to the Project

An initial meeting was held December 7th, 2001 in Arcata following the landowner forum. The goal of the meeting was to inform interested agencies about the scope of the *Feasibility Study* and introduce them to the project team. Representatives of Caltrans, City of Arcata, Humboldt Bay Municipal Water District, NCRA, Northcoast Interpretive Logging Association, Blue Lake Rancheria, and the Humboldt County Association of Governments attended.



The Water District maintains a pipeline on the Mad River Bridge, and needs help maintaining the bridge.

NRS shared information about the *Feasibility Study* effort, research needs, planning parameters, likely management possibilities, and information gathered from the landowners' forum. Consultants from RTC and Alta shared information about management entities and other rail-trail examples around the state that could be helpful to this project.

Agencies were invited to ask questions and share input. Most questions were regarding NCRA involvement and their interest in potential trail along the corridor.

Potential Management Partners Outreach

As a first step in researching potential management and maintenance scenarios, Alta Planning + Design staff conducted a series of interviews with Humboldt County Public Works, Arcata and Blue Lake City staff, and Humboldt Bay Municipal Water District. For a complete list of questions and a summary of responses, refer to [Chapter 7](#).

A second meeting was held in September of 2002 with agencies that have jurisdiction along the rail corridor. Representatives of the City of Arcata, City of Blue Lake, Humboldt County Public Works and 3rd District Supervisor, and Humboldt Bay Municipal Water District were presented with a general overview of research to date. The primary focus of this meeting was to discuss research on potential maintenance and management scenarios and gather input and suggestions from agency staff.

The 3rd District County Supervisor was particularly interested in what had been done to address the concerns of property owners adjacent to the corridor. NRS staff shared the route alternatives and trail design ideas that were created by project team engineers in response to input from landowners.

The City of Blue Lake, Humboldt County Public Works and Humboldt Bay Municipal Water District all expressed concern and interest in maintaining the Mad River Bridge. This bridge supports the only water pipeline for the area's municipal water pumped by HBMWD. If a proposed trail is built, all interested parties would like to see some agreement and design that allows for maintenance of the water pipeline on the bridge. The HBMWD is particularly interested in finding a partner or partners to assist with maintenance of the bridge. County staff also expressed concern about the cost of maintaining large structures such as the Mad River Bridge and the wooden trestles along the corridor.

All parties attending were generally supportive of the trail concept, but expressed concerns about funding for maintenance over the long term.

Outreach on Specific Issues

North Coast Railroad Authority

Since the beginning of interest in utilizing the A&M corridor for trail development, the NCRA has been consulted about potential issues regarding ownership, liability and the compatibility of trail development with potential return of rail service. For this study, outreach to the Authority was mainly to secure permission to access the corridor for research purposes and to coordinate research efforts on issues such as potential railbanking of the corridor. NRS communicated primarily with Boardmember Sears, who in turn provided updates to the Board regarding project updates.

Caltrans

A meeting was held in August 2002 with Caltrans District 1 staff to discuss possible re-routes of the trail corridor and potential management strategies. The A&M project team determined that one of the viable options for an alternative route is in the state highway right-of-way along SR 299. These alternatives are described in [Chapter 6](#).

The meeting informed Caltrans of the recommendation in the study. Caltrans staff noted that all other options must be explored and deemed unfeasible for the right-of-way to be considered. Caltrans staff advised that using the state right-of-way may require breach of 'controlled access' along SR 299. This would require permission from the California Transportation Commission.

Other concerns included maintenance and ownership of the trail if it were located in the state right-of-way. If the alternative using the SR 299 right-of-way is chosen all management scenarios must include explicit agreements with Caltrans. Any work within state right-of-way will require an Encroachment Permit from the Caltrans District 1 office in Eureka.

In response to the draft of this study, Caltrans staff wrote that

We support the integration of a multi-modal transportation network into the existing transportation infrastructure. Modal options provide convenient choices for many short and long end trips, and enhance the local quality of life. Caltrans will continue to work with Redwood Community Action Agency and other local agencies to develop a safe, multi-modal transportation system

Blue Lake Rancheria

In August of 2002, the Rancheria opened a new casino facility. The facility is close to the proposed trail corridor. During an agency meeting held in December of 2001, a representative of the Rancheria mentioned potential interest in returning rail service for passenger service to the casino, however, this is not the primary interest of the Rancheria.

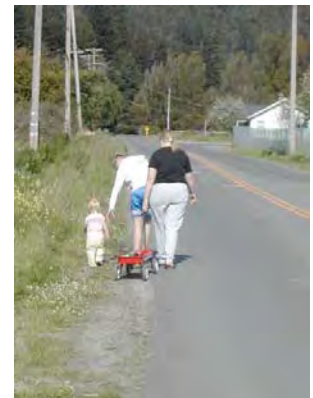
Representatives of the tribe have shared their interest in and concern about the proposed trail. Major concerns include disturbance of cultural sites, interpretation of historic native use of the area along the trail, consistent monitoring and inclusion during all phases of the project, but especially during the construction phase. They noted an interest in cooperative management native riparian species.

Both the Blue Lake Rancheria and Table Bluff Reservation-Wiyot Tribe should be consulted in the development of an interpretive program for the corridor. The tribes can provide the best historical information regarding the use of the area prior to European settlement.

The Rancheria would be a valuable partner and advocate throughout the planning process. The trail may provide the tribe an opportunity to promote stewardship of resources and education regarding cultural practices. Tribal representatives have expressed interest in potential assistance with and sponsorship of the trail.

The Friends of the Annie & Mary Rail-Trail

The Friends of the Annie & Mary Rail-Trail (Friends) shared input and concerns shared at informational booths they host at local events such as Annie & Mary Day and the Blue Lake Blues Festival. The Friends report that most input they receive is positive. They are occasionally approached by concerned or angry adjacent landowners, and conversely by landowners who would like a place to safely walk or ride in their neighborhoods. They are not sure if others who do not support the idea of trail development avoid their outreach efforts or if many adjacent landowners do not attend these events. With this consideration, however, the overwhelming majority of public contacts they make are in support of trail development.



Some corridor neighbors would like a safer place to walk or ride.

D. Action Items

- All future action regarding potential trail development should regularly and constructively **involve corridor neighbors**.
- The **County's current update of General Plan policies** regarding trail development should reflect the level of public support for development of the Annie & Mary and other regional multiple-use trails. Other local governments should also be advised of this indicator of public support.
- Consideration should be given to the **public's apparent willingness** to financially support development of multiple-use trail systems through higher sales taxes. More extensive research on this topic should be conducted, and information shared with the County and other potential trail managers in the region.

This chapter provides specific design and implementation guidelines and standards to ensure that the Annie & Mary (A&M) Rail-Trail is constructed consistent with the highest standards currently available in the United States. Ultimately, the A&M Rail-Trail must be designed to meet the safety of trail users.

Trail planning, design, and implementation standards in this document are derived from these sources:

- California Department of Transportation (Caltrans), *Highway Design Manual*, Chapter 1000: Bikeway Planning and Design, 2001.
- American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 1994.
- AASHTO, *Guide for the Development of Bicycle Facilities*, 1999.
- U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), *Manual of Uniform Traffic Control Devices (MUTCD)*, 2000.
- USDOT, FHWA, *Selecting Roadway Design Treatments to Accommodate Bicycles*, 1994.
- USDOT, FHWA, *Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice*, 1994.
- Institute of Transportation Engineers (ITE), *Design and Safety of Pedestrian Facilities*, 1994.
- Rails-to-Trails Conservancy, *Rails-with-Trails: Sharing Corridors for Transportation and Recreation*, 1996.
- Rails-to-Trails Conservancy, *Trails for the 21st Century: Planning, Design, & Management Manual for Multi-Use Trails*.
- Pitkin County, Colorado's *Trails Design and Management Handbook*, 1994.

The sources listed above provide details on many aspects of trails, but a) may contain recommendations that conflict with each other; b) are not, in most cases, officially recognized “requirements”; and c) do not cover all of conditions on most trails. Except for Caltrans bikeways guidelines, all design guidelines must be considered simply as design resources for the A&M Rail-Trail, to be supplemented by professional judgment of trail designers and engineers.

A. Recommended Trail Standards

The California Department of Transportation (Caltrans) has developed specific design guidelines in the Highway Design Manual for bikeways, including bike trails, bike lanes, and bike routes. It is recommended that the A&M Rail-Trail be located off-street, and accordingly should be constructed to a minimum of Class I bikeway standards wherever possible. According to Caltrans, a Class I bikeway (bike trail) provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians (Caltrans does not address equestrians here, however it is proposed the A&M Rail-Trail accommodate them) with cross-flow minimized.

Where the A&M Rail-Trail alignment would require an on-street route (such as a potential segment along Hatchery Road in Blue Lake, see Chapter 6 section G), a combination of Class II bike lanes and sidewalks is recommended. [Figure 5.1](#) provides an illustration of Class I (shared-use) trails, Class II bike lanes, and Class III bike routes.

Caltrans standards are intended to be a guide to engineers in their exercise of sound judgment in the design of projects. Design standards should meet or exceed the Caltrans standards to the maximum extent feasible. Lower standards may be used “when such use best satisfies the concerns of a given situation.” Mandatory design standards, identified with the word “shall,” are those considered most essential to achievement of overall design objectives. Advisory standards, identified with the word

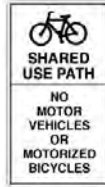
“should,” are important but allow for greater flexibility. Permissive standards are identified by the words “should” or “may” and can be applied at the discretion of the project engineer. Designs that deviate from the mandatory Caltrans design standards must be approved by the Chief of the Office of Project Planning and Design, or by delegated Project Development Coordinators.

A1. Width and Surface

The A&M Rail-Trail should serve a variety of trail user groups, and should support emergency and maintenance vehicle access. In a 1998 resolution of support for trail development research, the NCRA Board requested that the corridor not be paved, if developed as a trail, to reduce difficulties with any potential for return of rail service. It is recommended here that surfacing be accomplished with a phased approach: initially, the trail surface should be relatively smooth, but not paved. If paving becomes more acceptable in the future, it is desired primarily to improve trail function for bicycle transportation.

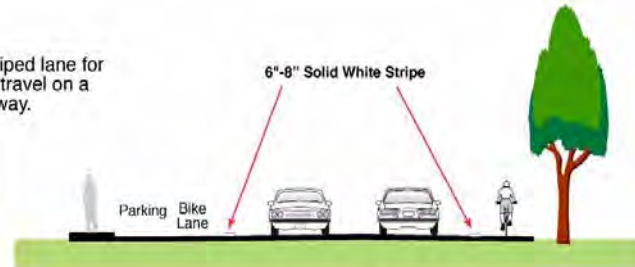
Shared Use Path

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.



Bike Lane

Provides a striped lane for one-way bike travel on a street or highway.



Bike Route Signed Shared Roadway

Provides for shared use with pedestrian or motor vehicle traffic, typically on lower volume roadways.



Figure 5.1. ‘Shared-use’, or multiple-use paths are part of the state’s transportation system.

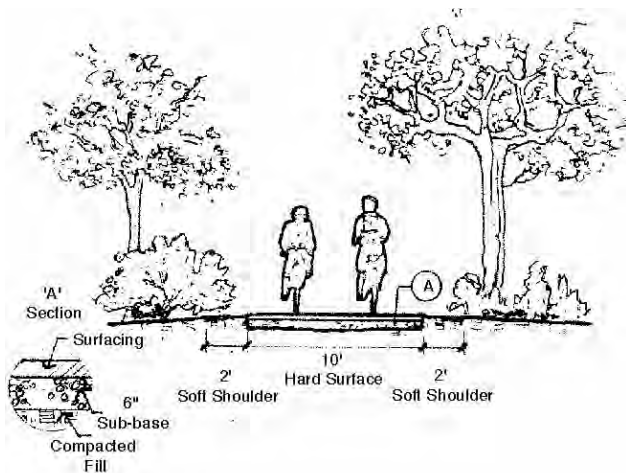


Figure 5.2. A multi-use trail provides enough width for different trail users to interact safely.

Trail Width

The recommended minimum trail width for an unpaved A&M multi-use trail is 10 feet with a 4-foot shoulder (4 feet on one side only or two feet on each side). This width is depicted in Figure 5.2. If a paved surface is added later, an adequate 10-foot base will already be in place, with space for four feet of unpaved shoulder. Adequate width will allow the greatest long-term flexibility for the most trail users.

The recommended minimum width for paved multi-use trails in California is 8 feet, with 2 feet of lateral clearance and 8 feet of vertical clearance from objects like fencing or vegetation. If the trail is to support relatively high volumes of bicyclists or skaters, or if maintenance vehicles

will be using the trail on a regular basis, a minimum width of 10 feet is recommended with the same lateral and vertical clearances. If feasible, two- to four-foot-wide unpaved shoulders with a compacted surface (such as ‘crusher fines’) should be located on each side of the paved surface to accommodate joggers and others who prefer a softer surface.

As a frame of reference, some users of the Hammond (Rail-) Trail in McKinleyville have complained to NRS staff that the 8-foot paved width is not sufficient for multiple uses to interact safely and comfortably on weekend and good weather days when there is heavy use of the trail.

Rail-With-Trail

One option for the A&M corridor that would provide for both the potential of future rail service as well as a multiple-use trail is a rail-with-trail (RWT) design. The California Utilities Commission requires that the outside edge of a RWT must be a minimum of 8.5 feet from the centerline of the adjacent track – and 9.5 feet on a curve (FHWA, 2001). As noted in [Chapter 2](#), the Annie & Mary corridor is not wide enough to safely provide for simultaneous operation of a rail and a trail.



Due to the lack of necessary width for a rail-with-trail, like this one in Portland, Oregon, this design was not considered for the A&M corridor.

Surface

Consideration of the appropriate trail surfacing for the A&M Rail-Trail has many implications, including: trail user experience, trail accessibility, long-term maintenance, and funding availability. The trail surface – whether gravel, asphalt, concrete, or some other material – will have a significant impact on the character of the trail. Different surfaces afford different levels of accessibility in dry and wet weather. Different surfaces also have recognized maintenance intervals in specific climates. Finally, federal non-motorized transportation funds are available only to fully-accessible, paved trails that provide a transportation function.

Surfacing for an A&M Rail-Trail will require additional considerations beyond those typical concerns outlined above. First, the A&M Rail-Trail would be subject to the requirements of the North Coast Railroad Authority (NCRA). The NCRA has requested that any proposed trail facility for the railroad right-of-way not be paved. Second, the A&M corridor follows the Mad River, a rural setting with significant ecological values.



This relatively new segment of the Hammond Trail was surfaced with crushed shale.

Recommended surfacing material for the A&M Rail-Trail is compacted ‘crusher fines’. Locally available crusher fines include crushed shale which, when compacted, provides a reasonably hard trail surface. This material is a by-product of industrial rock refining that is created when larger diameter rock is mechanically crushed. The resulting material is small in diameter (and for trail development, should be 3/4-inch-minus in diameter), and when compacted, adheres to itself to create a solid trail surface. Crusher fines must be installed upon a properly engineered sub-grade material and drainage system in order to maintain a dry, low-maintenance trail surface. One challenge associated with this type of material is

the potential for insufficient quantities to surface large areas at one time. Locally, surfacing of the Hammond Trail segment between the north end of Letz Avenue and the Caltrans Vista Point to the north consists of crusher fines.

Another potential surface type is a cohesive ‘soil binder’ that provides a relatively smooth surface. Soil binders are usually naturally cohesive (often non-toxic) materials that are mixed with native soil and aggregate to form durable surfaces. Application is much like that of cement. The National Center for Accessibility references and promotes one soil binder in particular (fabricated by Stabilizer Solutions, Inc.) as “one soil surface that is firm and stable as an alternative to concrete, asphalt, or decking materials”. Challenges associated with this type of material include: difficulty (and potentially higher cost) with mixing large quantities, non-suitability for application during wet weather, and a shorter lifespan than asphalt if used to support heavy loads such as maintenance and emergency vehicles.

A surface of crusher fines or soil binder will accommodate walking, jogging, equestrian use, and bicycling (high pressure tired road racing bicycles may have trouble, particularly with crusher fines, depending on seasonal and localized conditions). The U.S. Department of Transportation has tested the wheelchair accessibility of compacted and hardened dirt surfaces but crusher fines were not evaluated in this test (USDOT et. al, 2000). Crusher fines can provide a wheelchair accessible surface in certain dry conditions, but this level of accessibility is unlikely under the wet conditions prevalent in Humboldt County.



With or without paving, a soft shoulder is important for those who do not want to use a hard or paved surface.

Most high use multi-use trails in California are paved with asphalt or concrete to provide for a wide range of trail uses, ensure accessibility for people with disabilities, and to minimize maintenance costs. In the event that the A&M Rail-Trail attracts significant use as a commuter trail or high-use recreational trail during peak weekend days, it may be desirable to pave the trail in the future.

A2. Structural Section

Multiple-use trail construction should be similar to roadway construction, with sub-base thickness to be determined by soil condition – expansive soil types require special structural considerations and treatments – and projected use and load types. The recommended structural section for the A&M Rail-Trail is illustrated below in [Figure 5.3](#). The current condition of the existing railroad bed varies considerably due to drainage conditions and maintenance history.

Generally, the existing A&M corridor provides more than adequate width for the trail. The recommended sub-base should consist of ‘Class 2’ well-draining large diameter gravel. In most places, minimal to moderate levels of base material already exists on much of the corridor as a remnant of railroad facilities. The trail tread, as discussed earlier, should consist of locally available crusher fines or native materials treated with a ‘soil binder’ to provide a relatively smooth, well-draining surface of sufficient hardness to accommodate a wide range of trail users.

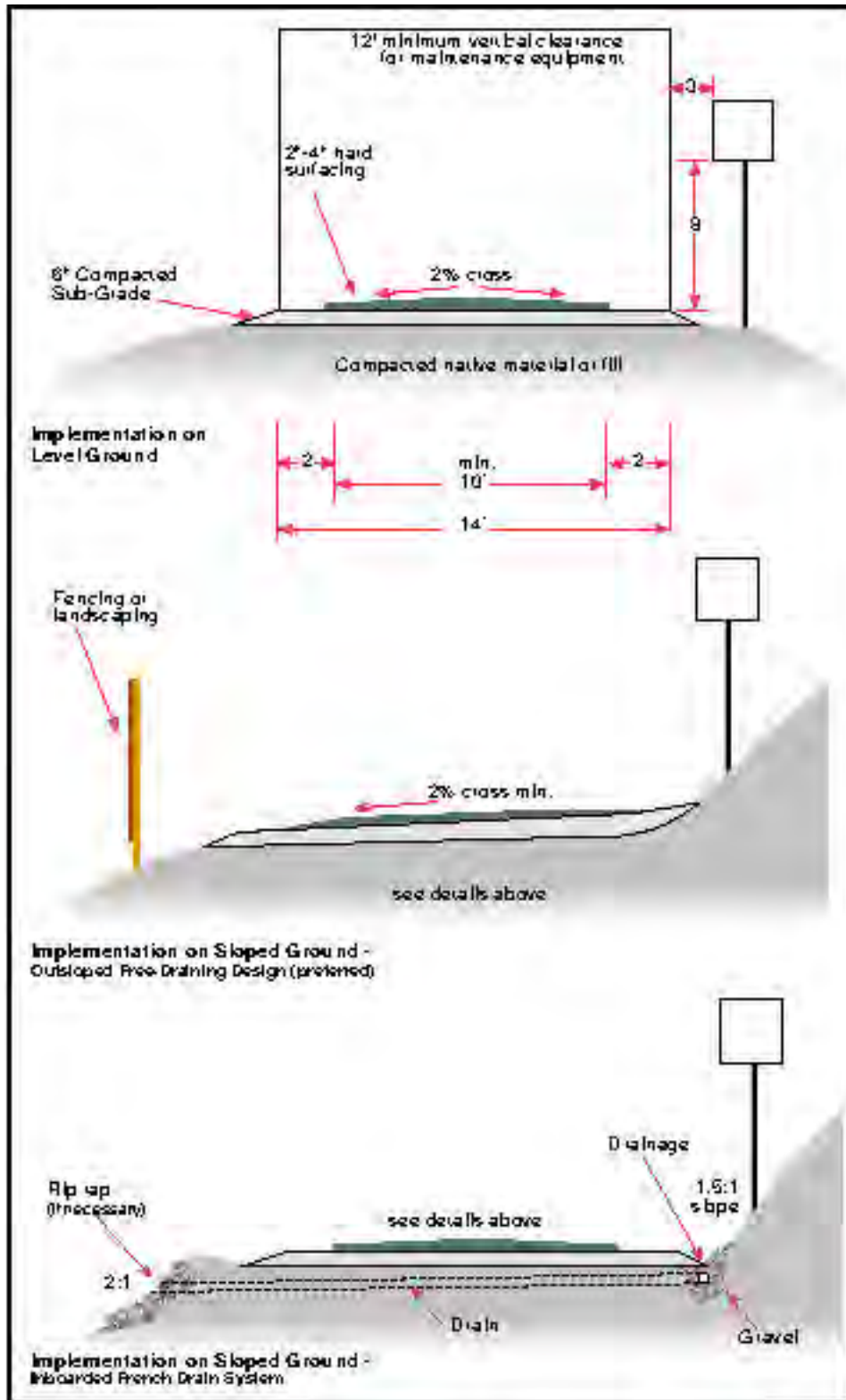


Figure 5.3. Structural cross section options for level and sloped ground.

A3. Design Speed

For unpaved trails, design speed (a speed selected to establish specific minimum geometric design elements for a section of trail or roadway) is not a primary consideration, but speed differential of various trail user groups is always an important issue in trail planning. Signage, surfacing and even volunteer patrols can help minimize the difference in speed between the fastest and slowest trail users.

According to Caltrans guidelines, the minimum design speed for paved bikeways is 20 miles per hour, except on sections where there are long downgrades (steeper than 4%, and longer than 500 feet). Speed bumps or other surface irregularities should never be used to slow bicycles. Additional detail on design speed and related details is included in the following three sections.

Horizontal Alignment

Recommended curve radii and super elevations (banking) can be calculated per equation 1003.1C in Chapter 1000 of the Caltrans Highway Design Manual. A 2% cross slope should not be exceeded. The A&M is a linear corridor, and sharp curves are generally not anticipated, except at proposed trail entrance/exit points, some alternative route alignments and at some roadway crossings.

Lateral Clearance on Horizontal Curves

Stopping sight distance, stopping sight distance on horizontal curves, and lateral clearance can be calculated using equations 1003.1D, E, and F in Chapter 1000 of the Highway Design Manual. As a linear corridor, sight distance is generally not expected to pose a problem except in places noted above.

Gradients

Steep grades should be avoided on any multi-use trail: 5% is the recommended maximum gradient. Steeper grades can be tolerated for short distances (up to about 500 feet). The A&M corridor is nearly flat for most of the alignment, although several of the alternative alignment options ([Chapter 6](#)) require negotiation of steep hillsides and grade changes between the railroad right-of-way and adjacent alignments. These areas will require site-specific engineering to develop appropriate alignments that minimize trail gradient.

A4. Drainage

Most of the A&M corridor was constructed nearly a century and a half ago. Many drainage features have been upgraded since then, but there is at least one ‘Humboldt crossing’ drainage structure left from an era when logs were placed lengthwise in drainages to support fill above and allow some level of drainage flow. The rail bed has many relic drainage problems that can and are resulting in erosion. Several segments of the corridor do not drain well, and ‘ponding’ occurs in these locations.

Site-specific design treatments for drainage are listed in [Appendix D, Attachment 2](#), ‘Trail Description and Drainage Recommendations’. Recommendations include installation of French drain systems, outsloping the trail, and replacement of culverts. A 4% cross slope will reduce many drainage issues on a multiple-use trail, except along cut sections where uphill water must be collected and directed to a system that directs water away from the corridor.



Lack of maintenance attention threatens the integrity of corridor infrastructure – and potentially that of downstream resources.

A5. Intersections and Crossings

The various trail planning, design and implementation standards consulted for preparation of this document do not provide extensive guidance for rural roadway crossings. The A&M corridor crosses primarily low-volume rural (Humboldt County-maintained) roadways and private gravel access roads and driveways. These roadways are substantially different from urban arterial and residential street crossings for which most standard crossing design recommendations have been developed. The same standard analytical tools and thresholds should be used when developing rural roadway trail crossings, including: traffic volume, traffic speed, and visibility for both trail users and motorists.

In general, trail crossings should occur at established pedestrian crossings wherever possible, or at locations completely away from the influence of intersections. Crossings isolated from intersections or other traffic controls should address right-of-way for the motorist and trail user through use of ‘Yield’ or ‘Stop’ signs, or traffic signals that can be activated by trail users. Trail approaches at intersections should always have ‘Stop’ or ‘Yield’ signs to minimize conflicts with autos. “Trail Crossing” roadway stencils and signs may be placed in advance of trail crossings to alert motorists.

Section E of this Chapter, ‘Specific Design Treatments’, addresses design recommendations for particular road crossing intersections. ‘Conceptual Road Crossing Diagrams’ are provided in [Appendix E](#) to address crossing-type specific design recommendations for all road crossings along the corridor and alternatives.

A6. NCRA Rail-Trail Planning and Design Guidelines

NCRA representatives noted early on in communications about this project that they have had numerous queries about rail-trail development, and that establishment of some standards toward this end would help them work with these requests, including the A&M corridor. Consequently, Alta Planning & Design prepared a draft of recommended rail-trail planning and design guidelines, based on similar documents they have prepared for other rail and trail agencies ([Appendix H](#)). Existing NCRA policy for use of the right-of-way is provided in [Appendix K](#).

B. Recommended Structural Treatments

One of the most significant issues to consider in an assessment of trail feasibility on the A&M corridor is the half dozen wooden trestles and steel truss bridge that will require some level of structural retrofit as well as surface modifications for trail use. These trestles and bridge were probably built circa 1930 (Johnson and Wood, 1993). Structural assessment of and trail design recommendations for the trestles and bridge are included in the Engineering Evaluation Report by Spencer Engineering and Construction Management, Inc., [Appendix D, Attachment 1](#).

B1. Trestle Treatments

There are six existing wooden trestles (including two approaches to the Mad River bridge) and two short wooden bridge span sites on the A&M corridor. These structures are in various stages of disrepair and



This trail/road intersection includes a median refuge, bollards and trail stop signs.

range in their ability to function as trail support facilities. Beyond their functional value, however, the trestles also possess historic value, and are the ‘landmarks’ that help locals identify with the location of the A&M corridor. Additionally, they are some of the only wooden railroad trestles remaining in public view on the north coast.

Of the four major trestles on the corridor, three are adjacent to or above Warren Creek Road: the Warren Creek trestle is 490 feet long, the Schoolhouse trestle is 136 feet long, and the Green Tank trestle is 269 feet long. The Minor Creek Trestle is adjacent to Glendale Drive and is 708 feet long. Just west of the Minor Creek Trestle is the former site of a 21-foot span wooden bridge over Mill Creek. In downtown Blue Lake, the 25-foot span wooden Powers Creek Bridge was also destroyed during high streamflow events.



The Warren Creek Trestle spans Warren Creek Road.

The following is a summary of the Engineering Evaluation ([Appendix D, Attachments 1 and 3](#)). Beyond structural rehabilitation and addition of deck and railing to trestles addressed below, supplementary design considerations for the trestles and bridges along the A&M Rail-Trail include: the visual impact of required trail safety features to the historic structures, the functionality of required trail safety features, and the influence of decking materials on trail user experience.

Structural Trestle Retrofits

It is unclear without more extensive research exactly what year/s these trestles were constructed, but they are approximately 70 years old. Improvements to some trestles were made in the 1980s to replace specific structural members with creosote piles and treated timber bracing. A consultant to Eureka Southern completed an analysis of structural renovation needs and costs in 1991, and that report was used as a basis for research conducted for this study. While the trestles would need to be completely replaced for rail use, they only need renovation to support trail use.



A wooden trestle over Prairie Creek, adjacent to State Route 101, that was reconstructed for a trail.

The Warren Creek, Schoolhouse and Minor Creek trestles will need substantial structural repair to function as trail support facilities. All reinforcements (mostly bents) added to these structures in the 1980s are sound, however the condition of many of the remaining bents, and some braces and stringers, require replacement. Some of the Warren Creek trestle footings and one Schoolhouse trestle abutment need replacement. All of the lateral and cross bracing on the Minor Creek trestle must be replaced.

Deck Treatments

Decking is required on the existing trestles to provide a smooth trail tread ([Figure 5.4](#)). Decking options include timber decking (Douglas fir is most commonly used in Pacific Northwest trestle retrofits), steel perforated deck, concrete (as on the Hammond Trail Mad River bridge) or asphalt, or composite material (such as Trex or a comparable product). These design details are provided in [Appendix D, Attachment 3](#). Recent innovations used in Pierce County, Washington include pavement over glue-lam. All of these materials have been used on previous trestle retrofits for rail-trail facilities.

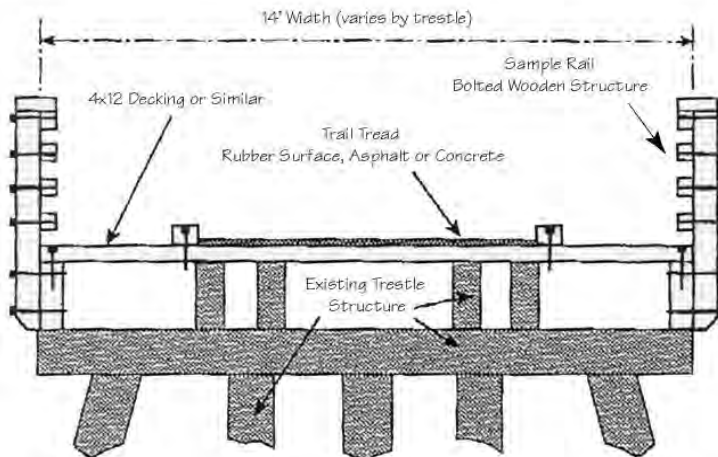


Figure 5.4. Standard trestle decking cross-section.

steel or concrete, but more expensive than wood. Composite materials are usually lighter, and can also cost less to maintain, particularly in coastal and wet climates. These materials were not considered in an in-depth evaluation of decking alternatives, but are an option.

