

Covelo/Round Valley Non Motorized Needs Assessment & Engineered Feasibility Study Report

January 8, 2014



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- B – Trail Implementation Challenges and Solutions
- C – Improvement Cost Estimates

Supporting Documents

(delivered separately due to file size and type)

- 15% Design Level CAD and pdf files: Plans for SR 162 north and Tribal Trail Projects
- 15% Design Level Illustrator and pdf files: Plans for SR 162 south, Howard and Foothill Improvements
- Survey, property/ROW research, base maps and data (Rau and Associates)
- Conceptual Drainage Assessment (Rau and Associates)
- Environmental Reconnaissance Report and Maps (GHD)
- Cultural Resources Reports (Origer Associates) (not made public due to sensitive cultural resource location information)

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1 Introduction & Summary

Mendocino Council of Governments (MCOG), in cooperation with the California Department of Transportation (Caltrans), commissioned preparation of this two-part study that analyzes the State Route (SR) 162 corridor and local streets and roads within the Covelo area, to recommend improvements for non-motorized facilities and provide recommended designs for downtown Covelo.

1.1 Scope

Building on several recent plans and studies, this study evaluates the Covelo community's high priority non-motorized corridors to identify fundable bicycle and pedestrian projects. This consolidated study consists of two separate projects. The purpose of MCOG's Environmental Justice (EJ) project is to prepare a non-motorized needs technical study, which will identify improvements for bicycle and pedestrian access to schools, services, Tribal facilities and other destinations on county and Tribal roads. The EJ project area includes the larger Covelo community, as described in the *2010 Walk/Bike Path and Community Revitalization Strategy*. The non-motorized needs technical study considers off-road trails and paths to complement the limited network of roads.

The purpose of the Caltrans State Planning & Research (SP&R) grant project is to prepare an engineered feasibility study for improving SR 162 for bicycle and pedestrian use in Round Valley and the community of Covelo. The project limits are from postmile 28.58 to 30.72 on SR 162, which includes improvements within downtown Covelo. The engineered feasibility study identifies the appropriate facility to meet non-motorized needs within the project area and propose bicycle, pedestrian and parking facilities in central Covelo.

1.2 Goals & Objectives

The following goals have been identified for the study, based on community, county, and other stakeholder input:

- A. Improve bicycle and pedestrian access to schools, services, Tribal facilities, and other destinations on county and Tribal roads.
- B. Improve SR 162 for bicycle and pedestrian use in Round Valley and the community of Covelo.
- C. Accommodate the safety and mobility of motorists, pedestrians, bicyclists, and persons using wheelchairs.
- D. Conserve Round Valley's natural, visual and historical resources.
- E. Maintain the desired rural character of the valley and the Covelo community.
- F. Identify suitable bicycle, pedestrian, and parking facilities in central Covelo.
- G. Establish places and facilities that create a sense of community.
- H. Provide for multiple transportation modes and functions within transportation corridors and rights-of-way constructed by project developers or using appropriate grant funding.
- I. Consider maintenance costs when proposing bicycle and pedestrian facilities and associated amenities.

1.3 Summary of Public Outreach and Engagement

Outreach efforts included work with a Technical Advisory Group (TAG), Tribal engagement, two community workshops, radio broadcasting, and youth engagement. Outreach efforts, TAG meetings, and community workshop results are detailed in Appendix A.

1.3.1 Technical Advisory Group

A TAG was convened in October 2012 to kick off the project. The purpose of the TAG was to provide technical information relevant to the project, to coordinate with local agencies, and to act as the “eyes and ears” of the community to guide the project. Group members included Round Valley residents, representatives from the Round Valley Indian Tribes, Mendocino County Departments of Public Health and Transportation, Mendocino Council of Governments, Caltrans, and the consultant team.

During the October 2012 meeting, the TAG reviewed trail segment priorities identified in the *2010 Walk/Bike Path