Additionally, products such as Rumber (Eugene, OR) and others are manufactured as an HDPE wood/rubber composite product that is anti-slip and extremely durable in a range of outdoor conditions. This range of products is a dense rubber that can withstand any type of use – it is used on shipping decks, equipment transport trailers and other industrial applications. It is suitable for equestrian and wheel chair use, can be used on decks and bridges, and is generally made from waste tires. Again, this material was not considered in an in-depth evaluation of decking alternatives, but is an option.

Safety Railing

Safety railings are required to accommodate pedestrians, bicyclists and other trail users on the existing elevated trestles along the proposed A&M trail. Wooden railings, as depicted in [Figure 5.4](#), are the recommended treatment for railing on A&M corridor trestles retrofitted for trail use.



Wooden decking and railing on the McKerricker rail-trail in Mendocino County.

B2. Bridge Treatments



The steel truss A&M bridge spans 505 feet across the Mad River.

The Mad River Bridge is one of the most significant trail development considerations on the corridor. A structural analysis of the bridge is addressed as part of an Engineering Evaluation in [Appendix D, Attachment 1](#). The following is a summary of that report.

The bridge consists of three riveted, through-span steel trusses that span a total of 505 feet. The truss base is constructed of two one-foot wide steel I-beams spaced six and a half feet on center and is supported by two concrete piers. Timber trestles are used for the approaches to the steel structure at each end of the bridge. The southwestern trestle

(25 feet long) consists of one timber bent and a timber abutment. The northeastern timber trestle (91 feet long) consists of seven timber bents spaced approximately twelve feet on center and a timber abutment.

Structural Bridge Retrofits

During field investigations, the Mad River Bridge did not show signs of structural damage. The concrete piers supporting the bridge appeared to be sound, with no surface cracking or weathering visible. However, the bridge is showing signs of rusting around the rivets and floor beams, as well as chipping paint. Though the bridge should eventually be re-painted, this is not considered essential for the bridge to accommodate a trail.



The Hammond Trail Mad River Bridge is just downstream, close to the beach, and of similar steel truss construction – and is substantially more corroded than the A&M bridge.

Field investigation results indicate that the concrete bridge footings appear to be in good condition. The driven base of the concrete piers in the high flow range of the Mad River may have scouring damage along the streambed. The scope of this project did not include a complete assessment of footing stability.

Scour around the footings may require repair or armoring below the water line. A 1999 analysis of bed elevations of the lower Mad River notes that river bed elevations have remained relatively constant since 1970 up- and downstream of the bridge. Bed elevation at the bridge is slightly lower, likely due to scour around footings (Streamline, et. al., 1999). This is the only known study in recent times to come even close to assessment of footing stability. It is assumed that some work to this end will be necessary, and a rough ‘placeholder’ amount is identified in the project budget.

Deck Treatment

Bridge decking is subject to the same traction and maintenance requirements as for trestle retrofits. The Mad River Bridge will require a high traction, low maintenance deck to provide for safe trail use. As above, steel and concrete form decking is recommended in the Engineering Evaluation ([Appendix D, Attachment 3](#)). Other options for decking are also as noted above. Recent innovations used in Pierce County, Washington include pavement over glue-lam.



The historic Klamath River bridge was reinstalled for City of Folsom bikeway crossing at Lake Natoma. The retrofit included installation of the 54-inch high steel tubing fence for trail user safety.

Safety Railing

It is recommended that the Mad River Bridge be retrofitted with the same railing design as noted above for the trestles. Wooden railing, 54 inches tall, is recommended for both the trestle approaches and steel bridge structure that collectively span 505 feet. Another option is 54-inch steel tubing rail/fence on both sides of trail decking.

C. Access Control

Multiple-use trails are public transportation and recreation facilities very similar to roadways in design and function. Several of the issues that must be considered in addition to traditional motorized transportation planning. Three of these are; 1) appropriate separation of non-motorized and motorized facilities 2) management of the potential for trail users to access or impact adjacent lands and 3) control of motor vehicle access onto trails.

C1. Separation

In a number of cases, the A&M corridor (or alternative alignment options) is/are immediately adjacent to County roads or State Route 299. Each situation will require a site-specific treatment related to the topography, road-trail interaction, and potential for conflict.

Bikeways or trails parallel to roadways should be located no closer than five feet from the edge of the roadway, unless a physical barrier or grade separation is provided. Generally, multi-use trails are not recommended directly parallel in close proximity to roadways. When trails are located immediately adjacent to existing roadways, in place of a sidewalk, for example, most bicyclists will find the trail less usable than the street itself, assuming there is adequate roadway width. This is not a concern along most of the A&M corridor, where when the corridor is parallel to adjacent roads, there is generally separation by a distance greater than five feet and by existing vegetation.

Separation will be a concern at the few locations where the proposed trail would be immediately adjacent to existing roadways, such as:

- Segments of West End Road;
- Three sections of Warren Creek Road;
- Glendale Drive near the western State Route 299 undercrossing or alternates;
- Caltrans Right-of-Way (if utilized);
- Railroad Avenue in Blue Lake; and
- Blue Lake Boulevard approaching Korb.

There is no grade separation or vegetative barrier between the existing railroad right-of-way and the adjacent road at segments of the proposed trail. These locations include:

- Glendale between the historic rail yard and the road crossing; and
- In Blue Lake along Railroad Avenue.

In these situations, separation or safety railings or pilings are recommended to protect trail users from adjacent traffic and to preserve the roadway for vehicle passage. Trail and roadway separators generally consist of locally appropriate fencing.



This multi-use trail and State Route 101 north of Monterey are separated by landscaping.



Separation of this rail-trail and roadway are achieved by a curb.

C2. Fencing

Fencing along the A&M corridor will be necessary where the proposed trail would be adjacent to a road or highway, where existing fence is non-functional, where improved access control is necessary, or where a privacy screen is appropriate. Some portions of the corridor will not need upgraded fencing. Included herein are general recommendations for fencing – mostly in the form of cost estimates for each segment of proposed trail – but in most cases, recommendations regarding specific properties are not included.



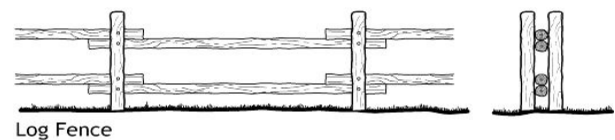
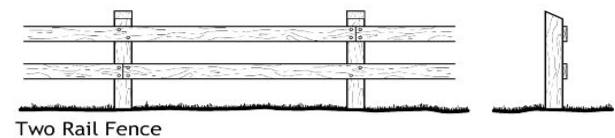
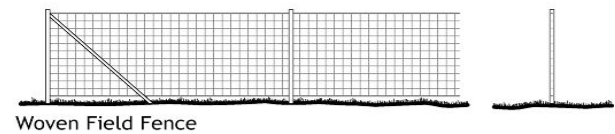
Fences along this rail-trail are property-specific in style.

As much as is possible and feasible, fencing to protect adjacent property from trespass should include design input from those adjacent landowners. Considerations should include:

- Land use/s of property in question and relative appropriate fencing style (e.g. field fencing for adjacent agricultural uses, [Figure 5.5](#));
- Character of property/ies in question and appropriate design of fencing;
- Neighborhood and landowner trail access provisions (e.g. gates) where appropriate; and
- The cost of appropriate fencing included in grant proposals.

Along the A&M corridor, appropriate fencing types include: split rail fencing, field fencing (grid wire with none, one or two strands of barbed wire on top), or a double rail fence. These fence types are illustrated in [Figure 5.5](#). Additional considerations for site appropriate fencing include the option, style and location of gates, as well as the fact that fences are an introduction of wildlife barriers.

Trail Fences



Screen Fences

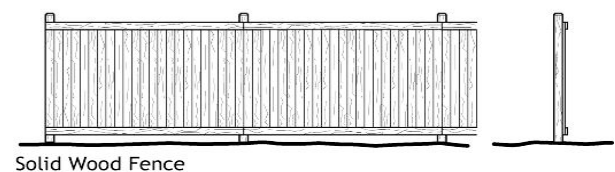
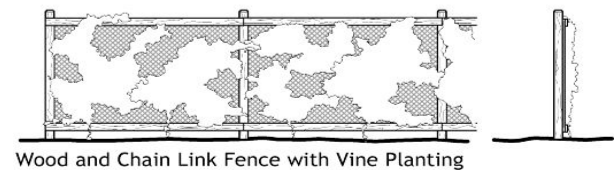


Figure 5.5. Potential fencing designs for various applications along the trail corridor.

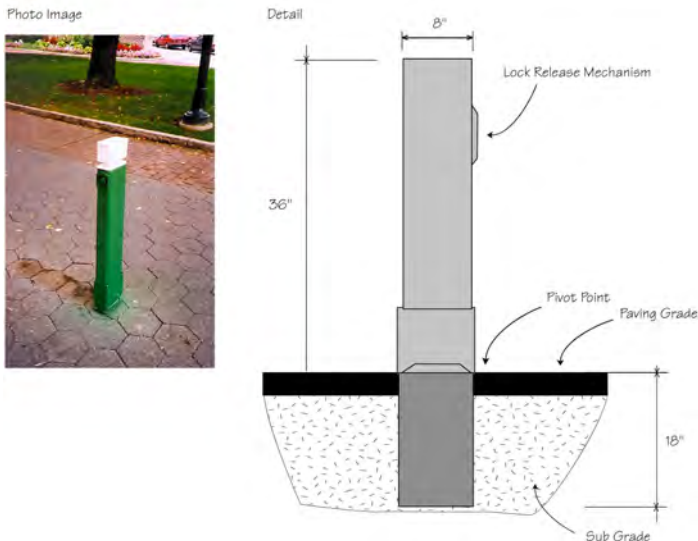
Guardrails are recommended where the trail is elevated significantly above the surrounding surface or where the trail and roadway edge are less than five feet apart. A guardrail would not be necessary if surface and trail are separated by a curb.

C3. Bollards

Bollards at trail intersections and entrances may be necessary to keep vehicles off the trail. Posts should be designed to be visible to bicyclists and others, especially at nighttime, with reflective materials and appropriate striping.

There are several standard types of bollards appropriate at different locations. Most trail entrances require removable or collapsible bollards to provide for maintenance, emergency services and law enforcement vehicle access. These bollards cannot be removed by trail users but can be easily removed or collapsed by emergency services, police, and maintenance personnel with a key lock or chock piece. A collapsible bollard cross-section and foundation detail is shown in Figure 5.6. Fixed bollards can be used in locations where access control is necessary and no need for vehicular access is anticipated. A fixed bollard cross-section and foundation detail is shown in Figure 5.6.

Collapsible Bollard



Fixed Bollard

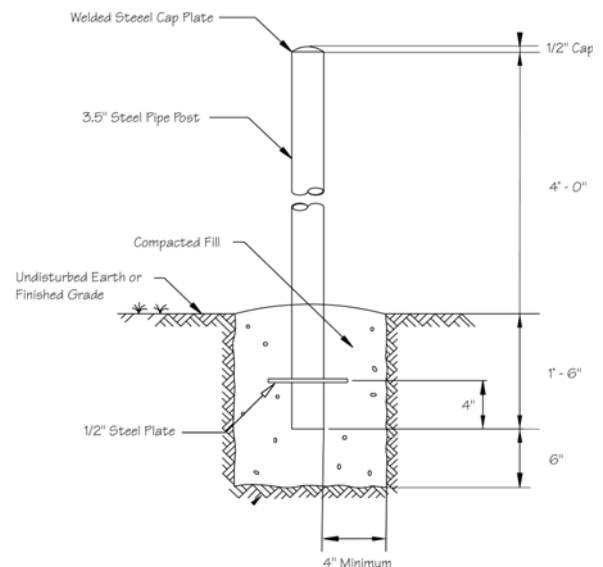


Figure 5.6. Two (of many) different bollard design options.

D. Trail Support Facilities

Additional considerations must be made for trail/community interface, safety and comfort issues. To ensure that a trail works for the surrounding community, that it feels inviting and functions safely, it is

important that complimentary infrastructure is well-planned and designed, including lighting, signage, and proper maintenance and care for the trail.

D1. Utilities and Lighting

Surface and sub-surface utilities are located within the railroad right of way, impacting the location and construction of the proposed A&M Rail-Trail. Utilities include signal and communication boxes, water lines, power and telephone lines. For instance, along much of the corridor where it is adjacent to West End Road, the north side of the corridor is bordered by a HBMWD water line, while the south side is bordered by a utility line right-of-way.

The A&M Rail-Trail should be designed to avoid moving most active surface utilities. The trail may be located directly over existing sub-surface utilities assuming a) adequate depth exists between the trail surface and utility to prevent damage; and b) agreements can be reached with the utility owner/s regarding access for repairs and impact to the trail.

The A&M Rail-Trail is not proposed to have lighting in initial stages of development. During this phase, it is recommended that the trail be open to public use from ‘sunset to sundown’. Some lighting may be desirable at low-visibility roadway crossings to promote nighttime trail user safety at specific intersections.

Future lighting needs can be met through use of existing aboveground utility poles located within or near the right-of-way. If a significant length of the corridor is developed as a trail – particularly for wintertime use and for safety considerations – lighting may become appropriate at that time. Solar-powered lights could be installed at intervals along the corridor. Theft and/or vandalism should be considered in design of such facilities.

Another potential safety feature recommended at public and landowner meetings are call boxes along the proposed trail. Though not included in current cost-estimates, these facilities could be combined with solar lighting, as mentioned above. They would serve the public during emergencies and for law enforcement needs.

D2. Signing and Marking

The A&M Rail-Trail should be designed to include all of the required and recommended signing and marking standards developed by Caltrans in Chapter 1000 of the Highway Design Manual. In addition, all signs and markings should conform to the standards developed in the Manual of Uniform Traffic Control Devices (MUTCD). Appropriate regulatory signage for trail users and motorists at all trail-roadway intersections on the A&M Rail-Trail is detailed in [Appendix F](#). In general, trail signs are

generally specified to be 18”x18”, the smallest of Caltrans standards.

In addition to directional and regulatory signage, the A&M Rail-Trail should be identified by a consistent, unique logo or design that will help guide people to and on the trail, similar to other destination trails in the region. Each



Sonoma County rail-trails logo.



This Idaho rail-trail trailhead has a distinctive look, and affords amenities for trail users.

jurisdiction may also have their own entrance signing features as well, however consistency of entrance features is recommended.

In general, all signs should be located at least 3 to 4 feet from the edge of a hardened (or paved) surface (more if there is/are soft shoulder/s), have a minimum vertical clearance of 8.5 feet if located above the trail surface and be a minimum located next to the trail. All confusing motorists. The and markings should be the

Options for trailhead signage and posted trail regulations. provide trailhead and trail entire corridor and location of also include sponsorships by corporations. In addition, considered in design of signs.

Additional signage should and adjacent land uses. Mileage the trail. There will be many along the proposed trail,

- Railroad and logging
- Native American history;
- Natural history; and
- Value of adjacent agricultural land as open space and local food production.



There are many thematic opportunities for interpretive signage on the A&M corridor, as on this Washington, D.C. rail-trail.



Trail signs that will encourage respect for adjacent landowners are recommended.

of 4 feet above the trail surface when signs should be oriented to avoid designs (though not the size) of signs same as used for motor vehicles.

vary, but at minimum should include Trailhead signs or kiosks should also identification, information about the other access points. Entrance signs may local agencies, organizations, and/or bilingual or multilingual signs should be

encourage respect for private property markers could be installed adjacent to opportunities for interpretive signage including topics such as:

history;

A detailed conceptual design for each of the twenty-five roadway crossings along the A&M corridor are included below under *Specific Design Treatments*. Sign types proposed as a part of the conceptual crossing designs are included under *Specific Design Treatments*.

If necessary, pavement marking standards can be found in the Caltrans Highway Design Manual's 'Bikeway Planning and Design' (Chapter 1000) and the MUTCD.

D3. Trail Entry Features

Major entrances to the A&M Rail-Trail may contain a variety of support facilities and other items, depending on available resources and local support. Typical entrance features would include: trailhead facilities (including parking, signing and marking, bollards, fencing and trail entrance geometry) as well as landscaping. Trail entrance features should have some type of consistency, or design unity to ensure that trailheads are quickly identifiable to locals and visitors alike. For small-scale trail entrance sites that will primarily serve neighborhoods, it will not be appropriate to utilize features that attract heavy use, but rather one small element of consistency (such as a small sign reading ‘Annie & Mary Rail-Trail Access’).



A standard trailhead sign on this rail-trail helps trail users know what type of information they'll find from a distance.

Trailheads

Each trailhead location will require site-specific design. Trailhead design should be completed by a licensed landscape architect or civil engineer in order to ensure appropriate site design that will enhance the overall trail experience and ensure function and ease of long-term maintenance. Each trailhead design must provide for adequate parking, appropriate vehicular, bicycle and pedestrian circulation, directional and interpretive signage as appropriate, utility access, and restroom facilities as appropriate to each individual site.



A simple trailhead marker in Flagstaff.

Trailheads may be designed under separate contract for each individual facility or multiple trailheads may be designed under a blanket contract, providing for greater design consistency for multiple locations. Alternatively, the trail developer may adopt a simple set of uniform design guidelines early in the trail development process to promote design unity among facilities and features designed and implemented in multiple phases of trail development spread over many years. In general, A&M trailheads should provide the following design features.

Specific design recommendations for Arcata, Water District parks and Blue Lake trailhead areas are addressed under *Specific Design Treatments*, below.

Parking

Destination trailheads require adequate parking for the projected number of trail users that will drive to the trail. This analysis should be based on local population and projected trail use. In general, a major trailhead for a destination trail in a rural area should provide a minimum of twenty-five parking spaces, including handicap accessible stalls.

Signage

Options for trailhead signage vary – including directional, marker, guideline and interpretive signage. More detail about signage is discussed above under ‘Signing and Marking’.

Restrooms and Waste Receptacles

Though not currently included in the overall cost-estimate, these facilities should be considered for long-term sustainability of the proposed trail, particularly trash receptacles. Waste receptacles demand intensive maintenance schedules and can be subject to vandalism or disruption by animals. However, litter is already a problem on the corridor and trash receptacles should be provided at least with major trailhead access facilities. It is recommended that sturdy, animal-proof models are used. These models tend to be more expensive, but save maintenance staff time and headaches.

Another type of receptacle is made for dog waste and is becoming common along public trails. A number of different manufacturers have a range of models available.

Currently, public restrooms exist in three places along the corridor in relatively close vicinity. The HBMWD parks both have restrooms that are open during daylight hours. The City of Blue Lake also keeps restrooms open during daylight hours on the south side of Perigot Park, south of the corridor. Consequently, restroom facilities are adequate along the corridor, given that these entities will allow usage by trail goers.

Trail Entrance Geometry

Trail alignment should have a sharp (20 foot or less radius) curve at all major trailhead/road intersections, where physically possible, to help slow bicycles entering or leaving the trail ([Appendix E](#)).

Bollards and fencing are discussed in more detail earlier in this chapter. Bollards should be installed at all points where the proposed trail leaves trailhead and parking areas to prevent unlawful vehicular use of the trail. Prefabricated metal bollards are available in a wide range of fixed, removable and collapsible configurations from a variety of manufacturers.

Many multi-use trailheads are located at the beginning, end, or other significant access points along the trail, and are often located immediately adjacent to private property. Fencing is consequently appropriate at many trailhead sites to contain trail users on public property. It is also often appropriate for fencing at trailheads to have aesthetic qualities.

D4. Landscaping Features

The natural landscape along the A&M corridor is dominated by riparian and coniferous forest types, which are characteristic of the lower Mad River drainage. Very little additional landscaping will be necessary along much of the proposed trail given the intact natural vegetation, rapid revegetation rates, and local interest in maintaining a low cost trail that retains its rural feeling. Types of sites that will benefit from minimal landscaping include trailheads, areas where visual screens are necessary, and some locations of construction disturbance.



A distinctive rail-trail entry marker in Idaho.

Some proposed trail segments (and/or adjacent properties) will benefit from landscape treatment designed to provide a visual buffer. The railroad right-of-way and proposed trail alignment alternatives pass adjacent to residential, agricultural and industrial properties and roads or highways where landscape planting could serve as both visual buffer and would help keep trail users on the trail alignment.

Each situation will require site-specific design and plant selection. In these cases, some neighbors may have specific landscaping requests that should be accommodated to the extent feasible, practical and appropriate. Separate native plant lists should be generated for forested, residential/business, and agricultural areas of the corridor. For a residential/business area list, a few additional ornamental varieties could be included, as long as they are not invasive species.

If plantings occur between late spring and early fall, some form of initial irrigation will be necessary to ensure survival of plants into the rainy season. In most areas of the corridor, drip irrigation would be difficult and costly. A lightweight maintenance vehicle could access the corridor and provide water from a portable system, and/or volunteer maintenance crews (or neighbors) could be organized to assist.

D5. Trail ‘Furniture’

Benches, picnic tables and drinking fountains are all items that could and eventually should be included as a part of the trail corridor. Appropriate placement of these items is very site-specific, and mostly focused on trailhead or other locations where people would naturally ‘linger’ or enjoy a vista. Benches could be placed in areas where trail users might like to rest or enjoy a particular view. Benches are particularly important to include for the elderly and very young – a lack of benches can deter these groups (and their families) from using trails. Picnic tables are already located at the HBMWD parks and in Perigot Park, but could also potentially be located next to the museum in Blue Lake, immediately adjacent to the corridor. Drinking fountains could be provided at trailhead facilities in Blue Lake and Arcata.



Trailside amenities, from the basic to complex, help create a more comfortable and attractive trail experience.

All trail furniture can include a creative design element, especially given the strong arts community in the area. Some furniture functions could also be provided by historic railroad equipment, engines or cars placed in visible locations along the corridor (for instance the proposed Arcata/West End Road trailhead, the historic train/logging equipment yard, and downtown Blue Lake).

E. Specific Design Treatments

Most design recommendations herein are made in a general sense, however there are some cases where more specific ideas are appropriate. In particular, four trailhead site recommendations are made below. Additionally, road-trail crossings fall into a suite of ‘typical’ situations that are addressed here as well.

Site-specific design treatments for drainage are referenced in the [Appendix D, Attachment 2](#), ‘Engineering Evaluation’.

E1. Specific Trailhead Recommendations

Planning for trailhead access will need more detailed consideration during early trail planning efforts. This is an aspect of trail planning that does not often receive enough attention – consequently access to and from trails can become logistically problematic, frustrate neighbors, and generate safety concerns.

There are two relatively natural trailhead sites that currently exist: Water District Park 1 and Perigot Park in Blue Lake. These sites should be improved for additional parking demand, trailhead kiosks provided and site-appropriate facilities that accommodate overall higher visitor use levels such as waste receptacles. Water District Park 4 is across Warren Creek Road from the A&M corridor, and unless a connecting trail along the road or a safe crossing could be established, it is not recommended as an improved trailhead site.

Depending on the alignments chosen for trail development ([Chapter 6](#)), two additional trailhead sites – that do not currently serve in this function – should include the Aldergrove Industrial Park (see [Appendix E](#) ‘Conceptual Road Crossing Diagrams’) and a site at or near the former rail yard in Glendale. These sites may require acquisition of adjacent private property for parking and trailhead facilities. One landowner adjacent to the Arcata trailhead site offered that he may be willing to provide enough space for a couple of parking spaces if the drainage problems on West End Road next to his property can be fixed.

E2. Road Crossing Design

Roadway crossings are an important component of trail implementation. Motorists commonly do not expect to see bicyclists and pedestrians at unprotected locations or at former railroad crossings. However, based on thousands of miles of rail-to-trail conversions completed around the United States, the vast majority of which have at-grade roadway crossings, crossings have been successfully operated for many years.

The A&M corridor crosses 29 at-grade roadway locations between the Aldergrove Industrial Park and Korbel. Another nine crossings are associated with potential alternative routes included in this Feasibility Study. When considering a proposed off-street multi-use trail and required at-grade roadway crossings, it is important to remember two items: (1) trail users will be enjoying an auto-free experience and may enter into an intersection unexpectedly; and (2) motorists may not anticipate bicyclists riding out from a perpendicular trail into the roadway. However, in most cases, at-grade trails can be properly designed to a reasonable degree of safety and to meet existing traffic engineering standards.

Evaluation of bikeway crossings typically includes an analysis of vehicular traffic patterns, as well as the behavior of trail users. Analysis of vehicular traffic patterns, with the exception of crossing distance, is not included in this study due to lack of current data. Future analysis should include traffic speeds (85th percentile), street width, traffic volumes (average daily traffic and peak hour traffic), line of sight, and trail user profile (age distribution, destinations). A traffic analysis is conducted as part of the actual civil engineering design of the proposed crossings to determine the most appropriate design features.

- #1 West End Road
- #2 Public Road (Water District)
- #3 Private Driveway
- #4 Private Driveway
- #5 Warren Creek Road
- #6 Private Road
- #7 Glendale Road
- #8 Glendale Road
- #9 Private Road
- #10 Glendale Road
- #11 Private Road
- #12 Private Road
- #13 Glendale Road
- #14 Private Road
- #15 Private Road
- #16 Chartin Road
- #17 Private Road
- #18 Private Road
- #19 Private Road
- #20 Private Road
- #21 Broderick Avenue
- #22 “G” Street
- #23 “H” Street
- #24 Shamrock Lane
- #25 Private Road
- #26 Private Road
- #27 Old Bridge Road
- #28 Simpson yard entrance
- #29 Blue Lake Blvd. at Korbel

Additional crossing required for optional trail routes include:
 E1 Private Driveway
 E2 Public Road
 E3 South Railroad Avenue
 E4 Private Driveway
 E5 Private Driveway
 E6 Private Driveway
 E7 Taylor Way
 E8 Private Road
 • E9 Hatchery Road

Average daily traffic volumes (ADTs) in the project area are relatively low when considering thresholds for crossing design recommendations. In the range of volumes in this rural area, these arterial roads receive moderate use, and often experience relatively high speeds of traffic for the width and sight distance afforded to drivers.

This study identifies the most appropriate crossing options given available information. This must be verified and/or refined through actual engineering and construction documents.

E3. At-Grade Crossing Features

Where trails cross roadways at the same elevation (or grade) as motor vehicle traffic, special attention must be given to design so that trail users and motorists alike are alerted to the potential for interaction. The features discussed below present a range of options to provide for trail user safety at at-grade crossings. Many of these features are applicable in a range of settings, including: unprotected at-grade crossings and existing roadway intersection crossings (each of these three crossing types is discussed in detail below). The features highlighted here are discussed generally for their application potential at uncontrolled at-grade crossings, because these situations require the most innovative strategies to protect trail users and alert motorists to potentially unexpected circumstances.

Signage

Crossing features for all roadways include warning signs for vehicles and trail users. Sign type, location, and other criteria are identified in the Manual for Uniform Traffic Control Devices (MUTCD) and the Caltrans Traffic Manual (Appendix F). Consideration must be given to adequate warning distance based on vehicle speeds and line of sight. Visibility of all signage is of paramount importance. Catching the attention of motorists jaded to roadway signs may require additional alerting devices such as a flashing light, roadway striping, or changes in pavement texture. Signing for trail users must include a standard “STOP” sign and pavement marking, sometimes combined with other features such as bollards or a ‘kink’ in the trail to slow



This Portland, Oregon rail-trail road crossing uses signage and striping to alert trail users and motorists.

bicyclists. Care must be taken not to place an excess of signs at crossings lest they lose their impact.

Directional signing may be useful for trail users and motorists alike. For motorists, a sign reading “A&M Trail Xing” along with a trail emblem or logo helps both warn and promote use of the trail itself. For trail users, directional signs and street names at crossings help direct people to their destinations.

Striping

In the case of the A&M Rail-Trail, unpaved surfaces will not allow for traditional paint or thermoplastic striping on the trail surface to warn trail users of upcoming intersections. In many situations existing on the A&M corridor, this will not present a problem due to relatively low traffic volumes and moderate projected trail use. At a few of the specific crossing locations, new or experimental techniques – such as warning flags imbedded in trail intersections with gravel road surfaces – are suggested to heighten visibility of the trail to motorists entering gravel roadways where there is a trail crossing parallel to a primary paved roadway.

If the proposed trail were to be paved at some point, multi-use trail striping is commonly a relatively thin single or double line. A median stripe on the trail approach will help to organize and warn trail users. Additionally, trail planners and designers have developed a number of striping patterns for to delineate trail crossings.

Crosswalk striping is a matter of local preference, and may be accompanied by pavement treatments to help warn and slow motorists.

E4. Typical Crossing Prototypes

Virtually all at-grade trail-roadway crossings fit into one of three categories, described in [Table 5.1](#).

Table 5.1
Basic Crossing Prototypes

Crossing Type	Name	Description
Type 1	Unprotected	Unprotected crossings include mid-block crossings of residential, collector, and sometimes major arterial streets.
Type 2	Routed to Existing Intersection	Multi-use trails that emerge near existing intersections may be routed to these locations.
Type 3 <i>(not discussed here)</i>	Signalized/Controlled	Multi-use trail crossings that require signals or other control measures due to traffic volumes, speeds, and trail usage.

Type 1: Unprotected Crossings

Type 1 or uncontrolled crossings (unsignalized, but with other traffic control devices) are recommended for streets or roadways with 85th percentile travel speeds below 45 mph and ADTs below 10,000 vehicles. An unprotected crossing consists of a crosswalk, signing, and often no other devices to slow or stop traffic. The approach to designing crossings at mid-block locations depends on an evaluation of vehicular traffic, line of sight, trail traffic, use patterns, road type and width, and other safety issues such as nearby schools. Motorists are not required to stop at Type I trail crossings.

On residential and collector streets below 10,000 ADT (which includes all public roadways in the project area), crosswalks and warning signs (“Trail Crossing”, “Pedestrian Crossing”) should be provided for motorists, and on the trail approaches, “STOP” signs and slowing techniques (bollards, geometry or striping) should be used. Care should be taken to keep vegetation and other obstacles out of the sign line-of-sight for motorists and trail users.



The A&M corridor crosses a number of rural roadways and driveways in the project area.

A Type I Crossing may include a range of traffic safety features such as warning signage for motorists. Other “warning” features might include a steady flashing yellow beacon along with appropriate signage. This feature can be located at the crossing itself or in advance of the crossing, depending on visibility requirements. Flashing yellow beacons can also be trail user-activated (generally preferred) so that the beacon is not flashing at all times – motorists generally learn to ignore continually flashing beacons.

Type 2: Existing Intersections

Multi-use trails that either parallel a roadway or emerge closer than 200 to 350 feet from a protected intersection should be routed to that crossing in most cases. The reasons for this are that motorists are not expecting to see pedestrians and bicyclists crossing so close to an intersection, traffic congestion may extend this distance, and the crossing may unnecessarily impact traffic capacity. **Table 5.2** outlines the standard requirements for crossings at existing intersections.

**Table 5.2
Crossings at Existing Intersections**

Standard Requirements	
Maximum Distance from Trail to Intersection:	Street Width 40 feet or less: 200 feet Street Width over 40 feet: 350 feet
Length of barrier to prevent informal crossing	Street Width 40 feet or less: 50 feet Street Width over 40 feet: 100 feet
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

One of the key problems with using existing intersections (such as in the City of Blue Lake) is that it requires bicyclists to transition from a separated two-way facility to 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.

E5. Conceptual Road Crossing Diagrams

The conceptual road crossing diagrams presented in **Figure 5.7** and **Appendix E** are intended to provide basic design standards for development of site-specific crossing treatments on the proposed A&M Rail-Trail. Trail crossing diagrams in **Appendix E** address typical situations existing on the A&M corridor:

- Low-Volume Two-Lane Paved Rural Roadways;
- Moderate Volume Two-Lane Paved Rural Roadways; and
- Private Gravel Roads and Driveway.

The unique circumstances of the A&M Rail-Trail require some creative design solutions that will evolve in greater detail during the implementation phase of the project. These situations along the A&M corridor not typical of multi-use trail corridors in more urban areas or trails proposed for wider railroad rights-of-way (typically 60 – 100 feet in width) include:

- A number of low-volume rural roadway crossings where the trail will intersect the road at odd angles, limiting visibility for motorists and trail users alike. These intersections are also constrained by the available right-of-way, limiting a designer's ability to develop right angle crossings (the preferred geometry).
- A number of gravel entry driveway and private residence driveways, also at odd angles, do not allow for use of traditional multi-use trail signage. In order to provide for greater trail crossing visibility, it may be appropriate to implement some type of durable flagging/reflective material for use at ground level, indicating the location of the trail crossing.

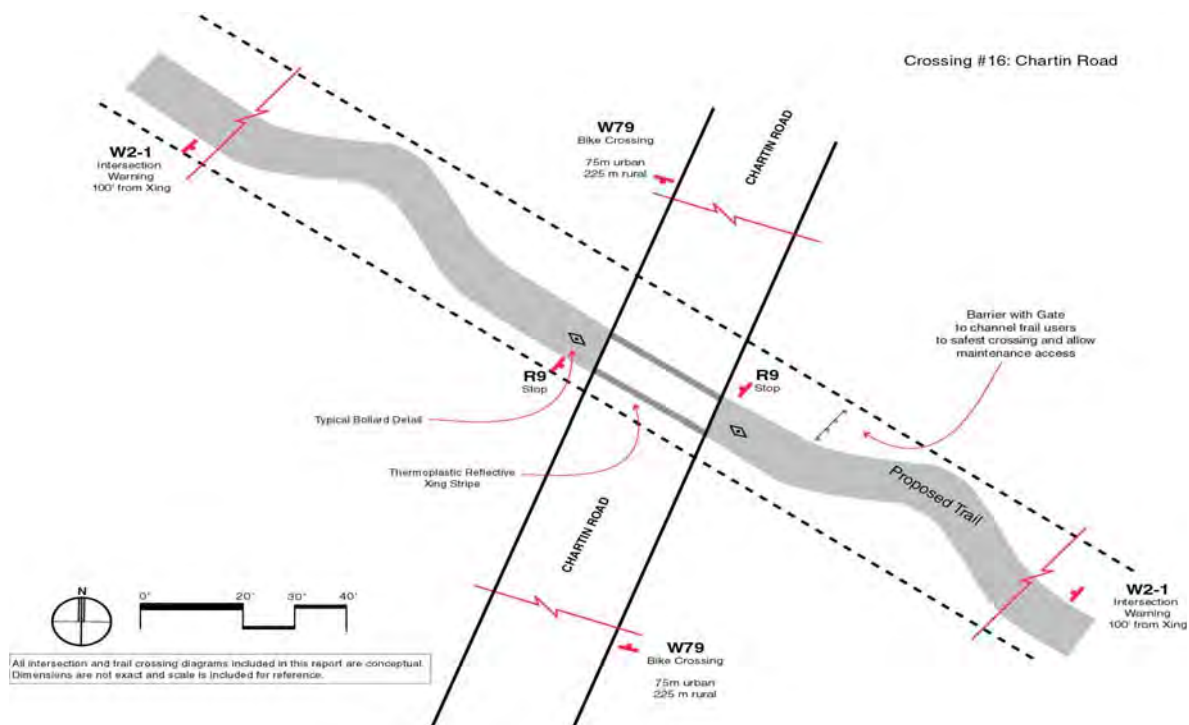


Figure 5.7. Example of a road crossing diagram presented in Appendix E.

F. Action Items

- As **trail designs** are determined, they should:
 - Meet landowner-specific needs;
 - Be established with an overall objective of trail user and neighbor safety; and

- Reduce long-term maintenance demands for the lowest possible construction cost.
- A **trail logo** for the corridor should be developed for use in all trail identification-related applications.
- Some form of regionally-appropriate **A&M Rail-Trail design theme** should be developed, preferably by an architect.
- If trestles are to be retrofitted, **partnerships with historic resources preservation groups** will be beneficial to include their input and to diversify funding opportunities.
- **Detailed and accurate GIS maps** of the corridor will help the detailed planning and design phases.

This chapter is dedicated to an assessment of alignment options for the proposed A&M Rail-Trail. For planning purposes, the 6.8-mile Arcata & Mad River corridor has been divided into eight project reaches. The proposed A&M Rail-Trail alignment is discussed below by reach, from west to east. Each reach has its own distinctive character and specific alignment issues. The entire alignment has been plotted on a mosaic of aerial photos of the corridor (Figure 6.1).

The primary focus of this chapter is to identify and analyze areas where there could be adjacent land use conflicts with a trail. For reaches – or segments of reaches – where potential conflicts were identified, route alternate analyses were conducted to provide options for minimizing those conflicts. The following analysis is based on research from fieldwork, review of available maps and aerial photographs, and discussions with adjacent landowners and managing agencies.

Where alternate routes to the original corridor are considered, they were selected based on a set of very general considerations. These considerations included:

- Available right-of-way;
- Compatibility with, privacy and security of adjacent land uses;
- Topography that may prohibit continuity of a multiple-use trail;
- Compliance with the Americans with Disabilities Act;
- Access to major activity centers;
- Integration into existing bicycle routes; and
- Protection of environmentally-sensitive habitat, including significant vegetation stands and wetlands.

Specific criteria were used to quantitatively analyze the alternatives to provide an objective measure of comparison. The NRS team and consulting engineer developed the four categories listed below and collectively assigned numeric values and weights for each alternative.

Support	Category weighted by 3
Level of public support	0-2 points
Level of adjacent landowner support	0-2 points
Level of agency support	0-2 points
Environmental Interaction	Category weighted by 2
Potential for conflicts with motor vehicles	0-2 points
Potential level of environmental impact	0-2 points
Cost	Category weighted by 3
General consideration of private parcel/s or easement/s cost	0-2 points
Estimation of construction costs	0-2 points
Compatibility with Rail Return	No weight for this category
Preserves the existing historic corridor features	0-2 points
Does not impede future rail return	0-2 points

A zero was considered poor or low. A score of 1 was considered to be moderate or was applied in situations where there are relatively balanced considerations. A score of 2 was assigned in situations considered high or good. Using the example of public support, a score of 0 indicates no public support, a score of 1 indicates that support is mixed, and a 2 indicates strong public support for an alternative. Small tables illustrate the criteria rankings for each alternative. Appendix G, 'Annie & Mary Rail-Trail Alternatives Assessment', is a comprehensive table with all criteria rankings and simple explanations.

Public input was gathered during forums in December, 2001 and September, 2002, and through conversations and emails. Agency support was gathered in meetings and phone calls with individual agencies, as well as during two meetings with all or most involved agencies. Environmental impact scores included consideration of impact on the natural environment as well as disturbance to industrial and human environments. For rail return, a score of 0 showed that an alternative would impede rail return in some way, while a 2 showed that an alternative would preserve the corridor for return of rail.

Each of the four categories were weighted to include additional emphasis on particularly those issues that might prohibit an alternative from being initially considered. For instance, the level of support by the public, agencies and private landowners was a primary consideration, and was consequently given a weight of three times the score subtotal. Estimated cost was also considered a major potential obstacle to implementation of a given alternative, and weighted three times the score subtotal. Potential human and resource-related environmental conflicts were weighted twice the score subtotal, considering that these ‘guesstimates’ regarding impacts would be considered in more detail later in the planning process, when more detailed trail designs are developed. An alternative’s compatibility with rail return was considered here because it is assumed the corridor will be railbanked, however none of the alternatives propose construction of significant obstacles to rail return.

An additional function of the planning reaches is that they could serve as ‘phased’ trail development segments, with the exception of Parks Reaches I and II. (The Parks Reaches could together be considered a construction phase option, and were separated only to simplify discussion of alternatives in each reach.) The Hammond Trail is an example of ‘phased’ trail development: sections have been built as planning constraints could be addressed and funding became available. The planning reaches identified below – Arcata, Parks I, Parks II, Bridge, Glendale, Blue Lake West, Blue Lake East, and Korbekel – were delineated with this concept of phased trail construction in mind. Functional start and end points would support interim (and/or long-term) public access from those locations.

Of the eight reaches, alternative routes were not considered for the three where a trail would be located only on the original corridor – these three reaches, however, are still discussed here to provide consistent analysis of planning issues.

A. Arcata Reach: Arcata City Limit to Water District Park 1

A1. Key Characteristics

The ‘Arcata Reach’ is the westernmost of eight along the A&M corridor study area, and is adjacent to a mix of industrial, residential, and riparian lands (Figure 6.2). This reach is approximately one mile in length as it travels from the Aldergrove Industrial Park at the West End Road crossing to the entrance of the Water Park 1. The reach leaves Arcata City limits northeast of the West End Road crossing – on a segment of West End Road consistently referred to by the public as the most dangerous stretch of the roadway. The HBMWD transmission line is immediately adjacent to this reach, and air relief vents are located on the rail corridor in several places.



The Arcata Reach is one of the most scenic parts of the A&M corridor.

Figure 6.1

A&M Route Alternatives and Planning Reaches Overview

(whole page, b&w, 11x17 accordion fold)

Figure 6.2, Arcata Reach Map

(back-to-back page, b&w, 8.5x11)

This length of corridor is perched above the south bank of the Mad River, north of and below West End Road. The reach is flanked with riparian forest and brush, although only moderate clearing and/or grubbing will be required on the corridor itself for trail development, because the HBMWD maintains the corridor for access to their water transmission line air relief vents. Field analysis indicates that a few areas of the Arcata Reach require additional grading or base ([Appendix D](#)). However, several drainage improvements are required to correct ponding, rutting, or inadequate drainage.

The physical rail bed is generally twelve to fifteen feet wide. However, one twenty-foot section of the reach is only five feet wide where it crosses a fifteen-inch drainage pipe that is failing. It is recommended that the pipe be removed and replaced with a larger pipe and headwall on the south side of the corridor. Native fill should also be placed along this section to widen and stabilize the corridor. A short fence or guardrail may also be required along the north side of the corridor behind the residences, as there is a steep descent to the Mad River.

There are several other recommendations for correcting inadequate drainage on the Arcata Reach: several smaller culverts should be replaced, and three sections, totaling eight hundred feet, require French drain system installation to convey water from the corridor.

A2. Key Connections

This reach will facilitate trail access to and from the Aldergrove Industrial Park and Water Park 1. The proposed trail start at the junction with West End Road and Ericson Way will be referred to as the 'Arcata trailhead'. Both ends of this reach are public destinations.

The Arcata Reach will also provide a dedicated place for non-motorized traffic between Water Park 1 and Arcata parallel to this notoriously narrow stretch of West End Road. It will also provide residents of West End Road a place to walk and ride. It will provide connections to West End Road bike lanes (which should be extended to the proposed trailhead site), SR 101, and the Hammond Trail via Giuntoli Lane and Arcata 'Bottoms' roads.



Water Park 1 is a common destination for cyclists and families in the summer.

A3. Constraints

One segment of the Arcata Reach is immediately behind two residences, approximately one-quarter mile from the West End Road crossing. This 600-foot segment is approximately 15 feet from the western residence (APN 504-20-101) and approximately 30 feet from the eastern residence (APN 504-20-118). The corridor is at roughly the same elevation as the western residence, and is approximately three to five feet lower than the eastern residence. A small retaining wall exists along most of the eastern residence frontage. Re-routing the trail around these residences would be problematic due to the location of West End Road and topography. Two options were investigated for this reach.

A4. Alignment Alternatives

The two alternatives for this reach are both located on the original corridor right-of-way. The difference is that, for a 600-foot stretch, one alternative would be at grade, and the other alternative would be three to five feet below grade to improve landowner privacy.

Arcata Reach A

The first alternative for the Arcata Reach reestablishes use on the original corridor from the junction of the railroad and West End Road at Ericson Way to Water Park 1. Where the corridor is adjacent to the residences mentioned above, privacy fences are recommended. As the corridor's elevation descends below the adjacent properties, the height of privacy fencing would decrease. The addition of fencing would help mitigate privacy and security issues expressed by adjacent landowners.

Concerns

The western adjacent landowner strongly opposes this alternate due to safety and privacy concerns. The landowner east of and adjacent to the proposed Arcata trailhead (APN 507-38-204) supports trail development, but is concerned about existing inadequate culverts and flooding where the corridor crosses West End Road at the southwestern corner of his property.

Support

The public strongly supports development of an alternative to what is consistently referred to as the most dangerous segment of West End Road for pedestrians and cyclists. Neither alternate – A or B – was noted as preferred by the public.



Two residences in the Arcata Reach are located in close proximity to the A&M corridor.

Arcata Reach B

The second alternative for the Arcata Reach was designed to provide an increased buffer between a trail and adjacent residences. Alternative B would entail a drop in trail elevation for approximately 600 feet, so that the trail would be benched below the adjacent properties by addition of a retaining wall and fence. The elevation difference between the residences and the trail would increase the segregation of trail users and local residents.



West End Road runs parallel to the A&M corridor in the Arcata Reach.

Concerns

No opposition to this alternative was expressed. The NCRA may oppose this modification to the corridor. Additionally, the project cost increase of this alternative could deter trail management agencies. At the September Public Forum, the eastern landowner (APN 504-201-001) expressed her opposition to Alternative A and support of Alternative B.

Support

The public strongly desires an alternative to what is consistently referred to as the most dangerous segment of West End Road for pedestrians and cyclists. Neither alternate – A or B – was noted as preferred by the public. The eastern landowner is supportive of Alternative B, and feels that her needs are addressed sufficiently in this design. She shared that she is not opposed to the trail, and welcomes the Alternative B design would allow her to access the trail and provide for privacy.

A5. Recommended Trail Alignment

Based on comparison of the two Arcata Reach alternatives using the aforementioned criteria, Alternate A ranks higher (Table 6.1). Developing a trail ‘at grade’ is less costly and would maintain the original corridor, which is the NCRA’s preference. However, even though the ranking suggests that Alternative A should be the focus of trail development, the project team’s preferred alternative for the Arcata Reach is Alternative B, due to adjacent landowner concerns and the fact that the proposed design would not involve rerouting away from the original corridor. Modifications to the corridor as suggested in Alternative B would not significantly deter reconstruction for potential future rail use.

Table 6.1
‘Alternate assessment criteria’ scores for the Arcata Reach.

	Arcata A	Arcata B
Support	2.5	2.0
Environmental Interaction	2.0	1.5
Cost	3.0	1.5
Compatibility with Rail Return	1.0	0.5
Total score	8.5	5.5

A6. Recommended Trail Support Facilities

The Arcata Reach is considered the western ‘trailhead’ for this planning project, and both ends of this reach should provide trailhead amenities (Chapter 5).

A significant amount of parking will be necessary near the Aldergrove Industrial Park trailhead site. Trailhead parking here should accommodate at least 15 vehicles, plus two ADA-compliant parking spaces, accommodation of one or two recreational vehicles and bicycle parking. Industrial properties south of West End Road are privately owned, however those landowners could be approached to sell easements for parking facilities. If a parking area is constructed south of West End Road, a crosswalk and other road crossing features will be necessary.

Removable bollards are also recommended at the corridor entrance to discourage unauthorized vehicular traffic on the corridor, while allowing access by service and emergency vehicles.



Water Park 1 could have a more inviting feel with simple design changes.



This Water Park sign is the only information visitors see upon arrival.

The adjacent landowner at the trailhead site (APN 507-38-204) has been contacted several times to discuss the idea of trail development. He is currently supportive, and has informally discussed the idea of working with trail developers to potentially provide disabled parking space on his property. He would like to have his drainage concerns – mentioned earlier – addressed to consider provision of parking.

Public use of Water Park 1 will increase if a trail is developed, and improved parking and day use facilities will be necessary to support this use. Recommendations for improved day use facilities at Water Park 1 include: removable bollards at the intersection with the park driveway, a park 'welcome' sign, improved parking area surfacing (hard, but not necessarily paved), more aesthetic fencing or barriers to separate parking from the park, improved restroom facilities, bear-proof trash receptacles, informational and interpretive signage, and a water fountain.

Along the Arcata Reach corridor, trail amenities should include removable bollards at both roadway intersections, road-crossing warning signs, trailside benches and trailside interpretive signage.

On- or off-street facilities should be developed to establish a connection between this corridor and the Hammond Trail to the west.

B. Parks Reach I: Water District Park 1 to Warren Creek Road

The Parks Reach is split into two sections, I and II, since there are two sets of alternatives for consideration. The Engineering Evaluation ([Appendix D](#)), however, treats these planning reaches as one.

B1. Key Characteristics

Parks Reach I is about 1,700 feet long, or approximately one-third of a mile, between the Water Park 1 driveway and the intersection of Warren Creek Road and West End Road ([Figure 6.3](#)). This reach passes through rural residential areas, a recreational park and riparian forests perched above the Mad River. The corridor is parallel to and north of West End Road with the Mad River to the south. Parks Reach I is entirely outside city limits and within Humboldt County jurisdiction. It is also paralleled to the south by the HBMWD transmission line.

It is reported in the field investigation ([Appendix D, Attachment 2](#)) that ponding, rutting, and areas of inadequate drainage exist in several areas of Parks Reach I. The results of the field investigation indicate that approximately half of the corridor in this reach will require grading and approximately one-quarter of it will require clearing and grubbing. Minimal volumes of additional base and native fill are required along this reach. A two hundred-foot section of this reach will also require construction of a French drain system to remove water from the corridor.

Figure 6.3, Parks Reach I Map

(back-to-back page, b&w, 8.5x11)

B2. Key Connections

Parks Reach I is characterized by residential and recreational land uses and riparian habitat. It begins at Water Park 1, which provides the public with access to the Mad River and picnicking amenities such as barbecue pits, horseshoe pits, and restrooms. A multi-use trail will facilitate non-motorized access to and from this recreation area. Input from the public and many neighbors has suggested a strong support for development of a dedicated bicycle and pedestrian route that would provide a non-motorized alternative to this segment of West End Road that is considered dangerous for bicycle and pedestrian use.



The water parks provide the public with space for activities such as picnicking, horseshoes, swimming, group activities and frisbee.

The east end of this reach is not meant to serve as a destination, but is only identified to assess one of the two sets of alternatives in the larger 'Parks Reach' ending at Water Park 4.

B3. Constraints

One landowner adjacent to this reach opposes development of a trail on the original corridor. This part of the corridor has traditionally been an area of land use conflict, however trail users will present different conflicts than trains did in the past.

The corridor is currently – and has historically – been used as a private driveway by residents of the parcel and home above Water Park 1 (APN 516-27-104). The corridor is closely flanked by West End Road to the south and by this private property to the north. In addition to the corridor sharing the private driveway for this residence, it also lies fifty feet from the front door of the home and is immediately adjacent to the garage door. There is a range of width, zero to approximately 15 feet, between West End Road and the A&M corridor from the beginning of the private driveway to the garage. Consequently, there is inadequate width available to simply move the trail south, between driveway and West End Road. Additionally, this household uses the garage for parking, and needs the entire corridor width (at a place where the cutbank below West End Road is vertical) to make turning movements into and out of the garage. The A&M corridor is also used for residential visitor parking. If the corridor is developed as a trail, turning movements to and from the private driveway/trail could pose a safety issue. Three alternative routes for Parks Reach I were investigated, as described below.

B4. Alignment Alternatives

The difference between these alternatives is the way in which they address privacy impacts to the primary adjacent landowner. Two of the alternatives put a trail closer to West End Road, and one routes a trail below the private parcel in question.

All of the alternatives include the addition of a guardrail along West End Road as the corridor passes the Water Park 1 entrance. This feature was included to address the apparent tendency of uncontrolled vehicular traffic to go off the road in this area. For two of the three alternatives, the trail would share the corridor with an active driveway and residential parking area. The landowner has expressed concern about a current limited site distance when exiting the driveway to West End Road, as well as limited

sight distance on the corridor when turning from West End Road to the driveway/corridor. This sight distance consideration influenced some of the alternative configurations.

Parks Reach I-A

Parks Reach Alternative I-A would utilize the original rail alignment for trail development. The corridor would continue to share approximately 350 feet with the private driveway. No additional items beyond trail surfacing would be required to facilitate recreational use of the corridor. An aesthetically functional fence is included in the design to provide privacy for the adjacent landowner.



The A&M corridor is the only driveway access to this private residence which is located adjacent to the corridor.

Additional features of this and alternative I-C include an automatic gate and trail user alert system for the landowner to enter the private driveway. To mitigate possible congestion on West End Road, a small shoulder should be included in the road design to allow for vehicles to pass turning vehicles into the private driveway – this feature is not included in the cost estimate. Another possibility – a relatively expensive option that was not considered in the design or cost estimate research – is the construction of a retaining wall to support West End Road that would afford more space for private residence parking in addition to a functional trail corridor.

Concerns

The adjacent landowner strongly opposes this alternative due to privacy and driveway restriction concerns. Proximity of the corridor to this residence's front door and garage door and the likelihood for conflict between driveway and trail uses were cited as primary concerns.

Support

Public support for this alternative is strong. Cyclists and runners have expressed a desire for an alternative to West End Road. Residents also shared their interest in a contiguous and parallel trail, citing examples such as that they take their children to the Hammond Trail to ride bicycles because of the perceived danger of West End Road. One wheelchair-using corridor neighbor expressed support for use of the original corridor in all cases.

Parks Reach I-B

Alternative I-B is similar to I-A in that the trail would still be located between West End Road and the private parcel above Water Park 1. Alternative I-B addresses the issue of adequate width between the private parcel and Warren Creek Road to maintain safe passage for trail users and motorists. To expand the width, Alternative I-B includes a cut into the bank south of West End Road (APN 516-27-103) of approximately twenty feet. The bank cut would allow for realignment of West End Road to the south and away from the private parcel above Water Park 1, creating space to accommodate both trail and driveway uses. The parcel across West End Road is approximately twenty feet higher



This road cutbank above West End Road would be moved back about 20 feet to move West End Road south and provide more space for a trail and driveway.

than the road and is undeveloped in the project area. This alternate route would not add appreciable length to a trail. [Note that this alternative is referred to as I-C in Appendix D](#) cost estimates.

Concerns

- There has been some indication that the southern bank of West End Road, across from the driveway in question, exhibits significant subsurface water flow, making a bank cut technically difficult.
- One adjacent landowner is opposed to this alternative; input from the landowner south of West End Road was solicited numerous times, but none was received.
- County Public Works' position is unknown regarding road realignment.
- Excavation and road realignment put this alternative at more than twice the cost of Alternative I-A.

Support

Cyclists and runners have shared that they would prefer a safer alternative to West End Road.

Parks Reach I-C

The third alternative for this segment would depart the original corridor at the Water Park 1 driveway, drop in elevation, and travel below the private residence (adjacent to the property) on a HBMWD maintenance road. The trail would reconnect with the original corridor between the private residence and the easterly neighboring property and residence (APN 516-261-002) on the maintenance road that provides access to a HBMWD cable car shed, and by a short section of cut and fill (some of which would be on the private eastern property) at that shed to rejoin the corridor. The road leading up to the cable car shed is at a 20% grade, requiring additional fill to achieve an acceptable trail grade. A fence is recommended, as specified by the HBMWD, around the shed. Improved fencing is also recommended for the private properties adjacent to the maintenance road.



This Water Park maintenance road could be utilized to route a trail below the residence above.

No additional base or drainage features are anticipated for Alternative I-C, although approximately 16,000 square feet of clearing/grubbing will be required. Almost 6,000 cubic yards of native fill will be needed to achieve the necessary grade as the trail descends into and ascends from Water Park 1. This route adds approximately 400 linear feet to the original corridor length.

Safety concerns have been expressed by an adjacent landowner. To control unauthorized use of the trail in an area out of the 'public eye', and when park facilities are normally closed, one solution could be to close (gate) this section of the trail between dusk and dawn. [Note that this alternative is referred to as I-D in Appendix D](#) cost estimates.

Concerns

- This route would require permission from the HBMWD and the eastern landowner (APN 516-261-002) to place a trail on their lands.
- This alternative would require approximately 6,000 cubic yards of native fill and cost almost twice that of Alternative I-A.

- Alternative I-C deviates from the original corridor for approximately 1,700 feet , would add 400 linear feet to the trail, and would introduce relatively steep gradients into the design and function of the trail.
- Unauthorized use of this route and adjacent properties, and related safety problems, are concerns expressed by an adjacent landowner.

Support

Cyclists and runners have shared that they would prefer a safer alternative to West End Road. The public generally prefers alternatives where the trail would remain ‘at-grade’.

Another Route Considered

Another option considered but deemed infeasible (and referred to as I-B in [Appendix D, Attachment 6](#) cost estimates) in Parks Reach I places the trail adjacent to the original corridor on the sloping median between West End Road and the private residence above Water Park 1. Fill would be required for the fifteen-foot wide segment to level and elevate the trail above and south of the private driveway. Based on a trail height elevated approximately eight feet from the original corridor and a length of 350 feet, the approximate volume of fill would be 700 cubic yards. Along this segment, the A&M corridor would be buttressed on its northern side with a retaining wall to assure stability of the trail. Fencing would be recommended along the northern side of the trail for 350 feet to provide for safety and a screen between trail and residence. A guardrail installed along the southern side of the trail to provide a buffer between vehicular and non-vehicular traffic.



The A&M corridor and West End Road are too close to fit a trail between them without reconfiguration.

Concerns included:

- There is not sufficient width for this option between the rail corridor and the road where the driveway joins the corridor.
- The additional costs associated with native fill, fencing, and guardrail increases the cost of this segment by half again that of Alternative I-A.
- The adjacent landowner has expressed concern in regard to decreased privacy resulting from the elevated trail.

B5. Recommended Trail Alignment

Using the alternatives assessment criteria ([Appendix G](#)) to analyze the three alternatives for Parks Reach I, the quantitatively preferred route was identified as Parks Reach Alternative I-A, on the original corridor. A high ‘score’ for alternative I-A can generally be attributed to the high cost of the other alternatives and the support of public and agencies to remain on the corridor. This does not lessen the amount of impact felt by the single landowner most affected if a trail is constructed on the corridor. If alternative I-A is selected, every aspect of design in this reach should be determined with consideration of reducing impacts to the adjacent landowner and prioritizing safety of trail users and vehicular traffic.

Table 6.2
‘Alternative assessment criteria’ scores for Parks Reach I.

	Parks I-A	Parks I-B	Parks I-C
Support	2.0	1.0	1.5
Environmental Interaction	1.0	0.0	1.0
Cost	3.0	0.75	0.75
Compatibility with Rail Return	1.0	0.25	0.25
Total Score	7.0	2.0	3.5

If the lead agency for trail development in this area wishes to select an alternative more amenable to the adjacent landowner, the scores of alternatives I-B and I-C are not substantially different.

B6. Recommended Trail Support Facilities

Removable bollards are recommended where the corridor crosses the private driveway property, and at each of the Water Parks to prevent motor vehicles from accessing the trail at these locations. Signs reminding trail users to respect private property, keep noise levels down, and so forth would be appropriate. Additionally, as mentioned above, a remote-controlled gate for the private driveway would help reduce unwanted ingress and egress of vehicular traffic onto and across the trail corridor.

C. Parks Reach II: Warren Creek Road to Water District Park 4

Parks Reach II alternatives focus on a set of three wooden trestles, and how to either use them or avoid using them as part of a trail route.

C1. Key Characteristics

Parks Reach II lies east of the intersection of West End Road and Warren Creek Road and continues to the corridor’s intersection with Warren Creek Road (Figure 6.4). This segment, which parallels Warren Creek Road for approximately 3,200 feet, contains Warren Creek Trestle, Schoolhouse Trestle, and Green Tank Trestle. These trestles span small tributaries, low-lying areas Warren Creek Road and private driveways. The corridor also passes immediately adjacent to one private residence, and is across Warren Creek Road from Water Park 4 and another private residence.

The field investigation (Appendix D, Attachment 2) reports that ponding, rutting, and areas of inadequate drainage are present along portions of Parks Reach II. The results of the field investigation indicate that approximately half of the corridor in this reach will require grading and approximately one-quarter of it will require clearing and grubbing. Minimal volumes of additional base and native fill are required along this reach. A two hundred-foot section of this reach will also require the addition of a French drain system to remove water from the corridor.



Three historic trestles provide a uniquely scenic, yet structurally challenging, element to trail design considerations.

Figure 6.4, Parks Reach II Map

(back-to-back page, b&w, 8.5x11)

C2. Key Connections



Water Park 4 offers Mad River access as well as picnic tables, barbeque facilities and restrooms.

Water Park 4, across Warren Creek Road from the corridor as it traverses Green Tank trestle, offers access to the Mad River and picnicking amenities such as restrooms, trash cans, picnic tables, and barbecue pits.

Parks II Reach includes the westernmost three historic trestles, which are some of the most visible ‘hallmark’ reminders to the community that the corridor exists. The Warren Creek trestle – largest of all trestles on the corridor – crosses Warren Creek Road and Warren Creek. The corridor continues immediately over Schoolhouse trestle and on to Green Tank trestle before crossing Warren Creek Road again just before the Mad River bridge. The corridor also intersects several private driveways.

C3. Constraints

Parks Reach II includes historic wooden trestles that require extensive structural restoration. A physical investigation was performed ([Appendix D, Attachment 1](#)) to assess the current structural conditions of the trestles. Warren Creek trestle requires significant structural upgrades, while Schoolhouse and Green Tank trestles appear to require little structural improvement for the purposes of a multi-use trail. Three alternatives were investigated for Parks Reach II and are described the following section.



Narrow Warren Creek Road was not considered as an alternative because it does not afford safe space for non-motorized traffic.

C4. Alignment Alternatives

The difference between these alternatives is that the first assumes restoration and use of the trestles, and the others present alternatives for avoiding the use of the trestles, which will be costly to restore for trail use. Warren Creek Road was not considered as an alternative for this section of proposed trail due to the incompatibility of placing non-motorized traffic on this narrow section of road with relatively high-speed traffic and poor sight-distance.

Parks Reach II-A

This alternative would locate a trail on approximately 2,600 feet of the original railroad corridor from Warren Creek trestle to the intersection with Warren Creek Road near Water Park 4. Warren Creek, Schoolhouse and Green Tank trestles would be retrofitted to support trail use and include railings for user safety. The structural investigation indicates that Warren Creek trestle is the only trestle along this segment requiring substantial structural improvements for a multi-use trail, where some disturbance to the stream corridor would be required to restore trestle footings. At

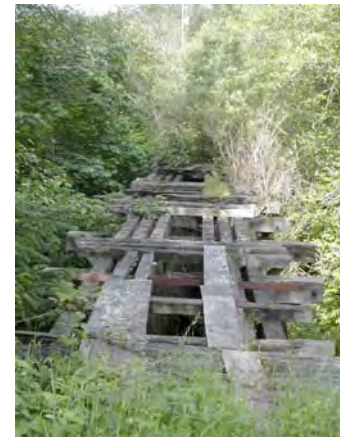


There is one residence immediately adjacent to Parks Reach II, just west of the Warren Creek Trestle.

the end of Parks Reach Alternative II-A is one major road crossing at the intersection with Warren Creek Road, southwest of the Mad River Bridge.

Concerns

- Reestablishment of the trail on the original corridor includes costly restoration of Warren Creek, Schoolhouse, and Green Tank trestles.
- One landowner, across Warren Creek Road and adjacent to Water Park 4, has concerns about the integrity of the eastern Green Tank trestle headwall and corridor-related drainage issues that affect his land.
- Trestle entrances would need to be signed for trail users to interact carefully, particularly equestrians and cyclists or wheelchair users.



The Schoolhouse Trestle is one of three that would require renovation.

Support

There is strong public support for a trail on the original corridor. Most adjacent landowners have not provided input, except for one that would prefer the trail remain on the corridor instead of being located closer to his property.



To avoid the trestles, the trail would have to leave the corridor, cross this driveway and travel through private and HBMWD properties.

Parks Reach II-B

This alternative would depart from the original corridor west of the Warren Creek trestle and reconnect with the corridor just east of its intersection with Warren Creek Road, bypassing the three trestles entirely. Trail development on this alignment would require dedication or purchase of trail easements from private landowners and the HBMWD for the entire length of this route. Parks Reach Alternative II-B is approximately 2,600 feet long, and would add almost 1,000 feet of trail to the length of the original corridor.

West of the Warren Creek trestle is a private residence and property to the north of the corridor (APN 516-26-102, formerly mentioned in analysis of Alternative I-C) and a private residence to the south of the corridor (APN 516-26-134). The northern parcel's driveway is parallel to the corridor to the point where it crosses under the Warren Creek trestle. The descent of the trail from the corridor to Warren Creek could be achieved by grading the trail to match the descent of the driveway (between 5 and 12% slope). The trail would have to cross the driveway and continue east over Warren Creek. The area between the driveway and HBMWD property has long been used by the public for river access – illustrated by a number of established footpaths and a small steel pedestrian bridge across Warren Creek. This bridge would need to be replaced by a 25-foot multi-use appropriate bridge. The trail would continue into HBMWD property, utilizing maintenance roads and traversing the northern edge of the Park 4 parking area.

East of Water Park 4, trail development would require an easement from a private landowner (APN 516-25-110) whose residence is adjacent to and south of Water Park 4. An easement would be necessary to utilize a private drive on the northern



This maintenance road/trail in Water Park 4 would connect to a trail through private property to the west.

edge of this property. The trail would then transition back onto HBMWD property by cut slope to a HBMWD cable shed, and by maintenance road switchback to the original corridor just northeast of the Warren Creek Road crossing.

Concerns

- Approximately 600 cubic yards of fill would be required to grade the trail from its elevation at the entrance to Warren Creek Trestle to Warren Creek Road.
- Crossing Warren Creek would require a twenty-five-foot bridge, incurring impacts to the stream area and an expense of approximately \$68,000.
- An easement for the trail would be required from the properties on either side of Park 4 and HBMWD properties. Cost estimates for these easements were not researched as a part of this feasibility study.
- The landowner east of Park 4 is opposed to this alternative due to privacy concerns, and is not interested in providing an easement. The landowner west of Park 4, with the most significant privacy impact considerations was contacted repeatedly for input, but provided no response.
- One adjacent landowner has contacted the County and the NCRA regarding concerns for structural problems of the Green Tank trestle that are possibly causing drainage impacts to his property across Warren Creek Road.



An easement would be necessary east of HBMWD Park 4, however the landowner is not willing due to concerns for privacy.

Support

No indication of support was noted for this alternative.

Parks Reach II-C

The third alternative for Parks Reach II would be very similar to Alternative II-B except that the trail would share the private driveway for approximately 400 feet. At the intersection of the private driveway and Warren Creek Road, the trail would continue east along the same route as outlined above in alternative II-B. The agency responsible for trail maintenance would share responsibility for the maintenance of that portion of the private driveway common with the trail. Alternatives II-B and II-C are both approximately 3,600 feet long and would add almost 1,000 feet to a trail off of the corridor.

Concerns

- Though no input was received from the adjacent landowner, it is assumed that they would have concerns about sharing their driveway with a trail.
- Other concerns are the same as noted for II-B.

Support

No indication of support or lack thereof was noted for this alternative.

C5. Recommended Trail Alignment

The preferred route for Parks Reach II was determined to be Alternative II-A ([Appendix G](#)). The primary consideration in this recommendation is the opposition to Alternatives B and C by adjacent landowners. Though Alternative II-A is more costly the community seems to consider the trestles historically valuable and is supportive of restoring them for use as trail structures.

Table 6.3.
‘Alternative assessment criteria’ scores for Parks Reach II.

	Parks II-A	Parks II-B	Parks II-C
Support	1.5	1.0	1.0
Environmental Interaction	1.0	1.0	1.0
Cost	1.5	1.5	1.5
Compatibility with Rail Return	1.0	0.25	0.25
Total Score	5.0	3.75	3.75

C6. Recommended Trail Support Facilities

Suggested trestle designs include railings adequate for safety of trail users. Not included in designs, but recommended, are trestle ‘pull-outs’ for viewing, particularly on the Warren Creek Trestle. It is recommended that privacy fence of choice be provided for the three adjacent residences. It is also recommended that Park 4 facilities be improved, much as recommended for Water Park 4. Accommodations should also be made to provide safe access from the corridor to Water Park 4.

D. Bridge Reach: Water District Park 4 to Glendale

D1. Key Characteristics

The Bridge Reach is approximately three-quarters of a mile long: it parallels the southern bank of the Mad River north of Warren Creek Road, crosses the Mad River, and parallels, then crosses Glendale Drive ([Figure 6.5](#)). The historic Mad River bridge – a steel truss superstructure supported by concrete footings



The 620-foot long Mad River bridge mostly consists of a steel truss superstructure much like that of the Hammond bridge.

and wooden approach trestles – is approximately 620 feet long. The area surrounding the corridor is rural residential along Warren Creek and Glendale Drives.

Riparian forests and brush flank the reach as it travels above the river. The east end of the Bridge Reach passes by the historic rail yard in Glendale. The entire reach is outside city limits.

Drainage recommendations include grading along one-half of the reach, a minimal volume of additional base and fill, and a French drain system for approximately 250 feet. With the exception of bridge restoration, this reach requires relatively minor improvements for use as a multi-use trail.

Figure 6.5, Bridge Reach Map

(back-to-back page, b&w, 8.5x11)

D2. Key Connections

Retrofit of this bridge to facilitate trail use will provide West End/Warren Creek residents with non-motorized access to services in Glendale and Blue Lake and Glendale residents with access to Water Parks and Arcata. Use of the bridge as a part of this proposed trail is also a key link in the functionality of the corridor as a non-motorized transportation and recreation facility. If renovated to support public use, the historic rail yard at the east end of the reach



Historic rail and logging equipment is stored in the former rail yard at the northeast end of this reach.



The A&M Mad River Bridge needs to be maintained because it also supports a HBMWD water line that serves Glendale, and Blue Lake.

would be a significant attraction along a trail.

D3. Constraints

Structural investigation of the Mad River Bridge ([Appendix D, Attachment 1](#)) indicated that restoration will be costly. One adjacent landowner has expressed opposition to the use of the bridge as a trail. The steel truss frame of the Hammond Bridge, of similar construction and located downstream, is experiencing structural decay that was studied by the County in 1998. Apparently, however, the A&M Bridge trusses are in much better structural condition, possibly due to the location more than three miles further inland from corrosive coastal influences.

D4. Alignment Alternatives

While the restoration of the bridge will be costly, no alternatives were investigated. A seasonal bridge was briefly considered, however since the Mad River Bridge carries all of Blue Lake's water supply, it would benefit the HBMWD and Blue Lake to have the assistance of a trail management entity to maintain the bridge, particularly since it looks like the NCRA will not be able to assist in the near future.

D5. Recommended Trail Alignment

The original corridor is the preferred alignment.

Concerns

One adjacent landowner, southeast of the corridor approach to the bridge, opposes use of the corridor as a trail in this area, but stressed that an improved fence would reduce trespassing concerns.

Support

There is strong public support for use of the Mad River bridge as a non-motorized alternate across the Mad River. Some residents of Warren Creek Road expressed that they would feel safer if patrols could (currently) cross the river on a trail. The HBMWD feels that the use of the bridge as a trail will help them with long-term bridge maintenance.

D6. Recommended Trail Support Facilities

If improvements are made between the trail and Water Park 4, it may be an appropriate location for an informational kiosk and parking. The historic rail yard in Glendale is an opportunity for on-site restoration and education about railroad and settlement history of the area. This area could be restored to allow controlled trail access and trail parking.

Not included in designs, but recommended, are bridge ‘pull-outs’ so trail users can appreciate scenic views from the bridge without impeding trail traffic. Interpretive signs about the history of the bridge could be located in these locations.

E. Glendale Reach: Downtown Glendale to Chartin Road

The Glendale Reach is the longest planning reach along the corridor – approximately two miles in length from Glendale to Blue Lake (Figure 6.6). In this reach, the rail corridor weaves along next to Glendale Drive – it travels under State Route 299, over Glendale Drive four times, over streams, through active industrial sites, over a long wood trestle, through backyards and along pastures, and consequently presents many challenges for trail planning.

E1. Key Characteristics

Through the Glendale community area, a diverse mix of industrial/commercial, residential and agricultural lands border the corridor. Most people are aware of the A&M corridor’s presence due to the visibility of the Minor Creek trestle adjacent to Glendale Drive. Dominant vegetation ranges from pastureland to riparian and wetland types. Adjacent agricultural lands produce cattle and vegetable crops. Industrial uses include a gravel operation, a construction operation and a lumber mill. The Glendale Reach is just west of Blue Lake City limits.

The existing railroad corridor travels from the historic rail yard, under SR 299 next to Glendale Drive, crosses Glendale Drive and enters D&T Lath (APN 516-10-179) and Blue Lake Forest Products (APN 516-11-333), the first of several industrial areas along the reach. Continuing east, the corridor again crosses to the south side of Glendale Drive behind a portion of Blue Lake Forest Products (which at the time of writing is inactive), crosses a heavily-used industrial access road, and travels behind two residences. The corridor crosses again to the north of Glendale Drive, crosses the Mill Creek (no longer standing) and Minor Creek trestle, and crosses one last time to the south side of Glendale Drive. Here, the corridor cuts through the active Kern Construction site (APN 516-14-117) and behind numerous residences that front on Glendale Drive. It then drops along the side of a large pasture, cuts through the middle of Potter’s Produce and farm residences (APN 312-08-206, 312-09-120, 312-10-110), crosses back under SR 299 and enters Blue Lake, where the planning reach ends at Chartin Road.



The Minor Creek Trestle is the most visible reminder of the A&M in Glendale.

Figure 6.6, Glendale Reach Map

(back-to-back page, b&w, 8.5x11)

E2. Key Connections

The Glendale Reach begins near the historic rail yard on its western end – an area that would make an excellent interpretive and visitor facility. The corridor travels near the Glendale commercial center, including a market and bowling alley. The end of the reach is at the edge of Blue Lake and near the recently-constructed Blue Lake Casino. Construction of this section of trail would potentially facilitate (depending on which alternative is selected) ease of access to the Elementary School in Blue Lake by Glendale schoolchildren, as well as to other recreational and commercial facilities in Blue Lake. The Glendale market is the only market in the area, and would be more accessible to non-motorized travelers from Blue Lake.

E3. Constraints

The Glendale Reach presents many complications for trail development. The corridor passes through active industrial sites, very close to a number of homes, and through the middle of an active agricultural operation and residence. The four crossings of Glendale Drive are generally in locations of poor sight distance and relatively high speed and/or industrial traffic, offering a significant potential for conflicts between motorized and non-motorized traffic. Restoration of a trail on the original corridor also includes the costly construction and restoration of the historic Mill and Minor Creek Trestles.

Opposition to use of the original corridor as a trail has been expressed by a number of Glendale citizens due to potential land use conflicts as well as traffic conflicts. This has traditionally been an area of land use conflict, which is not new with the conversion to a trail – trail users, however, would present a different set of conflicts than trains. In addition to the complicated nature of the Glendale Reach, there are potentially numerous alternatives for re-routing a trail – several of which were initially investigated but are not discussed in depth here due to their impractical nature. Of those investigated, five potentially viable alternative routes are presented in the following section, “Alignment Alternatives.” Additional route possibilities are included for thoroughness in “Other Considered Routes.”



The A&M corridor in Glendale bisects industrial operations and crosses Glendale Road three times.



Portions of the corridor in Glendale are next to agricultural operations.

E4. Alignment Alternatives

The four Glendale Reach trail route alternatives that would not utilize the original corridor have one main characteristic in common: they parallel State Route 299 in some fashion. One alternative is on the north side of SR 299, one is on the south side, and one crosses under SR 299 mid-reach. Aside from technical and cost issues, a primary consideration for reasons to locate a trail corridor either through the community of Glendale (on the existing corridor) or along State Route 299 (assuming permission and easements are granted) is how the trail would serve the public: one route would better serve the community of Glendale for daily use, and the other would better serve the public for through-travel.

Glendale Reach A

Glendale Reach Alternative A would utilize the existing corridor through Glendale and into Blue Lake. As noted in the corridor description above, the route crosses Glendale Drive four times, bisects several industrial and agricultural operations, crosses an existing and a missing trestle, and is very close to a number of residences.

Drainage recommendations for this reach include approximately one mile of grading and a moderate amount of clearing/grubbing and additional base. Native fill will be required for a twenty-foot section of trail, which lies approximately one-half mile east of the Kernan Construction site, where the corridor is only five feet wide as it crosses over a forty-two inch corrugated metal pipe encased in a fifty-two inch corrugated metal pipe covered with approximately eight feet of four-by-six timbers overlain by six-inches of base. It is recommended that this pipe be removed and replaced and the timbers replaced with engineered fill.



The corridor bisects an agricultural operation north of the SR 299 underpass.



The corridor crosses under SR 299 in the community of Glendale.

Concerns

- This alternative presents numerous opportunities for conflicts with passenger and industrial traffic.
- This route passes through several industrial and agricultural sites. The owners and operators of these sites have expressed strong opposition to the use of the corridor as a trail.
- The restoration of Minor Creek Trestle adds approximately \$350,000 to trail development on the Glendale Reach and poses potentially significant environmental impacts.
- Additional permitting research is necessary for restoring Minor Creek Trestle through wetlands.
- A number of adjacent landowners have expressed opposition to a public trail placed in close proximity to their residences.

Support

Some Glendale and Blue Lake residents expressed their support for location of a trail on the original corridor, passing through town, as a safer route parallel to the narrow Glendale Drive. Other residents expressed support for a trail on the corridor passing by their back yard. A wheelchair-bound neighbor to the corridor expressed support for this alternative to offer safer local travel. The public is generally supportive of any alternative that provides a continuous trail route, though there are a variety of opinions about the positive and negative aspects of a trail through Glendale versus south of Glendale.

Glendale Reach B



A trail could potentially be located between Glendale Road and SR 229 – with permission of the County and Caltrans.

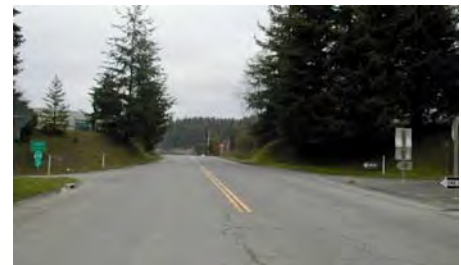
The second option presented for the Glendale Reach departs from the original corridor just north of the first SR 299 underpass. The trail would parallel Glendale Drive and SR 299, instead of crossing the Glendale Drive and entering D&T Lath. This route would follow Glendale Drive for 530 feet to Mad River Storage (APN 516-161-005), and then it would follow SR 299 behind Mad River Storage in the Caltrans right-of-way next to and above the freeway on-ramp. Where the trail would be located adjacent to Glendale Drive, the trail would require some form of grade or physical separation from the road – and utility poles are currently located in this path.



There is space for a trail between SR 299 on- and off-ramps and private parcels to the north in Glendale.

At the intersection with the SR 299 on- and off-ramps access road, Alternative B would cross the road on a one hundred-foot bridge. Bridge construction options include: a cast-in-place concrete bridge, a prefabricated steel truss bridge, or a prefabricated composite bridge. East of the bridge, Alternative B would continue along the Caltrans right-of-way, south of private commercial (mini-storage) property (APN 516-16-103) – adjacent to and above the freeway off-ramp. Bridge footing elevations on either side of the access road are relatively the same, simplifying bridge construction.

Beyond the off-ramp, the trail would continue east slightly below SR 299. This would require brush and tree removal and construction of a retaining wall to create a foundation for the trail on an SR 299 fill slope. Another bridge would be required to span Mill Creek, very close to the beginning of the SR 299 Glendale off-ramp. This bridge would be approximately thirty-two feet in length and would take the place of the proposed reconstruction of the Mill Creek Trestle along the original corridor.



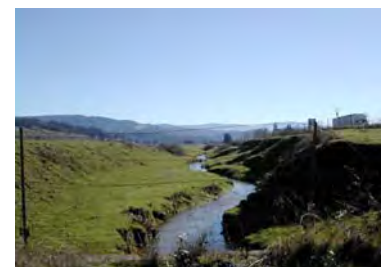
A 100-foot bridge would be required over this Glendale SR 299 access road.

After the crossing of Mill Creek, the trail would continue east along, and inside of the southern boundary of the agricultural property (APN 516-17-108 and APN 516-17-109). The trail would follow the edge of the agricultural pasture until the trail intersection with SR 299 just before the Blue Lake undercrossing. Fencing is recommended to provide a buffer between the pasture and the trail.

East of Mill Creek, the trail would be built north of the eroding stream corridor where Minor Creek feeds into Mill Creek. There is very little room on the south side of the ditch to place a trail of adequate width. However, the land north of the drainage ditch appears to have several areas of instability where the land is undergoing erosion. Additional retaining features are recommended to assure trail stability through this area. This alternative would incur the expense of constructing bridges over Minor Creek and the Glendale/SR 299 access road.

Concerns

- Alternative B would include the expense of bridge crossings at the Glendale/SR 299 access road, Mill Creek, and Minor Creek and a retaining wall adjacent to SR 299.



The banks of Mill Creek are unstable and may not be appropriate for a trail or bridge.

- The pasture area around the confluence of Mill and Minor Creeks may not have sufficient stability for a multi-use trail.
- An easement for the trail would be required from the County adjacent to Glendale Drive, Caltrans, and a private agricultural property owner.
- The agricultural property owners are opposed to this alternative, as it would pose impacts to agricultural uses on their property. This family has given up land to a former re-route of the railroad and a significant amount of land for development of SR 299. They are not interested in further reducing the agricultural viability of their property.

Support

Several residents and adjacent landowners support this alternate. Industrial landowners in Glendale are supportive of alternatives that route the trail away from their properties. The public is generally supportive of any alternative that provides a continuous trail route, though there are a variety of opinions about the positive and negative aspects of a trail through Glendale versus south of Glendale.

Glendale Reach C

The third alternative for the Glendale Reach is similar to Alternative B, however west of the Mill Creek crossing the trail would remain in the Caltrans right-of-way, just north of SR 299. Alternative C would reconnect with the original corridor in the same location as Alternative B: just before the Blue Lake SR 299 undercrossing. Most of this alternative would be located in state right-of-way.

Approximately 7,300 feet of fencing would be required between the trail and the freeway. Drainage features may be required for this section where a trail would be below the adjacent pasture.

Concerns

- This segment would require Caltrans’ permission to build a trail in the SR 299 right-of-way.
- Bridges to cross Glendale Drive and Mill Creek would be relatively expensive.

Support

Residents and public at the public forum and landowners at the landowner’s forum strongly supported this alternative.

Glendale Reach D

Glendale Reach Alternative D would follow the same route as Alternatives B and C from the west, however, after bridging Mill Creek the trail would follow the (private) gravel road leading to the Eureka Ready-Mix gravel operation south under SR 299 to the Simpson Train Company property (APN 516-16-104). After the SR 299 undercrossing, the trail would cross the gravel road (APNs 516-17-107 and APN 516-17-106) and continue east in the Caltrans right-of-way. Alternative D would place the trail on the south side of Caltrans right-of-way adjacent to SR 299 for the easternmost



Alternative C would involve use of the Caltrans SR 299 right-of-way for a trail between the highway and private land.



This private SR 299 undercrossing would be shared with industrial truck traffic in Glendale Alternatives D and E.

portion of the reach and would rejoin with the original railroad corridor just south of the SR 299/Blue Lake railroad undercrossing and end at Chartin Road in Blue Lake.

Concerns

- This trail route would present conflicts with industrial truck traffic on a private road, and would require an easement for use of that road. Sight visibility at the SR 299 undercrossing is poor, and this road is also not structurally sound where it is being eroded by the Mad River.
- Bridges to cross Glendale Drive and Mill Creek and a retaining wall would be relatively expensive.
- The private gravel road in question is currently experiencing severe erosion by the Mad River and appears to be unstable.
- This segment would require Caltrans' permission to locate the trail in state right-of-way.

Support

No indication of support was noted for this alternative.

Glendale Reach E

Alternative E would locate the trail completely on the south side of SR 299. East of the historic rail yard, the route would not pass under SR 299, but would follow an existing (and fairly steep) river access and footpaths on the adjacent private vacant parcel owned by Simpson Train Company (APN 516-16-104).



This (steep) volunteer river trail access just east of the Glendale rail yard would be used in Alternative E.

The trail would be located for the most part along the northern boundary of the parcel, parallel to SR 299, until reaching SR 299 Glendale Drive on- and off-ramps, along the bank of the Mad River for approximately 750 feet. This portion of the trail would be benched and anchored into the bank above the Mad River and below SR 299. A bridge of approximately thirty-two feet in length would be required for this route to carry the trail over the mouth of Mill Creek.

After crossing Mill Creek, Alternative E would cross the gravel road leading to Eureka Ready-Mix and continue east in the Caltrans right-of-way to the original railroad corridor and Chartin Road as described in Alternative D.

Concerns

- Construction of a trail on some portions of this route may present significant cultural resource concerns.
- This route may not be sufficient to support a trail at an adequate height and distance away from the river. Additionally, the trail may be susceptible to washout, damage, or general instability during times of high flow where it would be directly above the Mad River.
- This trail route would present conflicts with industrial truck traffic on a private road, and would require an easement for use of that road. Sight visibility at the SR 299 undercrossing



The trail would need to be located adjacent to and south of SR 299, perched above the Mad River.

is poor, and this road is also not structurally sound where it is being eroded by the Mad River.

- This route would require Caltrans' permission to locate the trail on state right-of-way.

Support

No indication of support was noted for this alternative.

Other Considered Routes

There are a number of other alternatives briefly investigated in the Glendale area. The following alternatives were considered, but determined to be infeasible and further analysis was not performed.

- As a modification of Alternatives D and E, the eastern portion of the route could closely follow the Mad River, south of Eureka Ready-Mix. This alternative was not investigated further because of the instability of the Mad River in its flood plain. Placement of the trail on this alignment may subject it to a high risk of damage due to flood or river channel meandering. This alignment also places the trail on private property, requiring an easement, and also crosses three gravel truck access roads.
- Another alignment initially investigated derived from a concern that a detour should be made around the industrial sites in Glendale. The alignment would connect with Alternative B as the corridor crosses over Mill Creek. The trail would follow northeast along the gravel road to the Kern Construction property where it would run east west along the southern border of the site. The trail would reconnect with the original corridor east of the Kern Construction site. Further investigation was not performed on this alignment because of the indirect nature of the route. The property southwest of the Kern Construction site was not physically investigated, however there is some indication that the area may be a jurisdictional wetland. The route also skirts several private parcels where opposition may be met.
- The trail could also be aligned to extend from Alternatives B, C, or D to travel northeast along the east bank of Mill Creek. The trail would reconnect with the original corridor west of the intersection of Mill Creek and Glendale Drive. This short alternate route would allow the corridor to bypass a portion of Glendale's industrial area. This alignment was not investigated further because of its indirect nature. The area along Mill Creek is also a riparian zone or may be a jurisdictional wetland, requiring significant and costly drainage features.

E5. Recommended Trail Alignment

The five alternatives for the Glendale Reach were compared using the assessment criteria ([Appendix G](#)). The preferred route was identified as Alternative C, which departs the original A&M corridor in Glendale's commercial district to travel east to Blue Lake along the northern side of SR 299 ([Table 6.4](#)).

Establishment of a trail in state highway right-of-way will require California Transportation Commission approval, based on studies indicating no other trail alternative is viable. The most relatively 'insurmountable' odds hampering pursuit of the other four alternatives are 1) particularly high costs and/or 2) significant safety issues. Additionally, the majority of Glendale landowners who participated in this effort expressed support for a trail in the community if it did *not* cross or come in close contact with private parcels, which will not be possible on the original rail corridor. Landowners who feel like they would be particularly impacted by other alternatives – some of whom would need to provide right-

of-way for trail development – have said they would fight trail development. Most residents, business owners and members of the public expressed support for Alternative C.

Table 6.4
‘Alternative assessment criteria’ scores for the Glendale Reach.

	Glendale A	Glendale B	Glendale C	Glendale D	Glendale E
Support	1.5	0.5	2.5	0.0	0.0
Environmental Interaction	0.0	1.5	1.0	0.5	1.0
Cost	2.25	0.75	1.5	1.5	0.0
Compatibility with Rail Return	1.0	0.5	0.5	0.5	0.5
Total Score	4.75	3.25	5.5	2.5	1.5

The scores for Alternatives A and C are not appreciably different, however due to the level of support for Alternative C and the level of complexity and high cost of Alternative A, Alternative C is recommended as the preferred trail route.

E6. Recommended Trail Support Facilities

Trail support facilities should include a parking area in Glendale for trail users to access the trail. Fencing sufficient to retain horses – potentially to impede uncontrolled freeway vehicles – will be required between the trail and SR 299. Interpretive signs could provide information about Mill Creek and agricultural operations.

F. Blue Lake West Reach: Chartin Road to Hatchery Road

This reach is approximately one and a half miles long as it parallels residential Railroad Avenue and



Along Railroad Avenue, where there are no facilities for pedestrians, the corridor crosses driveways and public streets.

travels into downtown Blue Lake (Figure 6.7). The Blue Lake West Reach begins at Chartin Road, crosses five private driveways before passing City Hall, crossing Broderick Street, passing adjacent to the Blue Lake Museum (former railroad depot) and G Street. The (no longer standing) Powers Creek trestle is also located in this reach, north of the Blue Lake Emporium and west of the Hatchery Road/H Street crossing, where this planning reach ends. The restoration of this reach into a functional trail will require minimal drainage improvements, grading, clearing/grubbing, and base material. It will also require reconstruction of the recently-built curbs and sidewalks on Chartin Road.

Figure 6.7, Blue Lake West Reach Map

(back-to-back page, b&w, 8.5x11)

F1. Key Characteristics

The Blue Lake West Reach falls entirely under the City of Blue Lake's jurisdiction. The adjacent land uses are residential and commercial, including the Blue Lake Casino and the commercial downtown center. There has been a significant increase in vehicular traffic on Chartin Road since the casino opened in 2002. This reach would provide a non-motorized facility parallel to Railroad Avenue. It will provide an improved non-motorized connection between the Blue Lake Rancheria and downtown Blue Lake.



The corridor passes through downtown Blue Lake, adjacent to the former depot-turned-museum.

F2. Key Connections



The new bocce courts are busy with tournaments and recreation in Blue Lake's Perigot Park.

The Blue Lake West Reach would provide a connection between the downtown area, the town park, the Rancheria and residential areas. It would also serve essentially as a wide, multi-use sidewalk next to Railroad Avenue, which is lacking any pedestrian or bicycle facilities. Public facilities along this reach include Perigot Park and Prasch Hall recreational facilities (ball fields, skating rink, new playground, bocce courts, and restrooms) the Blue Lake Museum (housed in the original AMRRR depot), City Hall, Railroad Park, the Blue Lake mural, Powers Creek, and other historic structures in downtown.

F3. Constraints

The recent reconstruction of Chartin Road included a roundabout and sidewalks, as well as construction of sidewalk and curbs directly over the A&M corridor. Reconstruction of this road crossing will be necessary for either rail or trail use. A number of adjacent residential driveways also cross the corridor along Railroad Avenue, with which trail designs will have to be compatible. The bridge over Powers Creek, destroyed in late 1997 storms, will need to be completely reconstructed.



The corridor parallels Chartin Road in Blue Lake, where recently constructed sidewalks and curbs are paved over the A&M corridor.

F4. Recommended Trail Alignment

The original A&M corridor is the recommended alignment.

Concerns

No significant concerns were identified along this reach; thus no alternative routes were investigated.

Support

There is strong public support for a trail on the existing corridor in the City of Blue Lake and the City Council has supported the idea.

Representatives of the Rancheria shared suggestions at the public forum. They suggested that trail lighting should be directed downward to avoid excess lighting in the neighborhoods through which the trail passes. They also shared their opposition to any use of pesticides along the trail and their concern that cultural sites be left undisturbed along the entire corridor. They have strong interest in being consulted on interpretive signs and the use of native plants for landscaping along the trail. They would be interested in working in cooperation with trail manager/s, possibly in a “trail steward” role.



One small trestle over Powers Creek was destroyed in late 1997 and will need to be replaced..

F5. Recommended Trail Support Facilities

If the Museum were ever expanded to honor California’s first railroad, downtown Blue Lake would have a destination and the city would be a warm host. Public restroom facilities already exist near the corridor at Perigot Park.

G. Blue Lake East Reach: Hatchery Road to Mad River Levee

This reach is approximately three quarters of a mile long between downtown Blue Lake and the rail corridor intersection with the Mad River levee to the east (Figure 6.8). The Blue Lake East Reach begins at the Hatchery Road/H Street intersection and, on the original corridor, crosses several private access roads. After crossing Shamrock Lane, the Blue Lake East Reach follows the toe of a steep embankment with pastures to the south and Blue Lake Boulevard paralleling the corridor above to the north. The corridor is also roughly paralleled by the Mad River levee to the south, a portion of which was opened to public access in late 2002.



Walkers now have access to the western portion of the Mad River levee.

The restoration of the Blue Lake East Reach into a trail can be achieved with minimal drainage improvements, grading, and additional base material. However, the reach will require extensive clearing/grubbing as thick blackberry brush has overgrown the corridor adjacent to pastures.

Figure 6.8, Blue Lake East Reach Map

(back-to-back page, b&w, 8.5x11)

G1. Key Characteristics

Land neighboring the corridor is commercial and residential in the downtown area, agricultural in the pastures to the east of town and residential on the bluff above the corridor. Significant downtown neighbors to the corridor in this reach include the Mad River Grange and the Logger Bar. Pastures east of town are used for dairy cattle grazing. Vegetation becomes increasingly dense as the corridor leaves Blue Lake, with riparian and evergreen influences along the bank between Blue Lake Boulevard and the pastures. The Blue Lake East Reach ends at the intersection of the corridor and the Mad River levee. This reach also includes the crossing of a private gravel access to cow pastures. The corridor leaves city limits approximately one quarter mile east of the junction with Hatchery Road.



Looking east from H Street, the corridor is between the historic Grange and Logger Bar buildings.

Other facilities involved with these alternatives include the Blue Lake Business Park Trail Loop (partially completed) and the publicly-accessible section of the Mad River levee. Hatchery Road is also slated for improved bicycle facilities in the next year. There is an existing walkway and sidewalk along the west side of Hatchery Road that currently provides access to the trail loop and levee from downtown. The City of Blue Lake also has funding to install bike lanes on Hatchery Road in the next year.

The ‘squatter’ community called ‘Henshaw Flats’, located at the eastern end of this reach, is currently under scrutiny by Humboldt County, who is apparently attempting to evict the residents. This area has been identified by public and adjacent landowners as a potential concern for trail users.



The Blue Lake Business Park Loop Trail is under development – this portion on the levee is in use.

G2. Key Connections

The Blue Lake East Reach would provide a non-motorized alternative to Blue Lake Boulevard, however the function of this corridor will depend on which alternative is selected. Also, it would provide connections to key downtown services, potentially the Blue Lake Business Park Trail Loop and/or Mad River. Hatchery Road is slated to receive bike lanes between town and the Mad River in the next year.

G3. Constraints

Much of the Blue Lake East Reach borders pastureland where adjacent landowners oppose use of the corridor as a trail. Landowners have expressed their opposition due to a loss of privacy and cattle disturbance resulting from public use of the levee and the rail corridor. This has traditionally been an area of land use conflict. If a trail is developed in this area, careful design that addresses landowner concerns – including privacy, adequate fencing, protection of dairy



The rail corridor, immediately below this perspective, is adjacent to active agricultural operations.

cattle from disturbance, trespass, and vandalism – will be of utmost concern to assure that the trail will be a good neighbor.

One landowner along this reach feels that the NCRA has an easement to operate on the corridor, and that he owns it in fee title. Assessor's office records indicate ownership by the NCRA, however additional research is required to confirm ownership of the corridor along the eastern end of this reach.

G4. Alignment Alternatives

These three alternatives provide an option on the corridor, and option off of the corridor, and a 'loop' route that is some of both.

Blue Lake East A

Alternative A is located on the original railroad corridor as it leaves downtown Blue Lake and proceeds as described above to the junction with the Mad River levee and its floodgate. Approximately 3,000 feet of clearing and grubbing is required in areas of thick blackberry overgrowth, while minimal amounts of drainage improvements and grading are required. Fencing is recommended to minimize disturbance of cows in the pasture north of the levee.



East of town, the overgrown corridor is below residences and adjacent to pasture.

Concerns

- Adjacent landowners with agricultural operations oppose this alternative.
- A title search will be necessary to confirm ownership of the easternmost portion of the reach.
- If the trail were to end at the Mad River levee, and not continue on to the east or south, the likely result would be trail management problems, as there often are at 'dead end' road or trail situations.

Support

There is strong community support for use of the original corridor as a trail. The community seemed more supportive of an alternative that is not a 'dead-end' trail.

Blue Lake East B

Blue Lake East Alternative B is similar to Alternative A, but instead of a dead-end at the levee, would include additional trail to form a loop on the Mad River levee back into Blue Lake and Hatchery Road. The trail would transition to on-street bicycle and pedestrian facilities on Hatchery Road that would connect back to downtown and the beginning of the reach.

While Alternative B is the most costly, it would add approximately 7,000 feet to the A&M corridor, thus making it the longest of the Blue Lake alternatives. The placement of the trail along the levee and Hatchery Road would not require additional grading, clearing/grubbing, or drainage modifications. Approximately 200 cubic yards of native fill will be required for



One option for trail development is to create a loop trail from the A&M corridor to the Mad River levee.

Alternative B to connect the rail corridor with the levee. Approximately 5,200 feet of fencing is also recommended where the corridor follows the levee to minimize disturbance of the cows in the pasture north of the levee.

Several landowners own property adjacent to and possibly under the levee. Two of these landowners have provided input that they are not supportive of trail development adjacent to their properties: the westernmost landowner (APNs 025-08-201, 025-16-112, 312-14-112, 312-15-115, and 312-15-119), and easternmost landowner (APNs 312-14-122 and 312-15-103). In addition, another landowner is adjacent to the Mad River levee (APN 312-15-116) between the pastures and Simpson Timber Company lands. After a long period of contention, the western portion of the levee east of Hatchery Road was recently determined to be accessible to the public. The eastern portion of the levee is not currently accessible to the public, nor is the landowner interested in providing public access.

Concerns

- Adjacent landowners with agricultural operations are opposed to this alternative. A primary concern is that some uncontrolled use of private property will occur to ‘cut’ through pastures at existing gates and access roads. Another primary concern is that agricultural operations in the area will be essentially surrounded by recreational use, and the likelihood of disturbance to dairy operations (particularly by dogs on, or off, the trail) would be greatly increased.
- Fill would be required to elevate the trail from the rail corridor to the levee.
- Some residents suggested trail design be unobtrusive to the natural areas surrounding the corridor.
- This route will include six additional road and driveway crossings as it travels along Hatchery Road.

Support

There is strong community support for use of the original corridor as a trail. There is also strong support for use of the levee as a public corridor and as a loop return to Blue Lake. The recent dispute regarding the public use of the western portion of the Mad River levee (east of Hatchery Road) has been settled and the public easement has been confirmed by the state Attorney General’s office. Several residents expressed support of the Blue Lake East B, with design that accommodates livestock. When discussed at a March 2003 Blue Lake City Council meeting, councilmembers generally agreed that this alternative is the long-term priority for a trail route.

Blue Lake East C

The third alternative for Blue Lake East Reach would end the multi-use trail at Hatchery Road and join with sidewalks/bike lanes along Hatchery Road and provide a connection with the Blue Lake Business Park Trail Loop. Alternative C would connect with approximately 1,800 feet of (existing or soon-to-be existing) bicycle and pedestrian facilities between the corridor junction with Hatchery Road and the Mad River levee.

Concerns

- This route will include six additional road crossings onto the trail as it runs along Hatchery Road.



Now that there is access to the eastern levee, parking and access along Hatchery Road are issues.

- The original rail corridor will not be utilized in this alternative, however non- permitted uses of the corridor will likely persist.

Support

Adjacent landowners preferred this alternative, and the public seemed to find it less desirable. When discussed at a March 2003 Blue Lake City Council meeting, councilmembers generally agreed that this alternative could serve as a good short-term solution until Alternative B could be developed.

G5. Recommended Trail Alignment

Scores for Alternatives A and C are not appreciably different (Table 6.5), when compared using the alternatives assessment criteria (Appendix G). Additionally, the length of Alternative B substantially increased its cost above (and reduced its score below) that of the other alternatives – though Alternative B would provide more trail surface area for that cost. The recommended approach for this reach is that of the Blue Lake City Council: to connect the A&M corridor with the City’s Business Park Loop in the short term, and to pursue development of Alternative C in the long-term by working cooperatively with adjacent landowners. Though Alternative A scored relatively highly in the quantitative assessment, a ‘dead-end’ trail would serve very few and cause management problems, and is not recommended as the approach for this reach.

Table 6.5
Alternative assessment criteria scores for the Blue Lake East Reach.

	Blue Lake East A	Blue Lake East B	Blue Lake East C
Support	2	2	1.5
Environmental Interaction	1.5	1	1.5
Cost	2.25	0.75	3
Compatibility with Rail Return	1	1	0.5
Total Score	6.25	4.75	7.0

G6. Recommended Trail Support Facilities

Near agricultural lands, appropriate fencing is very important, and should be designed with landowner consultation. In whatever form this trail takes, interpretive information should be included. If the trail borders private ag lands, private property etiquette and agricultural interpretation signs are recommended. Benches on the levee would be appropriate, as would improved trailhead parking in the downtown and levee areas.

H. Korbel Reach: Mad River Levee to Korbel

H1. Key Characteristics

The Korbel Reach, approximately three-quarters of a mile in length, is the last A&M corridor planning reach, and is almost entirely owned by Simpson Timber Company (Figure 6.9). This section of the corridor is outside city limits, and begins at the Mad River levee floodgate. The corridor travels south of and below Blue Lake Boulevard, adjacent to a ‘squatters’ encampment, through riparian forests, and to the industrial Simpson Timber Company lumberyard.

The corridor bisects the lumberyard for approximately one-quarter of a mile before traveling along the south side of Blue Lake Boulevard. The corridor is adjacent to Blue Lake Boulevard in this area – a road heavily traversed by industrial traffic. The corridor crosses to the north of Blue Lake Boulevard and terminates at the Simpson Timber Company manufacturing facility in Korbel.



The A&M rail corridor crosses Blue Lake Boulevard as it enters the community of Korbel.

H2. Key Connections

This reach would connect the Mad River levee and the community of Korbel. It would provide a safer non-motorized connection between Blue Lake and Korbel, for locals as well as for others including cyclists who use Blue Lake Boulevard to access the popular ‘Butler Valley’ cycling loop. Land use in this area is mostly commercial timber operation and a small amount of residential. The historic North Fork Mad River Bridge and ‘Arrow Tree’ site are both located near the end of the corridor in Korbel.

H3. Constraints

The Korbel Reach begins at the Mad River Levee floodgate, thus the floodgate would have to be opened to allow for use of the corridor.

Simpson Timber Company owns most of the corridor in this reach and has expressed opposition to development of a trail to or into its industrial operations.



The North Fork Mad River Bridge in Korbel is gateway to the popular ‘Butler Valley’ cycling route.

Figure 6.9, Korbel Reach Map

(back-to-back page, b&w, 8.5x11)

H4. Alignment Alternatives

No alternatives to the Korbel Reach were investigated.

Concerns

Simpson Timber Company, owner of the corridor within this reach, is not supportive of trail development, due to their concerns about incompatibility of trail use with their operations and management of the corridor.

Support

While little public input was received on this segment, some citizens and members of the Blue Lake City Council have expressed interest in a trail that connects the two communities.

H5. Recommended Trail Alignment

Based on the opposition and private ownership of the corridor along the Korbel Reach, it is recommended that the A&M Rail-Trail terminate at either end of the Blue Lake East Reach.

H6. Recommended Trail Support Facilities

If the Korbel Reach is implemented and used as the eastern trailhead of the final corridor, it is recommended that a parking area be incorporated into the design.

J. Summary of Alignment Recommendations

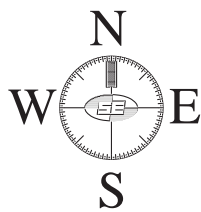
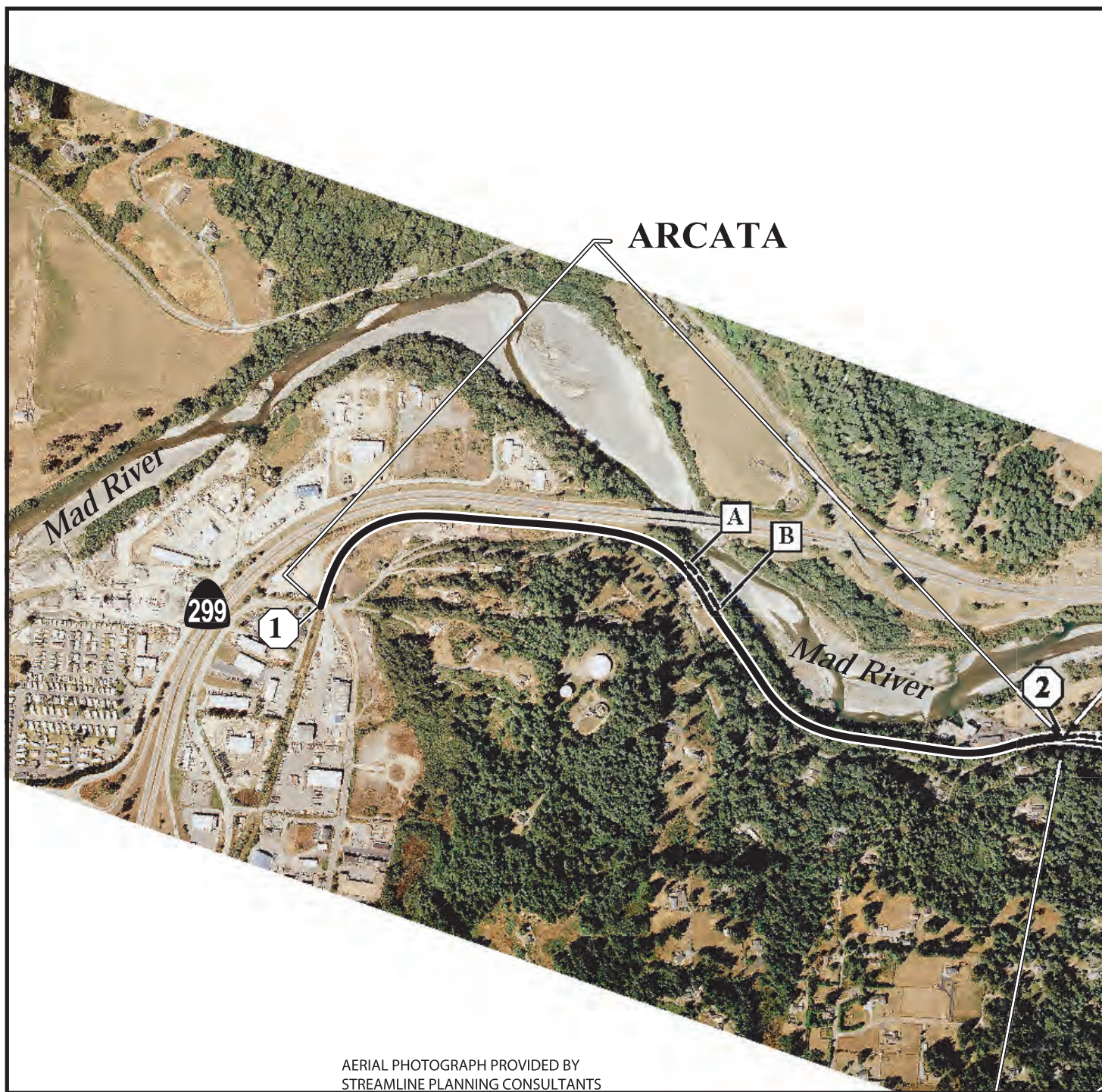
Based on the previous analysis, [Table 6.6](#) presents a summary of recommended alternatives for the proposed A&M Rail-Trail.

Table 6.6
Comparison of Alignment Recommendations and Costs (priorities in italics).

Reach	Preferred Alignment	Feasibility Issues	Estimated Cost (1,000)*
<i>Arcata</i>	<i>Alternative B: original corridor, with 600 feet of trail slightly below grade to improve privacy for adjacent landowners.</i>	<i>More costly than at-grade trail, however the trail will be a better ‘neighbor’ with this design.</i>	\$825
Parks I	Alternative A: original corridor, but with as many accommodations for the adjacent landowner in question as possible.	Shared use and privacy design issues will need to be addressed individually with adjacent landowners to ensure the trail is a good neighbor.	\$1,600
Parks II	Alternative A: original corridor and trestles.	Retrofit of the trestles, not to mention maintenance of them, introduces a substantial cost increase to trail development, however their historic significance and visual role on the corridor (as well as the logistical difficulty of re-routes) make the original corridor the preferred choice.	
Bridge	Original corridor.	Full retrofit of the bridge and approach trestles will be costly – though partial retrofit for minimum trail structure needs could be possible.	\$1,710
Glendale	Alternative C: almost completely separate from the original corridor and parallels the northern side of State Route 299.	The public and most agencies seem to feel that pursuing approval of Caltrans right-of-way encroachment is much preferable to the myriad of design and safety problems presented on the original corridor through Glendale.	\$1,115
Blue Lake West	<i>Original corridor.</i>	<i>This of all reaches is probably the most immediately developable as a city facility: driveway/road crossings and Powers Creek trestle replacement are the main issues.</i>	\$350
Blue Lake East	<i>Alternative C: as a short-term approach, the trail would end at Hatchery Road and connect with the City’s Trail Loop.</i> (Alternative B: as a long-term approach, the trail would connect the A&M corridor, Mad River levee and Hatchery Road to form a loop.)	<i>From the perspective of trail users, development of both options is ideal, but landowner needs and concerns must be addressed. If land uses change east of Blue Lake, trail development may be less of a concern to adjacent landowners – hence consideration of Alternative B as a ‘long-term’ option. In either case, bike/ped facilities on Hatchery Road will also need improvement.</i>	\$17
Korbel	Not recommended for trail development at the current time.	Unless Simpson Timber Co., who owns most of the corridor in this reach, wishes to pursue trail development in the future, it would not be developed as a trail.	\$0

*Not including additional right-of-way access acquisition. See [Chapter 7](#) for details about cost estimates.

Figure 6.2 - Arcata Reach: Arcata City Limit to Water District Park 1



0 1000 feet

LEGEND:




-  ALTERNATIVE ROUTE
-  PUBLIC ROAD CROSSING
-  NON-PUBLIC ROAD CROSSING

Figure 6.3 - Parks Reach I: HBMWD Park 1 to Warren Creek Road

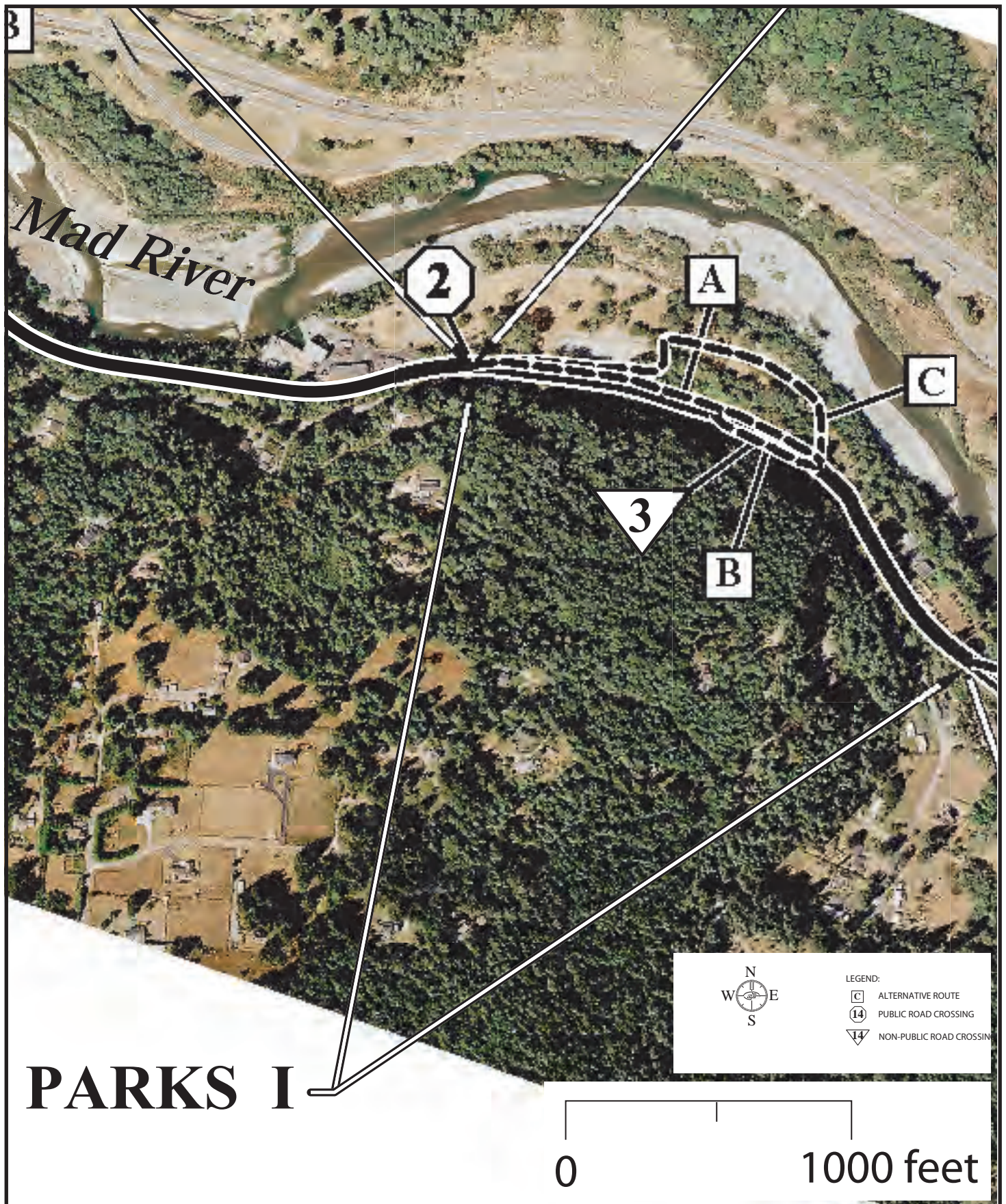


Figure 6.4 - Parks Reach II: Warren Creek Road to Water District Park 4



Figure 6.5 - Bridge Reach: Water Park 4 to Glendale

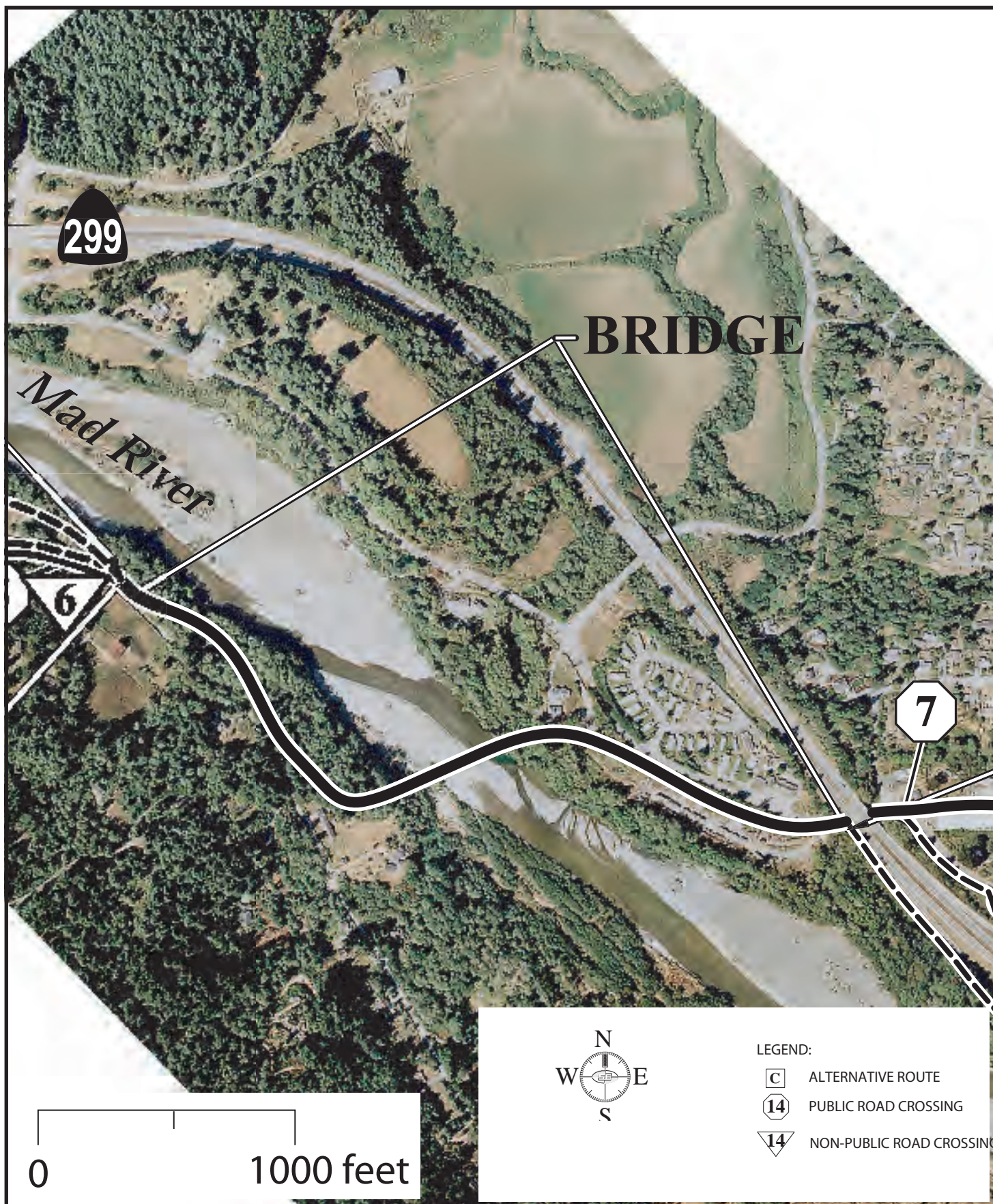


Figure 6.6 - Glendale Reach: Downtown Glendale to Chartin

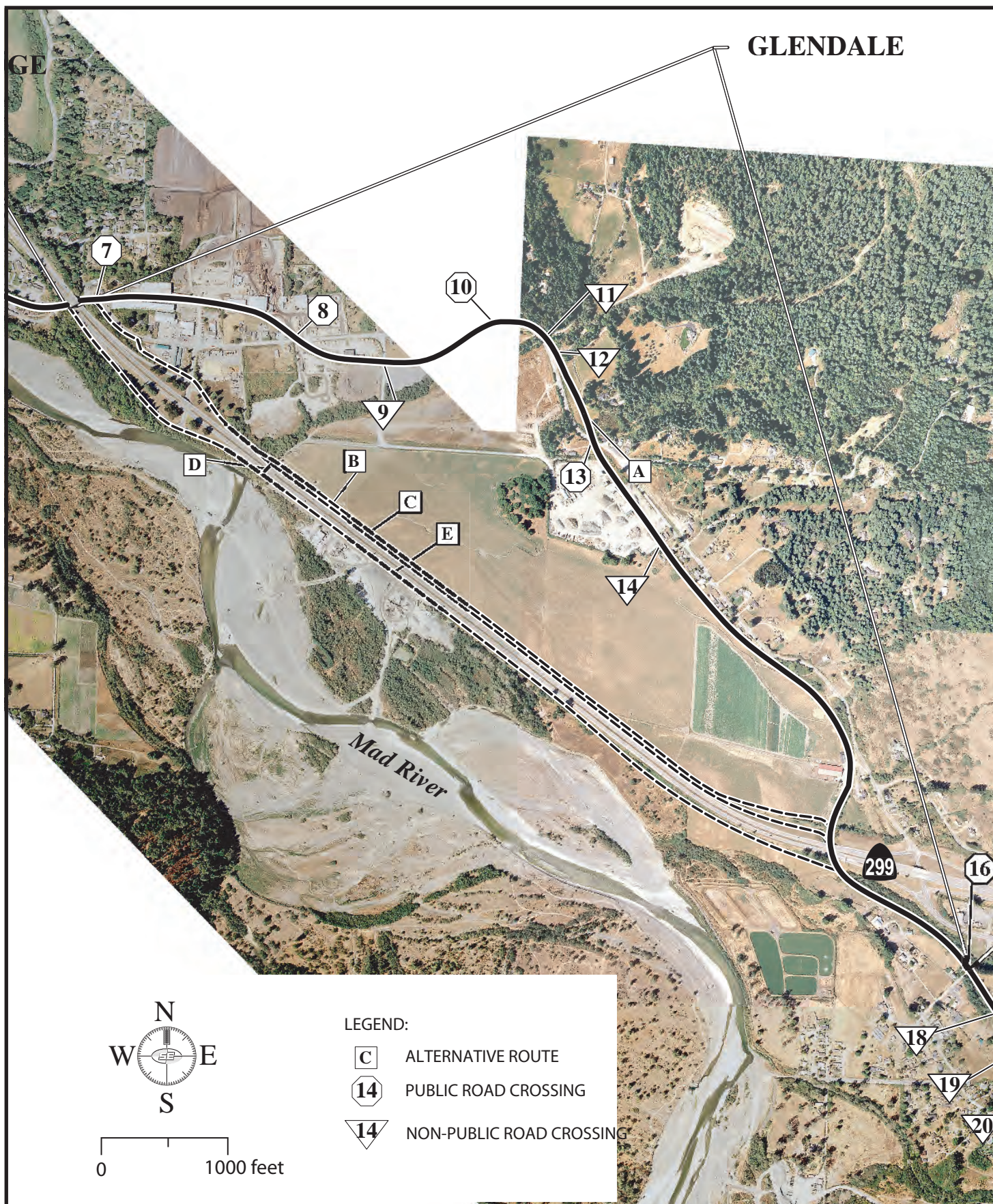


Figure 6.7 - Blue Lake West Reach: Chartin Road to Hatchery Road

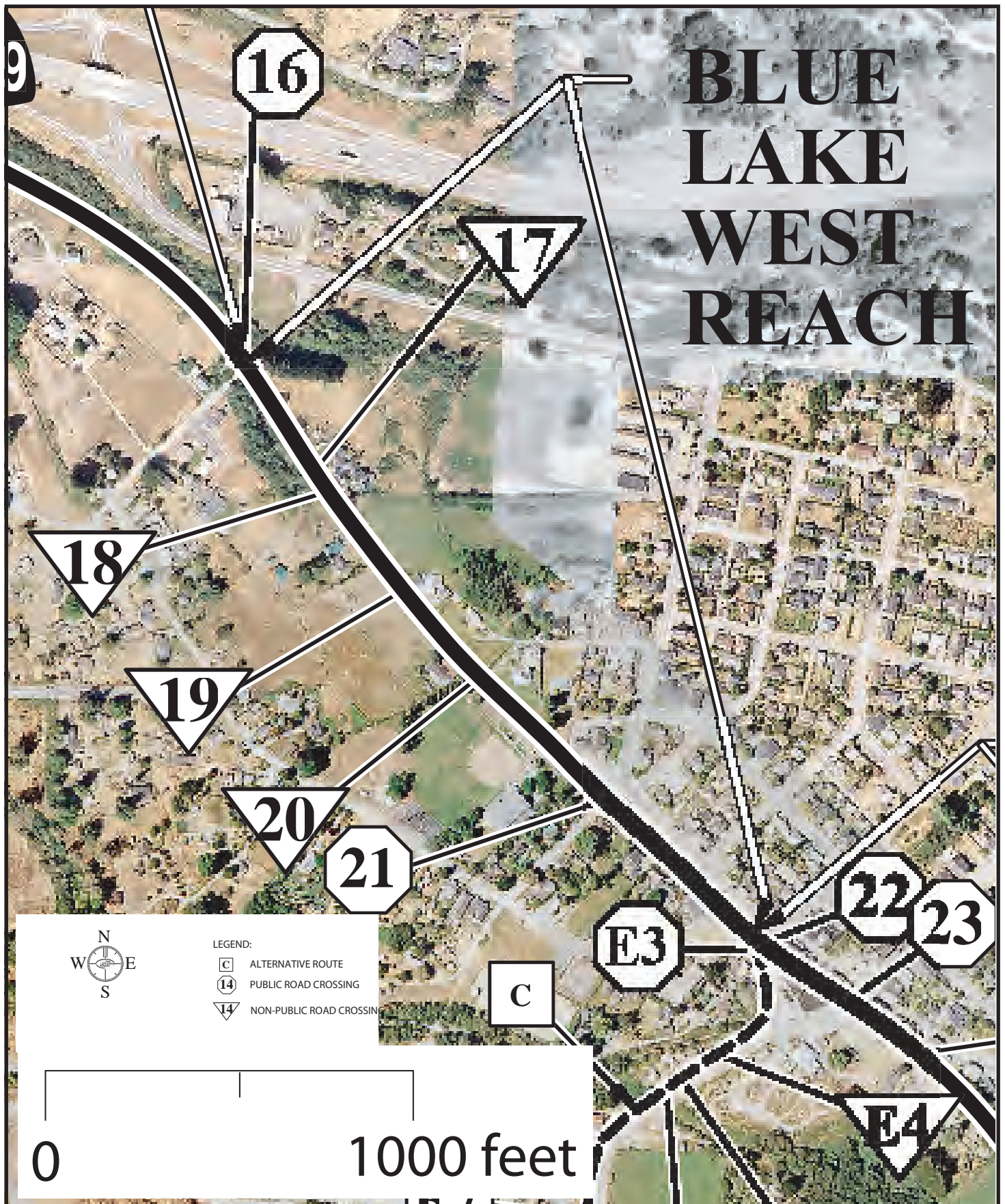


Figure 6.8 - Blue Lake East Reach: Hatchery Road to Mad River Levee

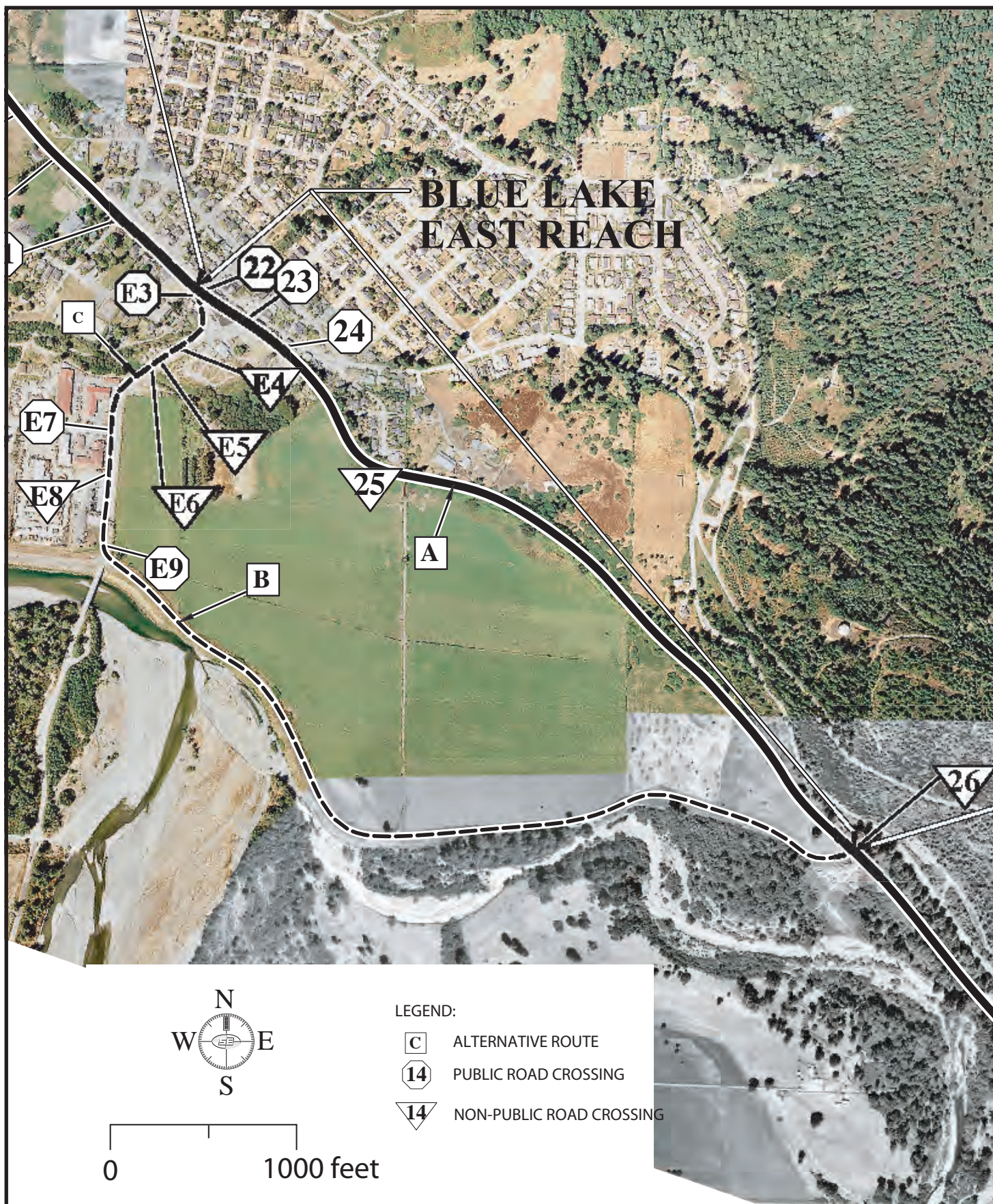
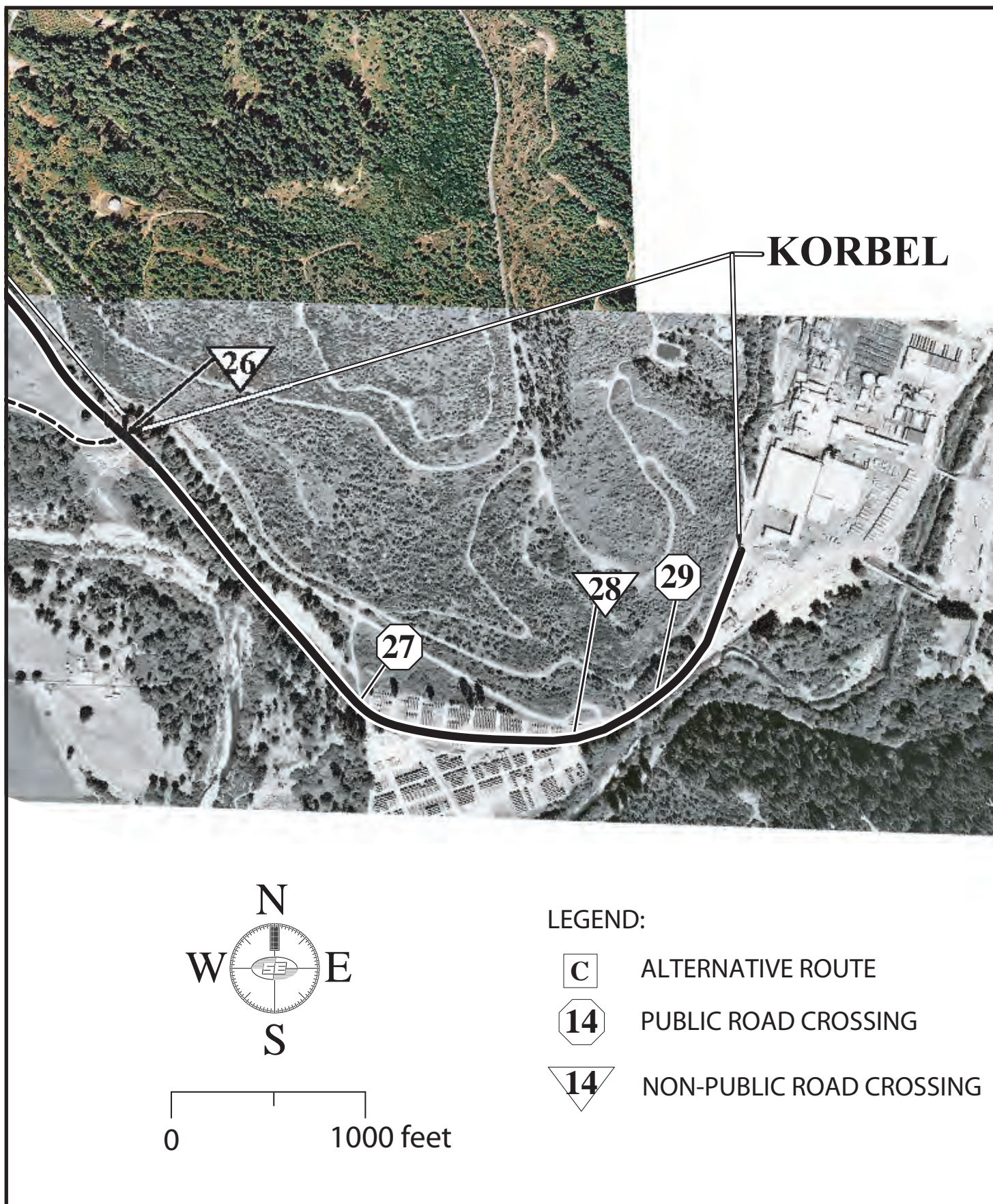


Figure 6.9 - Korbel Reach: Mad River Levee to Korbel



This chapter describes options for creation of a trail management entity, and the development of effective trail management and maintenance plans for the proposed A&M Rail-Trail. Information is provided regarding the major issues, activities, and tasks involved in managing the corridor as a trail. Proper management will assure its safe operation, guarantee proper maintenance, provide an enjoyable experience to its users, and create a positive image within the community. All of these are necessary to assure the trail's long-term viability as a public facility.

A. Operating An A&M Rail-Trail: General Principles

If the A&M corridor is developed as a trail, there are a number of common issues and specific considerations for which to plan. Operations coordination, trail regulations, and inclusion of adjacent landowners are three important needs to consider before other management issues are addressed.

A1. NCRA Transfer of Responsibility to Trail Management

For the purposes of this management research, it is assumed that the NCRA will allow interim trail use of the A&M corridor, and most likely through use of the federal railbanking statute. In the event that NCRA elects to take advantage of the federal railbanking statute, the agency would sell, lease or donate fee title interest or easement to the trail management agency or authority. Under the railbanking statute, a railroad can legally transfer all forms of its ownership to a trail management agency (Rails-to-Trails Conservancy, 1996). If the NCRA railbanks to itself, it will have the ability to determine how to and/or whom should manage the corridor (or parts of the corridor) as it deems necessary.

A2. Coordination of Operating Responsibilities and Procedures

Multi-use trails (or "shared use paths") are defined by AASHTO (American Association of State Highway and Transportation Officials) as "a bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way." In addition to bicyclists, multi-use trails may be used by pedestrians, wheelchair users, equestrians, joggers, skaters (depending on the surface), and other non-motorized users.

A multi-use trail is a unique public facility because it blends two distinct purposes. On one hand, it is a non-motorized transportation corridor that in many respects must be managed like a roadway to assure user safety; on the other hand, it also serves a variety of recreational user groups. Multi-use trails must also co-exist with adjacent property owners, whose interests can be quite different from that of trail users. Managing such a facility poses a unique challenge to jurisdiction/s with management responsibilities.

These unique challenges require that a clear management model be developed for each new multi-use trail facility. This chapter analyzes several typical models in the specific context of the A&M corridor.

Operation of a multi-use trail is as important as its design, and will have a large impact on how the public perceives the trail as well as the agency that manages it. Operating a trail is an on-going process

that will require adjustment as accumulated experience will dictate what does and does not work. The first step for the trail manager is determining which agency, department, organization or person will be responsible for each of the activities involved in operating a trail. Key agency relationships include:

- Maintenance staff and volunteer coordinators to determine a maintenance schedule for routine trail surface cleaning and brush clearing;
- Traffic operations division for sign replacement and intersection traffic control; and
- Police and fire departments for developing emergency response procedures.

Formal agreements between departments will be needed to assign responsibilities and determine financial responsibilities.

A3. Developing Trail Use Regulations

The purpose of trail regulation is to promote user safety and enhance the enjoyment of all users. It is imperative that before the trail is opened trail use regulations are developed and posted at trailheads and key access points. Trail maps and informational materials should include these regulations as well. Establishing that the trail facility is a regulated traffic environment just like other public rights of way is critical for compliance and often results in a facility requiring minimal enforcement. The trail manager may even want to post penalties for violators. An attorney should review trail regulations for consistency with existing ordinances and enforceability. In some locations, it may be necessary to pass additional ordinances to implement trail regulations.

Below is a sample of the most common items that should be posted as trail regulations:

- Hours of use;
- Motor vehicles, other than power assisted wheelchairs, are prohibited;
- Respect adjacent properties: stay on the public trail corridor;
- Keep to the right except when passing;
- Yield to on-coming traffic when passing;
- Bicycles always yield to pedestrians and equestrians;
- 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;
- Do not stand in middle of trail when stopped; and
- Speed limit.

Trail Closures

Trails, or sections of trail, must be closed from time to time during construction and periodic maintenance of the trail. Trail users will need to be managed during these closures. The following recommendations should mitigate any impacts:

- Develop standard operating procedures that should be followed prior to the trail closing, including a variety of means to inform the public, and make sure crews that implement the closure are clear on these procedures.

- Trail users must be warned of impending trail closures, and given adequate detour information to bypass the closed or unfinished section of trail. It is important to use standard signing at the entrance to each affected section of trail (“Trail Closed”), including, but not limited to information on alternate routes and dates of closure.
- Sections of the trail that are closed must be gated or otherwise blockaded and clearly signed as closed to public use.
- If the trail is closed, alternate routes should provide a reasonable level of directness on low traffic volume streets, where feasible, and should be signed consistently. If no reasonable alternate routes are available, an “End Trail” sign should be posted, with access to the street system.
- If the jurisdiction has a website, closure/detour information should be posted there.
- Every effort should be made to keep the closure period as short as possible.

A4. Working with Adjacent Property Owners

Usually, once a trail is built and open for use (assuming trail designs are appropriate), most of the concerns expressed prior to completion of the trail by adjacent property owners gradually fade as imagined scenarios fail to materialize (Rails-to-Trails Conservancy, 1998). Nonetheless, adjacent landowners are going to be most sensitive to the way a trail is managed, and rightfully so, since they are the trail’s neighbors. Therefore, how the trail manager deals with issues raised by adjacent residents will become an important aspect of overall trail management.



In places along the A&M corridor, like here in Glendale, residences are very close and will need special consideration for trail management.

- Facilitate Communication with Neighbors: Adjacent interests should have access to the trail manager, and be provided with contact phone numbers for the departments that handle routine trail maintenance. This will enable residents to contact the proper person if a problem arises. Residents should be kept informed of any changes in trail operations and involved early in any major trail rehabilitation or expansion projects.
- Respond Quickly to Adjacent Concerns: Neighbors should be treated like clients. Responding quickly and efficiently to problems they identify lets them know that they are important to the successful operation of the trail.
- Keep the Trail Well-Maintained: A well-maintained trail is probably the best thing that can be done to keep neighbors happy. Close attention should be paid to the operation of driveways that cross the trail to access property and landscaping in those areas should be well-trimmed to prevent any safety problems from developing. Any graffiti should be removed as quickly as possible.
- Carefully Monitor Parking Areas: Parking lots are the most likely place for problems, so if the trail cannot avoid locating one in a residential area, monitoring its operation should be a high priority. Adjustments should be made if adjacent residents start to complain about disturbances.

One of the most persistent patterns in the development of trails on existing rail corridors is the belief of property owners abutting the trail corridor that they will become targets of lawsuits if the trail is developed. This fear, which has largely proved groundless, is one of the hurdles trail managers must face during the trail planning process. This concern usually evaporates once the trail is open and

operating. Nonetheless, nervous neighbors can become an insurmountable obstacle in the early stages of trail development, so it is important to be able to explain exactly how liability will be addressed.

Adjacent Encroachments



Lack of rail management has resulted in a diversity of encroachments along the corridor.

Sometimes abutting landowners take advantage of the public nature of a trail and encroach on it for private uses. Typically, this could mean dumping on the trail, creating an opening in a fence for direct access to the trail, or even moving a private fence into the trail right of way. One of the most common encroachments is to use the trail corridor as a private access road (though in many instances this can be eliminated with proper trail design and appropriate use of bollards). Along the A & M corridor, encroachments include parking vehicles on the corridor, putting fences across it, and blocking it with cement barriers. In some cases, if the encroachment does not harm the integrity, operation or aesthetics of the trail, the trail manager might try and negotiate a lease with the property owner to turn the encroachment into legal use. The most important objective for the trail manager, however, is to treat all issues involving neighbors (and the neighbors themselves) as consistently as possible.

Developing on Adjacent Properties

Changes in land use adjacent to the trail can have a significant impact on the quality of the trail experience. Incompatible uses can create safety hazards, complicate operations and tarnish the aesthetic and recreational appeal of a trail. However, land use is not easily changed when consistent with existing zoning laws.

The key to effective trail management in these situations is to:

- Make sure the local land use department keeps the trail manager informed of permit applications;
- Stay in touch with friendly neighbors and property owners who may know of expected developments;
- Work with developers early in the planning process to make sure the interface between the development and trail is appropriately designed; and
- If a proposed development would have significant impacts on the trail and its function, ensure that all affected parties (including trail advocacy groups) are informed about the project, the impacts, and any process established for reviewing the proposed use.

Adjacent Property Owners Who Do Not Provide Public Easements

It is unlikely that many landowners adjacent to the A&M corridor will not be considering public easements to their land. However, there may be cases where a short trail access route or other use of adjacent property would be mutually considered. Adjacent property owners who do not provide property for public access are sometimes concerned about potential liability issues. The main protections against lawsuits are trespassing laws. Trail users who wander off the trail corridor onto private property are given at least “duty of care” in most states. “Duty of care” is a standard that makes landowners responsible to use common sense care for conditions on their land that a trespasser might encounter. Landowners generally are not deemed responsible for unsafe conditions, unless these are the result of deliberate or reckless misconduct. However, because a greater “duty of care” is given to child trespassers in many states, trail managers may want to advise trail neighbors to remove any “attractive nuisances” accessible from the trail.

Adjacent property owners should take other common sense precautions to reduce risk of lawsuits. For example, an adjacent property owner located on a trail curve should avoid placing a shrub or a fence exactly at their property line, especially if there is little clearance between the edge of trail and the property line. This could create a visual obstruction in the sight lines of trail users that could contribute to an accident. Trail managers (who may also be liable in this situation if they fail to assure adequate clearance in their trail design) should encourage property owners to avoid these and other similar scenarios. Vegetation will likely be planned to create privacy buffers for residents, but it should be carefully managed to avoid visual obstruction related to safe trail use.

Most landowners feel it is prudent to purchase standard liability coverage, however there is no indication that owning property next to trails requires additional or special insurance coverage. According to the Rails-to-Trails Conservancy (2000), “there are no special or surprising problems associated with rail-trails or trails in general from the point of view of legal liability or risk management”.

Adjacent Property Owners Providing Easements

In the rare case that a landowner adjacent to the A&M corridor may consider to provide an easement for public use, the following information will be helpful. Private property owners who provide recreational access to their land by the public are protected from liability by the California Recreational Use Statute (Civil Code §846). This law provides private property owners with immunity from liability for injuries sustained by persons using the property for recreational purposes. This protection extends not only to landowners but also to others with an “interest in the land” such as leasehold estates. Landowners are not required to make their property safe for trail users under trail easement or other agreements allowing recreational access. The broad application of the statute to cover all recreational purposes means generally that landowners are free of liability associated with trail use. Negotiation of specific agreements will require the involvement of legal professionals knowledgeable about the California Recreational Use Statute.

There are numerous specifics regarding liabilities associated with particular land uses that cannot be presented here. Of course, in spite of the protection afforded by the statute, landowners will always be susceptible to being sued. Even if the statute is found to immunize a landowner from liability, in the process of defending the suit the landowner will incur court costs and attorney’s fees. For this reason, landowners granting easements may demand an indemnity clause in their agreement to cover the costs of defending against lawsuits. Again, all parties involved in a trail access agreement must consult with appropriate legal experts prior to finalizing any agreement.

B. Trail Management Agency

Before any significant planning or permitting efforts can be completed, the A&M corridor needs to be ‘adopted’ by one or more entities that can assume managerial, financial and legal responsibility for it. There are numerous working models for management of multi-use trails, rail-trails and railbanked trail corridors, in particular. The following is an assessment of both the possibilities in and interests of local entities managing the corridor as a trail.

B1. Jurisdictional Analysis

The A&M corridor spans three local government jurisdictions: the City of Arcata, City of Blue Lake, and outside city limits, County of Humboldt. It is also adjacent to lands owned and managed by (and in some places, shares the corridor with facilities of) the Humboldt Bay Municipal Water District.

The relationship of the trail management agency(ies) to the NCRA will depend on the NCRA position regarding trail implementation and management, however it is assumed that the NCRA will railbank the corridor and that the corridor will be sold, leased or donated to trail management agency/ies.

B2. Potential Trail Management Agencies

There are a number of issues involved in forming a trail management agency or authority. Two primary concerns are; 1) the organization that is best suited to manage an A&M Rail-Trail and 2) the key activities a trail management agency should be prepared to administer.

The A&M corridor passes through multiple communities and local government jurisdictions, necessitating the development of cooperative agreements between multiple agencies in order to assure consistent management of the trail. The first steps in establishing a trail management agency include:

- Identification of local agencies with jurisdiction over the trail corridor;
- Determination of agency interest and financial capability to undertake management responsibility of a new trail facility;
- Identification of an appropriate management model for the new trail facility based on capabilities of potential agency participants;
- Development of draft agreement outlining roles and responsibilities of agencies involved, including designation of lead contact agency, if appropriate;
- Identification of funding for trail operations and maintenance; and
- Adoption of trail management standards.

These are key steps in determining who will manage the trail facility and how. Many intermediate and subsequent steps are not specifically outlined in this chapter. These steps involve negotiations between legal representatives of the various local agencies that may participate in management of the specific trail corridor. These negotiations will typically involve the heads of appropriate local government departments (e.g. Director of Public Works, Environmental Services, or Parks and Recreation) and the City or County attorney from each jurisdiction.

In the case of rails-with-trails, additional considerations are required. For the purposes of this study, it is assumed that the A&M Rail-Trail will be developed as a trail facility occupying the existing A&M right-of-way. No consideration for management of a rail-with-trail facility, involving siting and use of a trail immediately adjacent and parallel to an operating railroad, is given in this document.

A regional parks, trails and open space district does not currently exist in Humboldt County, however this type of model could be another potential trail development and management scenario.

B3. Management Agency Research

One of the primary (and priority) trail development considerations is which potential management agencies have the interest and capability to manage a trail. Additionally important is to provide them with an estimation of what it will require to maintain a trail on the corridor. Agencies managing rail-trails or other multi-use trails in the region and around northern California were interviewed for this information.

Local Agencies

Research for this chapter consisted of interviews with local government agency representatives and review of similar trail corridor management models. The following section briefly summarizes the results of the A&M Rail-Trail management interviews conducted as a part of this *Feasibility Study* (Appendix J).

The project team conducted interviews in order to document the current desire and capabilities of local agencies to undertake management of the proposed A&M Rail-Trail.

The A&M Rail-Trail would extend through the jurisdictions of the City of Arcata, Humboldt County, and the City of Blue Lake, with a number of options as to which local agency should manage the trail.

The following agencies were interviewed as a part of the *A&M Rail-Trail Feasibility Study*:

- Humboldt County Department of Public Works
- Humboldt County Community Development Department
- Humboldt Bay Municipal Water District
- City of Blue Lake
- City of Arcata Community Development Department
- City of Arcata Environmental Services Department



The Water District and the County are both concerned about bridge maintenance.

General findings from the agency interviews include the following:

- Each of the agencies has existing trail or park development and management responsibility.
- None of the agencies interviewed has the capacity to undertake new trail management responsibilities without additional management and maintenance funding.
- Agencies responsible for management and maintenance of existing trails in the project vicinity have trail development and maintenance standards appropriate to application on the A&M Rail-Trail.
- Local agencies are comfortable partnering both with other agencies and with non-governmental organizations, as required, to implement and maintain the A&M Rail-Trail.
- None of the agencies interviewed was identified as a clear choice to serve as a primary trail management contact as a result of the interviews.

These general findings support the concept of a cooperative or integrated management agreement between the local agencies that share jurisdiction over the A&M Rail-Trail corridor.

In ongoing communications with the Blue Lake City Council, they have indicated their interest in pursuing trail development (and taking responsibility for maintenance) within city limits (Blue Lake

City Council, 2003). They have no funding for either trail development or maintenance, however they seem dedicated to seek out opportunities for such funding.

Other Trail Management Scenarios

There are also potential trail management scenarios that do not currently exist or are not currently applicable. As mentioned above, one option is formation of a regional parks, trails and open space district. There are numerous models for how these types of districts are funded and managed. During this management interview process and in other trail and public access planning efforts at NRS, it has become clear that most local governments and districts that manage trails and parks do not feel that they have the resources to maintain what they have, nor do they have the resources to pursue the kinds of funding and facility expansion planning efforts that the public would support. A regional trails, parks and open space district would have its own taxing authority – support for this type of tax is referenced in Chapter 4 – and would have a staff dedicated to planning, development and maintenance of potentially all the local jurisdictions’ parks, trails and open spaces.

Also as previously mentioned, if the corridor is determined to be of state historic interest and rail service is deemed no longer feasible in the long-term, the California Department of Parks and Recreation (DPR) could be a potential manager of the corridor as a State Historic Park. The Humboldt Redwoods District of DPR, headquartered in Eureka, manages a number of both large and small state parks in the region, including Azalea State Reserve, just off of SR 200, across the Mad River from the A&M corridor, Little River Beach State Park, and Humboldt State Historic Park in Eureka. Again, this would be a long-term consideration, made if at any point the NCRA determined it could no longer hope to restore service.

Other Rural Trail Management Agencies

Hammond Trail

The Hammond Coastal Trail, the only multiple-use Class I facility in Humboldt County, is managed and maintained by the County Public Works Department. The development of the trail has been in phases with small sections constructed as individual projects. Maintenance needs along the Hammond Trail vary greatly with location. For example, some sections are along roads and need little attention, while others are completely enclosed by dense vegetation. There are no trash receptacles, bathrooms or other facilities that are managed by the County along the Hammond Trail. The primary maintenance issue is brush clearing along trail segments with vegetation. County staff estimated maintenance costs for 2001 at \$8,000 and costs for 2002 to be around \$9,000 (Walsh, 2002). The estimates include labor and materials for general maintenance but do not include major improvements, such as resurfacing. With most of the maintenance occurring in about 4.5 miles of trail, a rough estimate for the maintenance cost ranges from about \$2000 per mile of trail with heavy vegetation and few, simple trail structures.

Truckee River Trail

The Truckee River Trail manager, Bob Bryant said that this Tahoe Trail was created in the 1970’s and described the funding as “a community effort”, a combination of state, and local monies (Bryant, 2002). Caltrans funded its construction, but did not want to maintain it. It is managed by the state through a public utilities district. The trail runs from Truckee to Tahoe City along SR 89 and the Truckee River. It also runs down the west shore of Lake Tahoe along SR 89. The county and the California Highway Patrol assist in the maintenance and patrol of the trail in spring and summer seasons when it is utilized

by close to 300,000 users. Maintenance consists of snow and ice removal, and sweeping. Bryant considers it an asset to the community, and emphasized that besides recreational use, it is essential for the populations who don't drive (youth, low income, and senior residents).

Midway Bike Path

The Midway Bike Path runs along an old railroad grade south of Chico. Butte County obtained an easement in the early 1990's and utilized grant funds to construct the trail. It is managed and maintained by the county. Mike Crump, Director of Butte County Public Works, described it as low maintenance, including occasional weed removal and slurry sealing. He says, "It is well used, everyone enjoys it, but mostly bike riders. The public really enjoys it and there is no other safe place for them to ride," (Bryant, 2002).

Mesabi Trail

St. Louis and Lake Counties Regional Rail Authority (RRA) manages the Mesabi Trail in the Iron Range of northern Minnesota. The Rail Authority was initially created to manage the North Shore Scenic Railroad – a passenger train service for tourists.

In 1986, RRA became aware of the interest and support for the development of the 132 mile Mesabi Trail through the rural communities of the Iron Range. The RRA decided that its mission 'to protect and preserve abandoned railway for future transportation purposes' made it the perfect catalyst to take on the project (Manzoline, 2002). The RRA lobbied for funds and was awarded an initial grant in 1993 which established them as the administrative and managing entity. To secure funding for maintenance and management the RRA has the power to levy taxes. In addition, they utilize a 'wheel pass' for all bicyclists, skateboarders, and so forth, over the age 18 who use the trail. A trail user can buy a two day pass for \$3 or a yearly pass for \$12. These funds help offset maintenance costs for the authority.

Currently the trail has over 87 miles completed. The trail runs through very rural and remote areas as well as through the center of several small communities. The RRA has agreements with each community that transfers maintenance responsibilities to the City where the trail runs through their jurisdiction (Appendix I). In most cases the city is responsible for all ongoing general maintenance such as, vegetation clearing, litter removal and upkeep of amenities, while the RRA is responsible for rehabilitation of the trail. This type of agreement is utilized to ensure consistent management throughout the trail corridor.

B4. Trail Management Options

The following three management options are discussed below:

- Trail Management Option 1: Integrated Management
- Trail Management Option 2: Joint Powers Authority (Phased)
- Trail Management Option 3: Designated Lead Agency(ies)

Trail Management Option 1: Integrated Management

For various reasons, it may be difficult to work out a formal arrangement (such as a Joint Powers Authority) for joint or regional management of the A&M Rail-Trail. In this scenario, it is advisable for the jurisdictions to agree on an integrated management strategy to achieve consistency in the design, operation and maintenance of the trail facility as it passes from locale to locale. This would entail agreeing to a uniform set of trail regulations, a consistent signage and striping plan, an aesthetic standard for landscaping and ancillary facilities, a set of common maintenance standards. Such uniform regulations will contribute to overall user satisfaction with the trail and will help minimize operational inconsistencies in the absence of an overarching management agency. In the case of the A&M corridor, the NCRA should be a member of the integrated management team if they are interested, if for no other reason than to improve communication and improve response to issues and concerns that develop.

Establishment of an integrated management scheme will require the development of a memorandum of agreement (MOA) between the participating local governments, with clear identification of the responsible agencies that will participate in the management and maintenance of the trail facility. MOAs for this purpose range considerably in the level of specificity describing the responsibilities of the participating agencies. A sample MOA is included in [Appendix I](#).

Agencies participating in an MOA for the A&M Rail-Trail would likely include:

- City of Blue Lake
- Humboldt County, Department of Public Works
- City of Arcata, Department of Environmental Services
- Humboldt Bay Municipal Water District
- NCRA (depending on type of ownership/management agreement)

According to an MOA, each jurisdiction would maintain the segment of the trail falling within its jurisdiction according to consistent management standards, as described above.

Analysis of Option 1

Benefits of each agency operating independently to implement and manage the trail under an integrated management agreement include low start up costs and avoidance of additional layers of government and administrative requirements.

Each of the agencies signed on to the MOA would be required to cover the costs associated with trail management and maintenance within their jurisdiction, however, the results of the agency interviews conducted for this chapter indicate that none of the above listed agencies have the required financial and personnel resources to undertake management of the A&M Rail-Trail. Additional budget allocations will be required at a local legislative level in order for an MOA of this type to become operational.

Negative aspects of this arrangement include the likelihood that little momentum would be created as the trail was developed piecemeal. With each jurisdiction financially constrained and unable to commit to trail development and maintenance beyond the bare minimum requirements it is unlikely that the vision of a truly unique community resource would evolve.

Trail Management Option 2: Joint Powers Authority (Phased)

The Joint Exercise of Powers Act, California Government Code 6500-6599.1, (JEPA) authorizes governmental entities to combine their efforts to implement programs or policies which cross jurisdictional lines, enabling a regional approach to issues such as transportation, land use, schools, libraries, or utilities. JEPA enables jurisdictions to exercise regional power and implement tools in circumstances that are inter-jurisdictional and regional in nature. JEPA applies statewide and is scalable to fit geographic and organizational size needs.

The creation of a Joint Powers Authority (JPA) for the A&M Rail-Trail could be phased as decided appropriate by participating local governments. The reason for creating a JPA in the early stages of development of the A&M Rail-Trail would be to establish an agency with long-term management and fundraising capabilities.

The following provides a rough outline of how phasing might proceed. During an initial phase, the JPA would likely consist of board members only and would work contractually and collaboratively with NGOs including but not limited to the RCAA and perhaps with member local governments. Phase I would encompass: securing implementation funding, contracting for the first phases of trail construction, and development of trail management and maintenance standards. Trail maintenance during this first phase would be completed by contract and volunteer labor. The second phase would consist of an expansion of powers of the JPA to take advantage of local funding mechanisms and an initial staffing of the organization to provide core financial and administrative services and trail maintenance services (local funding mechanisms are discussed in Chapter 8). The third phase would proceed with completion of the substantial capital improvements required along the A&M Rail-Trail at key bridge locations (requiring greater funding than construction of initial trail segments) and incorporation of additional regional trail facilities under the JPA umbrella. In this third phase the JPA would operate under a potential combination of local tax and bond funding, state and federal grants.

Joint Powers Authority Board Membership

The Joint Powers Authority (JPA) Board could be composed of one elected official each from the County of Humboldt, the City of Arcata, the City of Blue Lake, and one board Member each from the Humboldt Bay Municipal Water District and the North Coast Railroad Authority. An additional public member representing the Citizens Advisory Committee, described below, would also be appropriate.

Citizens Advisory Committee Membership

A citizen advisory committee (CAC) to the JPA can provide a direct link to supportive community members and organization and can facilitate development and management of the trail when member local government agencies are still building political support and funding for the JPA. The CAC would function as a standing committee of the JPA. It is responsible for advising the JPA Board on trail management matters and serves to coordinate volunteer work efforts. CAC meetings are intended to provide an open forum for community discussion on trail management related issues; to organize and implement special community events that will acquaint the public with the A&M Rail-Trail; and to gather and disseminate trail-related information to residents and property owners within and adjacent to

the trail corridor. This committee could be created from the existing Friends of the Annie & Mary Trail and could include representatives from professional organizations, property owners along the corridor, and interested planning, environmental and interest organizations.

Analysis of Option 2

Benefits of the JPA include a freestanding administrative structure and a separate Board of Directors. Several water and sewer service providers across the state, as well as open space and trail districts approximate this arrangement. Another advantage would be to give the management entity greater independence to pursue its mission. Local governments could still maintain significant influence through membership on the Board and annual budget allocations. In addition, the agency could provide greater consistency and economies of scale in managing the corridor.

Disadvantages would include less direct control by local governments and a potentially greater administrative burden if the agency was housed in separate office. The suggestion for phasing the powers, responsibilities and financial obligations of the JPA has the potential to alleviate these disadvantages in the early stages of trail development and maintenance (sample JPA agreement available in [Appendix I](#)).

Substantial additional research would be required to determine the political feasibility of this option. Nonetheless, numerous other regions have adapted this model to fit their needs with great success in trail development, management and maintenance.

Trail Management Option 3: Designated Lead Agency(ies)

Local governments in California are expressly authorized to enter into interlocal agreements for any purpose. This makes sense in the case of the A&M Rail-Trail because some of the local agencies along the trail corridor have trail management capabilities and others do not. Under such an agreement, the lead agency would be responsible for operating and managing the trail corridor, while all costs are shared equally between the jurisdictions. Each year, the managers of the contributing agencies and jurisdictions develop an operating budget and submit it to their elected officials for approval.

In the case of the A&M Rail-Trail, it would be possible to arrange for one (or several) local agencies (governments) to manage different segments on behalf of the others. Another possibility would be for one (or several) agencies to provide certain management functions for the entire length of the trail, with each agency (government) providing the remaining tasks on an individual basis.

Potential lead agencies for the A&M Rail-Trail include Humboldt County Department of Public Works and the Humboldt Bay Municipal Water District. According to the results of the management interviews, neither of these agencies would be able to undertake this lead agency role without the identification of additional funding for management and maintenance, nor without specific policy and administrative changes. These issues are discussed further below under the analysis section.

Analysis of Option 3

Benefits of this arrangement would include greater management consistency throughout the length of the trail. It would offer a probable overall cost savings by limiting the number of agencies providing service, thereby achieving some economies of scale. In addition, all participating jurisdictions would retain a measure of control through the annual budgetary approval process.

The negative aspects of this approach would be the continued need for multiple approvals for the annual budget, creating more work for the trail management staff, and continued coordination challenges if several jurisdictions shared the management function.

The following issues apply if the Humboldt County Department of Public Works serves as a lead agency for trail management and maintenance. Under the regional distribution of TEA-21, additional maintenance funds are available as counties construct additional miles of trail. It is also likely that the County could obtain funds for A&M Rail-Trail facility development and maintenance under Proposition 12 and 40 per capita distributions. These and other dedicated funds would be required for the County to undertake the additional trail management and maintenance responsibilities that would be created by development of the A&M Rail-Trail.

Consideration of the Humboldt Bay Municipal Water District (HBMWD) as a lead agency for management of the A&M Rail-Trail will also require further research. The agency does own land adjacent to much of the corridor and manages transmission lines that run adjacent to the corridor, however, according to the HBMWD, they do not actively manage their two public access easements along the A&M right-of-way for public recreation. In addition, only periodic maintenance is completed to reduce fire danger and other nuisances. The agency is willing to work cooperatively with adjacent and overlapping jurisdictions to plan and develop the A&M Rail-Trail. A key concern for the agency is the additional insurance requirements that would be required for the utility to become a trail manager.

Opportunities that the HBMWD could bring to trail development and maintenance relate specifically to rehabilitation and maintenance of the Mad River Bridge and access to their facilities. HBMWD relies on the bridge as a support structure for a main water pipeline and holds substantial interest in rehabilitation of this structure, which is also vital to connect the trail across the river. They also maintain the vegetation from Park 4 to the MRB and in the Arcata Reach from the 299 bridge to Water Park 1. NCRA is currently unable to meet the agreement of HBMWD to rehabilitate this structure. A co-sponsored grant application between HBMWD and other parties committed to trail development could yield quicker access to the required funds. As a public agency engaged in pipeline restoration, HBMWD would be eligible for both the Urban Water Conservation and possibly the Infrastructure Rehabilitation grant programs through DWR Division of Planning and Local Assistance. It assumed for purposes of this analysis, that additional ongoing funding would be available for management and maintenance of capital facilities used by both the HBMWD and the A&M Rail-Trail.

C. Management Agency Requirements

There are very few multi-use trails currently functioning in this region – the Hammond Trail is the only one comparable to the proposed Annie & Mary Rail-Trail. Many potential trail management agencies have concerns about what it would take to manage this corridor as a trail. To ensure that there is clarity about those responsibilities, the following information is provided.

C1. Responsibilities

The following conditions represent the major responsibilities of a trail management agency: These are the minimum responsibilities that would be required of an A&M Rail-Trail management entity:

- Overall coordination and guidance during trail development;
- Organize, coordinate and implement trail operations plan;

- Establish trail user regulations;
- Develop and implement maintenance plan and assure adequate funding;
- Monitor security/safety of the trail through routine inspections;
- Oversee major maintenance and rehabilitation efforts;
- Manage issues that may arise with properties abutting the trail corridor;
- Act as chief trail spokesperson with public, including elected officials, and respond to the issues and concerns raised by trail users; and
- Preserve the linear integrity of the corridor and set policy on non-trail uses of the corridor.

C2. Liability and the Trail Management Entity

The entity that builds, operates and/or manages a trail is the most likely target of a lawsuit should an injury occur on the trail. There are a number of protections for the trail manager.

Eureka attorneys Zwerdling & Crowley researched trail liability and compiled a *Memorandum Regarding Liability of Public Entity for Injuries Sustained on a Paved or Unpaved Hiking or Riding Trail* (October, 1998). Their findings stated that “it would be highly unlikely, if not impossible, for any person utilizing the Annie & Mary Trail to successfully sue any public entity associated with the trail.”

Insurance

Most trails are owned and managed by a public agency or entity that is self-insured under an umbrella policy that covers all governmental activities. Thus there is no additional premium cost associated with the operation and maintenance of a trail. However, while insurance may cover costs associated with lawsuits, it neither prevents suits nor minimizes the risk of court judgments that can cost the public entity a considerable sum of money.

Governmental Tort Claims Acts

California has legislation related to civil lawsuits that establish the limits of government liability for injuries to persons or damage to property resulting from the acts or omissions of government officials. The trail manager should inquire with an attorney on the specifics of this law.

Risk Management

To minimize liability, it is critical to adhere to established standards in trail design, signage and maintenance. This is especially important because a substantial proportion of trail-related lawsuits stem from accidents between trail users who try to blame the incident on the design of the trail. In California, substantial immunity is afforded public agencies that design trails in accordance with widely accepted standards or guidelines, such as the *AASHTO Guide for the Development of Bicycle Facilities*. Other practical measures include:

- Post warning signs for known hazards that are not easily eliminated;
- Post and enforce trail regulations;
- Enact a trail maintenance plan and maintain accurate records;
- Maintain the trail to the level defined in the maintenance plan;
- Inspect the trail regularly for hazards;
- Promptly evaluate and address hazards and maintenance problems reported by trail users; and
- Ensure that there is adequate emergency access to the trail.

These common-sense precautions are indicative of good faith and responsible stewardship of the trail facility, and likely will reduce the number of successful lawsuits or the size of settlements.

D. Easements and Licenses

Before a trail can be developed, the trail managing authority must have the legal right to use the corridor. This section discusses the most common type of property agreements used in multi-use trail development, *specifically in the instance that railbanking is not fully pursued*.

In most instances, fee-simple (i.e., full ownership) acquisition is not necessary for trail development, and in many cases, is not feasible. Much of the A&M Rail-Trail would be located within a publicly-owned railroad right-of-way, subject to other utility and drainage easements. Additionally, for a number of reasons, railroad corridors of any length are not often acquired fee simple. Though railbanking is consequently the preferred method of acquiring inactive railroad rights of way for trail purposes, this information is provided in the event railbanking is not pursued.

D1. Easements

A permanent easement is a non-possessory interest held by one party in another party's land in which the first party is accorded practical use of such land for a specific purpose/s. Easements typically are acquired when the landowner is willing to forego use of the property and development rights for an extended period, or even in perpetuity. The advantage to the landowner is that they retain title to the land while relinquishing much of the liability and the day-to-day management of the property. The advantage to the trail manager is that the price is often lower than a fee interest acquisition, but the interest is sufficient for trail purposes and practical control of surface uses. Moreover, the easement is attached to the property title, so even if the property is sold, the easement survives. Nonetheless, it is important to negotiate the easement agreement with ease of trail management in mind. A model easement should:

- Guarantee exclusive use;
- 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 the trail are property of grantee; and
- Limit grantor indemnification to trail-related activities only.

Because easements are legally-recorded documents, it is imperative that both the trail manager and the railroad operator retain an attorney to assure the easement is drafted correctly as a legally enforceable document. This may be difficult to obtain if the NCRA adopts an interim trail use policy stance.

D2. License Agreements

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), or the owner chooses not to sell because he wants to retain use of and everyday control over the property. The major advantage to the trail management authority is that it can avoid a large outlay of cash, yet still obtain sufficient interest in the property to build and operate a trail. However, with a

license agreement the management agency will have far less control over use of the property, and may be subject to some stringent requirements that complicate trail development and operation. In many instances, the trail manager will not be able to obtain exclusive use of the property.

A license agreement should be avoided by public agencies unless there is no other alternative for obtaining use of the property. While this may be preferable from the perspective of the NCRA, it is less desirable for the trail management agency/ies or authority. In many cases, the duration of the license agreement will impact the availability of funding for trail implementation.

Table 7.1
Major Features of License Agreements

Subject	Why is it necessary?
Term length that satisfies funding agency	Without a minimum number of years guaranteed, many funding agencies will not obligate grants. The minimum is likely to be at least 25 years.
An "option to renew" clause	If this is in the agreement, the chances will be increased that the trail will have a permanent home. If the trail is popular, the landlord will have little choice but to renew the lease.
Description of all conceivable activities, uses, invitees and vehicular types allowed	This should be as broad as possible to include all contingencies to avoid the need for future amendments.
A plan review and approval process for the trail design	The more specifics, especially in setting time restrictions, the better. The point is to avoid letting plan review stall trail development.
Clear, unambiguous language on maintenance responsibilities for property	This can be a sticky issue if some areas of a corridor are "shared-use." Resolve details up front to avoid budgetary surprises later.
Temporary trail closure process	Define situations that warrant closure by the property owner. This ensures that the property owner will not close the trail at will.
Insurance, liability and indemnification	Obviously, this cannot be overlooked in any kind of license or lease arrangement for trail purposes. It is recommended that an attorney write or review the language in this section.
Narrowly tailored environmental liability	Look out for language that shifts aspects of environment liability that pre-date the trail to the trail managing entity.
Specific limits on other uses of licensed property	If limitations are not in place, the owner may decide to open the trail corridor to other incidental uses or events that are not compatible, or possibly harmful, to the trail.
Carefully defined revocability clause	The owner may try to broadly define "cause" for revoking the agreement. Try to narrow it to specific actions, and be sure there is a process in place that limits the ability of the owner to act peremptorily. From the trail manager's perspective, the more process, the better.
Process for amending agreement	This is essential in case some aspect of the agreement is malfunctioning or an unexpected issue emerges.

E. Trail Maintenance Plan

Proper maintenance of the trail is of the utmost importance for the productive use of the facility and the protection of the financial investment the community has made in the trail. Moreover, a less-than-adequately maintained trail will increase liability, reduce trail use, irritate adjacent property owners, and potentially cause political support for trails to dwindle. In short, every effort must be made to organize the necessary resources to keep the trail in good repair.

E1. Maintenance Needs

For planning purposes, maintenance is best considered in terms of frequency. Frequency can vary significantly depending on the type of trail, the local environment, and expected levels of use. [Table 7.2](#) provides a list of typical trail maintenance items, and their associated costs.

Table 7.2
Estimated Annual Maintenance Cost for Seven Miles of Trail.

Item	Estimated Frequency	Estimated Cost
Mowing of 3-ft vegetation zones adjacent to trail	10 times/year	\$4500
Vegetation management	6 times/year	\$1500
Removal of debris from trail and trailheads	12 times/year	\$1500
Trash disposal	24 times/year	\$4800
Repairs to trail furniture/safety features	As needed	\$2000
Repairs to adjacent property fences, etc...	As needed	\$2000
Graffiti removal	As needed	\$500
Maintenance supplies for work crews	As needed	\$1000
Drainage and storm channel maintenance	5 times/year	\$1000
Soft surface trail maintenance	Once/year or as needed due to high rainfall/flooding	\$500
Bridge and trestle decking and structural maintenance	6 times/year	\$6200
Equipment fuel and repairs	As needed	\$2500
TOTAL ESTIMATED COST PER YEAR		\$28,000

The maintenance costs included in the table are provided as a guide to establishing a budget for the operation, maintenance and management of each trail segment within the trail system. These costs are derived from national industry averages and have not been adjusted to reflect unique labor, material and cost issues within the region.

It may be possible to lower the cost of maintaining one mile of paved trail through the development of an Adopt-A-Trail Program. Volunteers have been proven effective in performing some of the routine maintenance activities that are listed below. Savings of 50% of the estimated cost per mile defined

below are possible through a coordinated and well-run Adopt-A-Trail Program, and some of these costs are already being covered along highways, roads and parks and other areas. The Rails-to-Trails Conservancy has completed some research on this topic, and is presented in *Rail-Trails and Safe Communities* (1998). Additionally, recent RTC research on the topic is provided in [Appendix L](#). Another good resource for those interested in volunteer maintenance efforts is the Trails & Greenways Clearinghouse at www.trailsandgreenways.org.



Most of the corridor will require regular vegetation management in the late spring and early summer.

Many of these maintenance items are dependent on the type and amount of landscaping and supporting infrastructure that is developed along the trail. Because the A&M Rail-Trail is a multi-jurisdiction trail, it is recommended that a consistent maintenance procedure be developed for each city along the trail to ensure, at a minimum, that the facility is safe for trail users. The management entity (regardless of the management option developed) should have a mechanism to identify, record, and respond to maintenance problems, and to keep written records of such actions.

Special maintenance equipment such as a trail mower may be purchased jointly by all local jurisdictions, thereby reducing costs. Typical maintenance vehicles for the trail will be light pick up trucks and occasionally heavy dump trucks and tractors. Care should be taken when operating heavier equipment on the trail to warn trail users and to avoid breaking the edge of the trail surface.

If the A&M Rail-Trail will ultimately serve as a maintenance access road for some agencies, trail base construction specifications should reflect the anticipated weight and frequency of vehicles.

E2. Maintenance Trust Fund

The Friends of the Annie & Mary Rail-Trail should work with local governments to establish a Trust Fund to aid in paying some of the costs for maintenance and management of trail segments. The Fund would be established by soliciting funds from both public and private sector sources. The principal balance of the fund would provide two benefits: 1) the interest generated from the fund would be used to aid in the funding of annual maintenance activities; 2) in the event of expensive short term maintenance needs, the principal balance could be tapped to support these activities. The Trust Fund should be established in association with a local financial management organization.

E3. Reporting Mechanisms

In addition to the establishment of good “in-field” communications between the trail manager and other entities, it is important that it be easy for trail users to report maintenance deficiencies and new hazards. The trail manager’s and/or maintenance manager’s phone number and website/email should be posted at trailheads and major access points, and on maps and other trail literature. The trail manager may also want to develop a generic “spot improvement” card that could be made available at trail heads, bicycle shops and other locations. This makes it convenient for trail users to describe in writing problems they’ve encountered and mail them directly to the trail manager. This has proven to be an effective way of collecting information about the condition of trail facilities. No less important, this kind of public outreach is indicative of the trail manager’s commitment to proactive trail maintenance.

F. Action Items

- **Help Blue Lake develop their portion of trail.** The City of Blue Lake is ready and willing to develop a trail on the A&M corridor within city limits and assume management of it as a trail – even in light of the fact that they have no identified resources to do so. First, however, permits and funding must be secured (see Chapters 8 and 9).
- **Advocates must step up to the effort.** The County is not willing to take on management of any portion of the corridor as a trail. Though there is significant public support (see survey results in Chapter 4), County staff feel they are overloaded and underfunded for maintenance of their current road, park and trail workload. If the public truly wants the County to take the lead on (or even to follow) this effort in any way, there will need to be significant efforts made to assist and encourage them. Particularly in light of current budget crises, it will be additionally incumbent upon trail advocates to troubleshoot and overcome management scenario challenges.
- **Pursue trail development through Arcata, then to Water Park 1.** The City of Arcata feels that, because the corridor is outside their jurisdiction and they have more pressing priorities for non-motorized transportation focus within city limits, trail development on the A&M corridor outside city limits is not a current priority. The Council is supportive of trail development, however, and could possibly be convinced to take a more active role in trail development and management to Water Park 1. In particular, this could be the case if they develop trail on the portion of corridor through town first.
- **Pursue support for trail management from the HBMWD Board.** The Humboldt Bay Municipal Water District, many (other than the District) agree, is a sensible place to look for help managing the Arcata, Parks and Bridge Reaches of the corridor. The District, however, is looking for help to manage the bridge, and does not feel that a trail-related level of recreational powers is within its scope. This concern should be pursued and addressed at a board level, and perhaps at a state level: if the Water District were to take on some level of maintenance (assuming a source of financial support) their insurance rates should not increase, since they already manage recreational areas.
- **Use other highway-adjacent trails as models.** If trail development is pursued in state highway right-of-way, consideration should be given to how bikeways and multiple-use trails are managed in other Caltrans Districts. Caltrans is not currently interested in managing a highway-adjacent multiple-use trail, and feel that this is the realm of local governments (however the County is not interested, either).
- **Involve the Rancheria.** Though it is not considered here as a potential management agency, the Blue Lake Rancheria should be invited to discussions about trail development and management.
- **Organizational development for the Friends of the Annie & Mary.** The Friends is the most likely group to take on the pursuit of trail development, and this means determining a management framework first – grant funds and permits have to come subsequently. If the group incorporates as a private, non-profit 501(c)(3) organization, they will be in a position to raise funds, lead a trail development campaign and work with (and in the beginning, possibly facilitate) potential management agencies.
- **Establish a volunteer trail maintenance program.** One potential way to encourage involvement of management agencies would be to establish a trustworthy, successful volunteer trail maintenance (and patrol) program. This possibly should be started on the Hammond Trail to determine how much local government could rely on this type of assistance, as they are currently skeptical of the long-term viability of such efforts.
- **Consider establishment of a Parks & Trails District.** Research into the establishment of a Regional Parks and Trails District should be conducted to determine if the public and local agencies would benefit from a coordinated effort to plan, fundraise, construct and manage parks and trails across the county.

This chapter provides a summary of the estimated costs of constructing an A&M Rail-Trail along the preferred alignment presented in [Chapter 6](#). Additionally, an overview of potential funding sources and their applicability to the proposed trail project is also provided.

Costs associated with acquisition of any necessary easements or rights-of-way are not considered here. Decisions will need to be made by both the NCRA and the agency/ies who assume/s management responsibility for the corridor as a trail, per discussions in [Chapter 7](#), before these costs can be assessed for either status of the entire corridor or relocation of specific segments. Some of the cost estimates presented below, consequently, may be only a portion of the true costs associated with trail development. On the other hand, no quantitative consideration is given to the potential for matching funds or donations that would reduce the estimates presented here.

As noted in [Chapter 2](#), estimated costs of railbanking include legal fees for an attorney with specific railbanking experience; NCRA staff (and/or consultant) costs of providing the attorney with necessary information and basic environmental and cultural reports; and STB fees (which are commonly waived for public agencies). This expense could range between \$8,000 and \$15,000.

Other pre-construction (including permitting, design and engineering) costs could include that of efforts to establish a management structure and coordinated trail development plan.

A. Construction Costs

Trail construction is similar to road construction in scope and, often, scale. The benefit of working with an existing rail corridor is that some of the necessary foundation and infrastructure exist. However, cost estimates also reflect the age of corridor infrastructure, lack of maintenance, state of disrepair, and land use conflicts.

The overall costs for creating a trail on the existing Annie & Mary corridor can be divided into two sections: areas including bridges and trestles and those without bridge and trestle crossings. Cost estimate for the structures is broken down by each trestle or bridge, while the cost estimate for the trail is broken into reaches. Estimates include materials and labor, but do not incorporate costs for potential demolition of old structures and/or potential acquisition of land. Cost estimates for basic trail infrastructure were developed by Spencer Engineering, and are more thoroughly reported in [Appendix D, Attachments 4 and 5](#).

Base cost estimates were generated for each alternative route to provide for cost comparisons ([Appendix D, Attachment 6](#)). Total cost estimates include a 10% design cost, a 4% permitting cost, an 8% construction management and inspection cost, and a 20% contingency – a total of 42% increase from the subtotal cost.

Trail amenity costs are not estimated here, since specific trail support facilities are not included in the conceptual trail design. Generic cost estimates for these facilities are provided in [Section C2](#), below.

B. Trestle and Bridge Costs

The cost estimate to retrofit the existing structures or build new structures to accommodate a recreational multi-use trail in the existing Annie & Mary corridor is divided into two parts: 1) the cost to replace structural timbers or construct a new structure; and, 2) the cost for decking and guardrails.

The trestles restoration cost estimate assumes that each structure will be restored to its original condition using treated fir. Timber members, including stringers, caps, sills, and driven piles, were placed into three categories: good condition, beginning to rot, and mostly rotten and/or not providing structural support. The members found to be in the latter two categories were considered to be in need of replacement to accommodate a multi-use trail.

The decking and guardrail cost estimates were calculated for Warren Creek Trestle, Schoolhouse Trestle, Green Tank Trestle, Mad River Approach Trestles, Mad River Bridge, and Minor Creek Trestle. The decking and guardrail cost estimate for Mill Creek and Powers Creek Bridges are included in the total cost estimate for the construction of these bridges.

A scouring investigation was not performed for the Mad River Bridge piers, but a line item for \$180,000 has been included for this potential work. The cost to restore the Mad River Bridge, including decking, guardrails, and re-painting, is estimated to be \$1,034,700. Re-painting the bridge is not considered essential for the bridge to accommodate a trail. If re-painting were eliminated from the total cost of restoring the Mad River Bridge, the cost would be reduced by \$450,000.

The cost estimates for trestle and bridge restoration are based on investigation of materials, labor, equipment, and work done by the NCRA in 1995 (Appendix D). The total cost for trestle and bridge restoration on the Annie & Mary as a multi-use trail is estimated to be approximately \$3,514,000 (Table 8.1 and Appendix D, Attachment 4).

Table 8.1.
Summary of Cost Estimate for Trestle/Bridge Restoration.

	Structure	Decking and Railing	Total
Warren Creek Trestle	\$360,400	\$93,000	\$453,400
Schoolhouse Trestle	\$178,800	\$40,700	\$219,500
Green Tank Trestle	\$137,100	\$49,700	\$186,800
Mad River Approach Trestles	\$88,700	\$20,300	\$109,000
Mad River Bridge	\$818,300	\$107,400	\$925,700
Mill Creek Bridge	-	-	\$68,000
Minor Creek Trestle	\$252,000	\$117,800	\$369,800
Powers Creek Bridge	-	-	\$68,000
Construction Sub-Total			\$2,400,200
Design		10%	\$240,020
Permitting		4%	\$96,008
Construction Management & Inspection		8%	\$192,016
Sub-Total			\$2,928,244
Contingency		20%	\$585,649
TOTAL			\$3,514,000

C. Trail Costs

Cost estimates for trail development include drainage improvements, trail base and surfacing, retaining walls, road crossing treatments, and, where applicable, trestle and bridge construction or restoration. The following cost estimates are based on an average trail width of ten feet plus a two-foot shoulder on each side. Cost estimates do not include any needed right-of-way acquisition for alternative alignments. Estimates were generated to assess the cost of trail development on the corridor – they are *not relevant* to costs for reinstatement of the railroad.

C1. Cost Estimates By Reach

The following cost estimates reflect use of either the original corridor or, as they are recommended in [Chapter 6](#), preferred alternative alignments. The engineer's estimate of trail development by reach ([Appendix D, Attachment 5](#)), includes 10% for project design, 4% for permitting, 8% for construction management, and 20% for contingency – a total of 42% in addition to basic construction costs.

Alternative alignment cost estimates ([Appendix D, Attachment 6](#)) are focused only on the segment of original corridor that would be detoured or otherwise altered (in two cases, it is the entire reach). From the alternative alignment estimates presented in [Appendix D](#), several adjustments are made for presentation here. First, the original corridor segment estimate is subtracted from the alternative alignment estimate – the result is the cost increase above (or decrease below) that of developing trail on the original corridor for the segment that is detoured. Second, the alternative alignment cost estimates provided in [Appendix D](#) do not include 42% additional costs noted above, and are added to any difference in cost between alternative and original alignment. Third, if there is a difference between the original corridor and preferred alignment segment estimates, that difference (with 42% added on) was added to the estimate for the entire reach on the original corridor.

The following cost estimates are summarized in [Table 8.2](#), below, as well as [Tables 1.1](#) and [6.6](#).

Arcata Reach

The cost estimate for the Arcata Reach, \$725,200 (\$127 per linear foot), is calculated assuming that the original alignment of the corridor is utilized for trail development, with the exception that, as specified for Alternative B, 600 feet of the corridor are lowered below current grade. This figure was calculated by adding \$85,200 – the difference between the original corridor segment (\$90,000) and Alternative B segments (\$30,000) added to 42% additional costs (\$25,200) – to the trail development estimate for the original corridor, \$640,000.

The most costly elements of this estimate are base and surface material for just over a linear mile of surface area, and excavation, grading and a retaining structure for a realignment of 600 feet of the original corridor to a slightly lower elevation.

Parks Reach

To utilize the original corridor, including restoration and decking for the three trestles, the estimated cost is \$1,600,000, or \$325 per linear foot. Trestle restoration, at \$860,000, should be eligible for historic renovation funds ([Section E10](#), below).

Bridge Reach

Relatively minor upgrades are required for the trail bed of Bridge Reach. The restoration of Mad River Bridge and its approach trestles comprise the most significant expense of the Bridge Reach estimate, which totals \$1,710,000, or \$461 per linear foot.

Glendale Reach

It will actually be slightly less expensive to construct a trail in the preferred alignment along state highway right-of-way. Though it would require new construction of a trail route, the preferred alignment is shorter, and does not require trestle restoration – though it would require two new bridges. Not including any costs for acquiring use of non-A&M right-of-way, the recommended Glendale alternative is estimated to cost \$1,114,800.

The original corridor estimate ([Appendix D, Attachment 6](#)) of \$840,000 was subtracted from the Alternative C estimate, \$780,000 to produce a negative \$60,000 difference between the two. Another 42% was subtracted from that negative number to produce an estimate of -\$85,200 for the difference between the preferred and original alignment. The engineer's original corridor estimate ([Appendix D, Attachment 5](#)) of \$1,200,000 was reduced by \$85,200 to produce a final trail development cost estimate for the preferred Glendale Reach of \$1,114,800, or \$117 per linear foot.

Blue Lake West Reach

The Blue Lake West Reach requires relatively modest improvements to be used as a multiple-use trail. At \$49 per linear foot, a rail-trail through downtown Blue Lake would cost approximately \$350,000.

Blue Lake East Reach

Discussion of the alternatives for this reach provided a short-term and a long-term recommendation for the corridor east of Blue Lake. The short-term alternative – to end the trail on the corridor just east of the Museum and connect with the Blue Lake Business Park Trail loop via Hatchery Road – would cost approximately \$17,040 (including 42% in addition to the \$12,000 subtotal provided in [Appendix D, Attachment 6](#)), or \$10 per linear foot, for essentially two road crossing improvements.

The long-term alternative – to utilize the original corridor and connect with the Mad River levee and Hatchery Road to form a loop back into town – would cost approximately \$186,600 more than development of the original corridor (derived from the \$370,000 estimate for the Alternative B 'loop' alignment minus \$240,000 estimate for a trail on the original corridor, which equals \$130,000, plus 42%, or \$56,600, additional costs). This long-term preferred alignment for 11,211 feet of trail development will cost approximately \$536,600 or \$48 per linear foot.

Korbel Reach

Since it is not recommended that the Korbel reach be developed as a trail until Simpson Timber Company desires to do so, no cost estimate will be included in this summary.

Table 8.2.
Summary Cost Estimate for A&M Rail-Trail Development.

Reach	Alternative	Cost	Length in Linear Feet	Cost per Linear foot
Arcata Reach	B	\$725,200	5,703	\$127
Parks Reach	A	\$1,600,000	4,917	\$325
Bridge Reach	-	\$1,710,000	3,706	\$461
Glendale Reach	C	\$1,114,800	9,550	\$117
Blue Lake West Reach	-	\$350,000	7,139	\$49
Blue Lake East Reach	C	\$17,040	1,740	\$10
Korbel Reach	-	\$0	-	\$0
Total Estimated Cost		\$5,517,040	42,226	\$131

* Costs do not include any necessary right-of-way acquisition costs or trail support facilities.

Since there are few multi-use trails in the region – really only one – of this magnitude, and since development costs for Hammond Trail were never estimated in this manner, these costs will likely seem high to north coast residents unfamiliar with multi-use trail or road development costs. In their experience planning and designing multi-use trails (including rail-trails) around the United States, Alta Planning + Design staff note that current development costs average between \$250,000 and \$1,000,000 per mile (Burke, 2003). A&M corridor cost estimates are also comparable to that of the northernmost segments of the Hammond Trail completed in the last three years (Madrone, 2003). It is important to note, however, that trail development costs will increase with time, not only due to inflation, but to continued deterioration of the physical state of the A&M corridor.

Suggestions regarding potential funding sources and methods to reduce ‘hard costs’ for this project are presented below in [Sections E and F](#).

C2. Support Facilities

Though they are not included in basic trail infrastructure estimates, trail support facilities, or amenities, are an important component of the success of any trail system. Listed here are general estimates of costs per item, not including any planning, design, engineering or other preparation necessary for installation.

Signage

Informational/Interpretive Signs \$1,000.00 each

Kiosks \$3,000.00 each

Directional Signs \$200.00 each

Warning Signs \$200.00 each

Mile Markers \$250.00 each

“Share the Road” sign \$250 each

Furniture/Furnishings

Benches \$600.00 each

Trash Receptacles \$400.00 each

Security Bollards \$250.00 each

Bicycle Racks \$500.00 each:

Class I Bicycle Parking: Lockers - per 2 bicycles \$500-\$1500

Class II Bicycle Parking: Secure wheels and frame \$65-\$150/bike

Class III Bicycle Parking: Inverted U's or rail racks \$65-\$80/bike

Fencing (Board-on-Board) \$20.00 per linear foot

Gates \$750.00 each

Parking Lots: Gravel Lot, Asphalt Lot

10 cars: \$7,500.00, \$14,000.00 each lot

20 cars: \$15,000.00, \$28,000.00 each lot

40 cars: \$30,000.00, \$56,000.00 each lot

D. Maintenance Costs

The total estimated annual maintenance for the A&M Rail-Trail at full implementation is \$28,000, based on the current preferred alignment and estimated maintenance costs itemized in [Chapter 7, Table 7.2](#).

There are likely to be economies of scale when the trail is 100% completed, based on the length of the facility and the likelihood of shared maintenance purchases between agencies. There will also, however, be additional costs associated with the numerous bridge and trestle structures, each requiring their own maintenance program (though some level of annual maintenance is estimated here). Additionally, this estimate could be reduced with implementation of an Adopt-A-Trail program, which would utilize volunteer labor and/or equipment for regular maintenance activities.

E. Project Funding

There are a number of grant funding and programs for which this project is a good fit. The following is a list of those grant and program sources identified by the project team to be relevant to the various aspects of this project, including: recreation, transportation, historic resources, outdoor education and community health and wellness.

E1. Environmental Enhancement and Mitigation Program

This Caltrans program is designed to provide mitigation for Caltrans projects, and is available to local agencies and non-profits. The EEM program has funded several phases of the Hammond Trail in McKinleyville, and provides up to \$250,000 per project. EEM was cut by 50% in 2003.

Of the three EEM categories, 'Roadside Recreational' is likely a good project fit. A nearby Caltrans project on State Route 299 would need to be identified and considered a good match for a proposed adjacent trail project. A first step is to discuss early project concepts with the local office, potentially starting with environmental planning staff.

E2. Recreational Trails Program

This program is administered through the State of California Resources Agency by the Department of Parks and Recreation. The program provides up to 80% of project funding for recreational trails and trails-related projects and has funding available for both motorized and non-motorized trails. Eligible projects may include acquisition, development or rehabilitation of recreational trails. Funding is available to cities, counties, districts, state agencies, and non-profit organizations that have management responsibilities over public lands. The annual application deadline is October 1st.

E3. Regional Transportation Improvement Program

This program, part of the State Transportation Improvement Program (STIP), funds transportation projects, with control over these funds given to local governments through Regional Transportation Planning Agencies (RTPAs) such as the Humboldt County Association of Governments (HCAOG). Money from this program goes to fund streets, road maintenance, local transit service, and non-motorized transportation projects. Although highly competitive, it is possible to fund transportation-related bicycle and trail projects with RTIP funds. Only municipalities are eligible. Funding is appropriated annually.

E4. Transportation Development Act, Article III

TDA Article III funds are 2% of the revenues generated by a quarter cent of the statewide sales taxes returned to counties for the purpose of funding non-motorized transportation. Some RTPAs do not have an application process, and not all RTPAs allocate funds in this area. From 1993-1998, HCAOG only allocated TDA Article 3 funds in 1995-96; the total expended was \$40,000.

E5. Safe Routes to School (AB 1475)

The Safe Routes to School (SR2S) program funds projects that improve and enhance the safety of pedestrian and bicycle facilities and related infrastructure to and from schools. Established by AB 1475 in 1999, SR2S was extended by SB 10 in 2001, and will sunset on January 5, 2005, unless a later enacted statute deletes or extends that date. Funds may be used for acquisition, preliminary engineering, and construction. As a reimbursement program, the ratio is 90% (maximum) SR2S funding and 10% (minimum) local match, with the maximum reimbursement for any single project set at \$450,000. Applicants must be an incorporated city or a county within California; exceptions are considered on a case-by-case basis. While this program can be very competitive, SR2S projects have been funded for several schools in Arcata and both the Morris School and McKinleyville Middle School in the County. Deadline for applications is generally the end of May annually.

E6. Habitat Conservation Fund

Administered by the California Department of Parks and Recreation, this program provides up to 50% of the required funding for wildlife corridors and trails; riparian habitat; habitat for rare and endangered, threatened, or fully protected species; or aquatic habitat for spawning and rearing of anadromous salmonids. Only local units of government are eligible. This program will allow up to 20% of awarded funds to cover planning and project administration. Funding requests are generally due on October 1st.

E7. Land and Water Conservation Fund (LWCF)

The LWCF is a reimbursement program administered by the National Park Service and California Department of Parks and Recreation. Projects are limited to outdoor recreation purposes and indoor facilities which support outdoor recreation activities, and may include acquisition or development of neighborhood, community, and regional parks and recreation facilities, as well as the acquisition of wetland habitat. LWCF requires a 50% match. Eligible applicants include counties, cities, recreation and park districts and special districts with authority to acquire, develop, operate, and maintain public park and recreation areas. Deadline is May 1st annually.

E8. Air Quality Management District (AB 2766)

The North Coast Unified Air Quality Management District (NCUAQMD) has two vehicular pollution prevention programs that could be applied to the A&M Rail-Trail. The Air Quality Partnership (AQP) program is intended to protect public health in Humboldt, Del Norte and Trinity Counties. The program seeks to improve air quality in partnership with local public, private and non-profit entities by supporting small scale projects aimed at reducing emissions from motor vehicles. With two funding cycles per year, project funding is limited to \$3,000 and each proposing entity is limited to one funded project per six-month period.

Larger grants from the NCUAQMD are available annually through the AB 2766 program. About \$87,910 has been allocated for the 2002-2003 fiscal year for technical studies, monitoring, planning, and implementation of the District's 'Particulate Matter Attainment Plan'. Funding preference is given to projects that result in reduction of particulate matter from heavy duty diesel motor vehicles, rideshare and/or transit programs implemented by or under direct contract to local government entities, and the installation of physical devices or facilities that directly or indirectly reduce motor vehicle emissions.

E9. Historic Preservation Funds

National Trust for Historic Preservation

The NTHP has three funding programs. The Preservation Services Fund provides nonprofit organizations and public agencies matching grants from \$500 to \$5,000 (typically from \$1,000 to \$1,500) for preservation planning and education efforts. The Johanna Favrot Fund for Historic Preservation provides nonprofit organizations and public agencies grants ranging from \$2,500 to \$10,000 for projects that contribute to the preservation or the recapture of an authentic sense of place. The third program covers historic interiors. Additional information regarding these programs and their priorities can be obtained from the NTHP regional office located in San Francisco.

Certified Local Government Program of the National Park Service

Local governments strengthen their local historic preservation efforts by achieving Certified Local Government (CLG) status from the National Park Service (NPS). Jointly administered by NPS in partnership with SHPOs, the CLG Program is a model and cost-effective local, State, and federal partnership that promotes historic preservation at the grassroots level across the nation. The local CLG contact is Sidnie Olson at the City of Eureka Community Development Department.

State Historic Preservation Office (SHPO)

The SHPO administers the California Heritage Fund, for which there is no ongoing appropriation. The Fund is only active when there is a private donation, special appropriation by the legislature, or a voter-approved bond, such as the California Clean Water, Clean Air, Coastal Protection and Safe Neighborhood Parks Bond Act of 2002 (Prop 40). This \$2.6 billion bond measure dedicates \$267.5 million to protecting architecture, art, parks, landscapes, and other cultural resources. Guidelines for the distribution of Prop 40 funds by the OHP have not yet been established.

E10. State Public Access Program

This program provides state/local cooperative projects with funds (not grants) for acquisition or improvements that preserve wildlife habitat or provide recreational access for hunting, fishing, or other wildlife oriented recreation. Qualifying projects include developments such as fishing piers or floats, access trails or roads, boat launches, wildlife observation and interpretive trails, restrooms and parking areas. Funding can be up to \$250K, not including engineering and CEQA costs, and no matching funds are required for non-pier projects.

E11. Bicycle Transportation Account

This state program, administered by Caltrans, provides grant funds for new bike paths, bike lanes and bike routes, traffic control devices, planning, safety, education, and maintenance of bike facilities. Any City or County in California with an adopted bicycle plan may apply for funding. Annual application deadlines are December 1st.

This program will be more applicable for the A&M Rail-Trail project if the trail is designed for bicycle commuting. Some type of paved surface would be necessary for this facility to be considered part of the transportation infrastructure.

E12. State Coastal Conservancy

The SCC manages several programs that provide grant funds for coastal trails, access, and habitat restoration projects. The funding cycle for these programs is open. Funds are available to local units of government as well as non-profits.

The Conservancy has provided significant funds for study and implementation of coastal public access development and resource conservation in the Humboldt Bay region.

E13. TEA-21

The Transportation Equity Act for the 21st Century is listed last because of the level of administrative effort necessary to access and mobilize these funds.

This year, the Transportation Equity Act for the 21st Century (TEA-21) – the federal omnibus transportation financing bill enacted once every six years – will expire. At this time, it is expected that Congress will reauthorize the bill, very closely maintaining its current form, by the end of the 2003. Funding guidelines will not be available for TEA-21 programs until after reauthorization.

The primary source of funding within TEA-21 for bicycle and pedestrian facilities is Transportation Enhancements Activities (TE). Under TEA-21, California received approximately \$60 million per year for this program. There are 12 eligible categories in the TE program, three of which apply to trails: bicycle and pedestrian facilities, bicycle and pedestrian educational activities, and preservation of abandoned railway corridors for bicycle and pedestrian use. Other categories related to the A&M include scenic acquisitions, landscaping, and historic preservation.

E14. Humboldt Area Foundation

The Foundation's mission is "to serve as an independent staging ground for residents, individually and in concert, to build social, economic and environmental prosperity to California's North Coast. The deadline for small grants (less than \$5,000) is the first day of each month; the deadlines for general grants (over \$5,000) are June 1, September 1, and December 1.

The Humboldt Area Foundation is primarily focused on smaller projects that benefit youth, families and economic development projects in the region. Projects typically funded by HAF do not appear to match rail-trail development. However, if there were individuals interested in acting as benefactor/s for trail development, the HAF would be an appropriate institution to work with to establish project-specific funding programs.

E15. California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002

Given California's current budget crisis, the funding for many of the programs authorized by Proposition 40, including the Per Capita Grant Program, will occur in a future state budget. These programs – some of which are listed above – are typically good matches for the A&M in numerous ways (recreation, non-motorized transportation, and historic preservation).

E16. Community-Based Transportation Planning and Environmental Justice Grant Program

The California Department of Transportation, Division of Transportation Planning (DOTP) provides grants (up to \$300,000 each) to promote livable community concepts and on transportation and community development issues that address the interests of low-income, minority, Native American or any other under-represented communities. Grants are awarded on a competitive basis to Regional Transportation Planning Agencies, cities, counties, Native American Tribal Governments, Community-Based Organizations, universities, transit agencies, and private non-profit organizations. Proposed projects should have a clear focus. The 2003/2004 deadline is November 1st, however the current condition of the state budget may affect the funding for these programs.

E17. Grassroots Fundraising

Though this type of fundraising is very time- and energy-intensive, well-organized efforts can have very productive results in this region. For instance, at the time of writing, the Sunnybrae/Arcata Neighborhood Alliance is close to raising \$70,000 necessary for purchase of timberlands just southwest

of (and over the ridge from) the A&M corridor. [Appendix L](#) presents examples of other successful private fundraising efforts.

F. Matching Contributions

Local matching funds, goods and services are critical to leverage outside funding sources, and can significantly lower project costs. The grant funds for one recent Hammond Trail project – \$250,000 – were nearly doubled by local matching contributions (Madrone, 2003). Matching contributions for this effort could include:

- Services for planning and construction, such as biological and cultural surveys, permitting and engineering assistance, or equipment operation;
- Materials for construction, such as gravel, rock, lumber, concrete, fencing, culverts, or retaining walls; and
- Funds for components of the project/s that are consistent with local funding program, such as economic development, facilities that serve youth and elders, opportunities for business sponsorship, and so forth.

Matching contributions play many roles in successful trail implementation projects. First, funding programs require (or at minimum, always prefer) that projects have some type of local matching funds – consequently, local funds can bring outside funds to the area. Second, with a recent turn toward fewer resources for many services and infrastructure projects, including non-motorized transportation and recreation, local contributions help ensure that at least smaller or more basic elements of projects can move forward. Third, local contributions illustrate support, commitment and long-term sustainability of a project. And, fourth, local contributions help to ensure that the community is involved and an important part of making a project reality.

G. Action Items

- **Railbanking** should be one of the first considerations in fundraising efforts. Funds for this purpose will likely be hard to find – most funding programs provide for construction or construction-related project design. It is possible that funds for railbanking will need to be raised by grassroots efforts.
- **Considerable investment** in the corridor will be necessary to develop a multiple-use trail (Table 1.1). Primary investments will be renovation and retrofitting of the trestle and bridge structures to facilitate trail use. In general, however, multi-use trail development cost estimates are in accordance to the standard range of \$250,000 to \$1 million per mile.
- As negotiations with willing or potential management agencies moves forward, fundraising for development of at least the **Blue Lake West Reach** could include costs of permitting (see Chapter 9) and final designs.
- A plan for a practical mechanism of **funding trail maintenance** will likely be necessary to help local governments consider taking on development and maintenance of a trail on the A&M corridor.
- A significant amount of recreational trail, historic preservation, and non-motorized transportation **funds are available** through numerous state funding programs as a result of voters' approval of the

‘California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002’ – otherwise known as Proposition 40. In this time of extreme budget shortfalls, however, this kind of funding is not expected to last beyond the next two or three years.

One thing seems certain about the idea of an Annie & Mary Rail-Trail: many community members, agency representatives, landowners, and railroad supporters think that it is an excellent, even obvious, direction to take to preserve the corridor in a way that will have the most benefit to the communities along it and the region as a whole. Many of those who live along the corridor, however, have concerns about how a trail would impact their lives, and potential management agencies are wary of the maintenance costs associated with trail development. Trail development on the A&M corridor is not an inexpensive proposition: though much less expensive than restoring rail service, development of a trail on the corridor – some reaches more than others – will demand significant effort and funds.

A. Implementation Strategy

If the NCRA and relevant management agencies determine that pursuit of trail development on the A&M corridor is appropriate, the following is presented as a potential implementation strategy.

Although it would be ideal to construct the trail in a single phase, due to budgetary and other constraints, this approach is not likely. A trail project would most likely be implemented in several phases and over a number of years; the nearby Hammond Trail is an example of how this process has worked. Given the physical constraints – and financial costs associated with them – in some areas of the A&M corridor, trail development on some reaches may not take place until unforeseeable changes in the future make trail development more possible.

It is important that jurisdictions the corridor/trail passes through support an adopted phasing strategy. Multiple-jurisdiction support for a project will typically have better access to funding opportunities than a project with only single-jurisdiction support. Key criteria for phasing priority are linkages to major destinations, avoidance of major constraints/costs, and political support. It is also critical to the long-term success of the project that the first phase of trail implementation be well-executed – if so, it will build momentum for implementation of future phases.

Significant tasks remain before construction of an Annie & Mary Rail-Trail could proceed.

A1. Seeking Funds

All subsequent trail development efforts will need funding support; whether these funds are provided in-house by agencies providing assistance with these processes or by grant sources or fundraised donations, or a mix, the project will not proceed without monetary support. [Section 8E](#) provides a list and simple analysis of potential funding sources for trail development. In general, funding for trail and non-motorized transportation development is mostly limited to implementation – it is usually difficult to secure funds for permitting and design. These tasks may best be accomplished with funds from local fundraising efforts.

At the time of writing, state and federal budget constrictions make the possibility of trail development seem more tentative. There are, however, still dedicated funds in grant programs for trail, non-motorized

transportation and historic renovation projects. In particular, the programs funded by the ‘Proposition 40’ California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002, should still provide funds for mandated projects for the next several years at minimum.

The Friends of the Annie & Mary Rail-Trail are reportedly working to establish non-profit status and raise funds. The group has also communicated their desire to serve as a mechanism to address recommended next steps (Kosek, 2003).

A2. Railbanking

It is recommended that the NCRA railbank the corridor, regardless of whether future trail development happens or not. Railbanked status will ensure that the NCRA maintains rights to the corridor, even in a state of non-service. If trail development does move forward, railbanked status will ensure that allowances for interim use of the corridor are clear.

A3. Establishment of Management Structure

Establishment of a mechanism for management and maintenance of a trail on the A&M corridor will be at the impetus of the relevant agencies in question. This issue is probably the most significant hurdle to rail-trail development: though the City of Blue Lake is motivated and appears to be dedicated to finding a way to develop the trail, no other potential management entities show an interest in taking a proactive role in trail development on the corridor.

Because the City of Blue Lake is interested in short-term trail development, the following recommendations are made:

- Encourage the railbanking process and establish the City of Blue Lake as the responsible management entity within city limits or the city’s sphere of influence;
- Seek funds for trail design and permitting;
- Work with the community and the Rancheria to determine preferred trail location (per alternative options for the Blue Lake East reach) and design;
- Secure necessary permits for trail development (see Section A4, below);
- With trail location and design information, determine funding strategies for trail maintenance and construction; and
- Seek funds for and implement trail construction.

A4. CEQA

There are two potential ways to approach California Environmental Quality Act (CEQA) permitting of trail development on the corridor. From one perspective, the entire corridor would be treated as one project – though it would not likely be constructed at once – and a Program Environmental Impact Report (EIR) prepared for that project. From another perspective, it is not likely that the more costly and complex reaches of the corridor will be built in the foreseeable future, and it is possible that the other, more immediately developable, reaches could be permitted as funding and feasibility allow.

Program EIR

The trail project could be treated as a whole in a Program EIR, with each phase or reach presented as a tier under the program. Reach development is geographically linked, and development of the entire trail can be connected as a logical chain of events. A Program EIR for the trail may provide a focused opportunity to address potential cumulative impacts more thoroughly.

This type of document would be prepared to allow a series of smaller reaches to be developed, but still characterized as one project. A Program EIR allows the lead permitting agency to provide an overview analysis of the broad environmental effects while acknowledging that site-specific environmental review may be needed. Detailed site-specific environmental reviews would then be completed as each phase of the trail is ready for development. If the subsequent activities associated with trail development fall under the scope of the Program EIR prepared for the project, then the lead agency will not need to prepare an additional CEQA document for each project phase.

However, if future project activities potentially have effects outside of the scope of the Program EIR, then an additional Initial Study, Negative Declaration or potentially another EIR may be required. Because the reaches along the A&M have substantially different potential impact issues, it is likely that subsequent review and documents would be necessary before development of certain section of trail. For instance, the Hammond Trail was permitted in 1979, but an updated CEQA analysis was required for recently-constructed segments.

While this is one option for environmental compliance, preparation of a Program EIR poses some disadvantages for this project, particularly because of the high cost. While no specific management entity has stepped forward as the lead agency, it can be reasonably assumed that lack of funding for environmental review and implementation will be a significant problem. An additional disadvantage of using this type of CEQA document is that the data collected and review completed may become outdated before phases can be completed. With regards to the development of the A&M Rail-Trail, certain reaches may take many years to develop, potentially allowing enough time for impact information to become inadequate – negating many of the benefits of using this type of analysis to assess cumulative impacts.

Phased Project

This approach would treat each reach or phase as an individual project. Review would be based on the impacts of each particular trail segment – an Initial Study would be prepared and determination on the level of impact for each phase or reach based on that individual assessment. Each section would be viewed as a complete trail for the purpose of environmental review. Because the findings of this study illustrate the potential difficulty of developing particular reaches along the corridor, a project EIR on a reach-by-reach basis may be a viable option.

With limited resources, development of a trail on the corridor is not likely to be completed in a short timeframe. Because some of the reaches would not likely be developed in the foreseeable future, a step-by-step impact analysis would provide an opportunity to begin implementation of the more feasible reaches.

A phased project approach, however, raises concerns about a relative lack of cumulative impacts assessment. Additionally, this approach would mean that a number of separate CEQA processes will have to be undertaken, rather than [one](#) under a Program EIR.

A5. Priority Reaches

Of the planning reaches presented in this study, several are closer to construction ‘readiness’ than others.

Blue Lake Reaches

As noted above, the City of Blue Lake has, for a number of years, very clearly stated interest in developing a trail on the A&M corridor within city limits. This interest is one of the most important factors in trail development ‘readiness’. The Blue Lake West reach is very straightforward in design, and the Blue Lake East reach that includes the City’s Business Park Trail Loop has had previous planning and design attention.

Arcata Reach

With a clear destination on each end of the scenic Arcata reach – the Arcata Industrial Park and HBMWD Park 1 – and a significant amount of public support for development of this reach, it is a likely choice for priority development if a management agency or agreement can be established.

B. Conclusion

Since there are few multi-use trails – and only one other rail-trail – functioning in this region of California, it may seem to residents, planners and public representatives that the obstacles to trail development outweigh the possibilities. However, the sheer number and mileage of rail-trails in other parts of the state and country, with far longer, more complex and costly obstacles, indicates that creative solutions to landowner interface, structural renovation, and management challenges can be overcome if trail development on the A&M corridor is desired by the public.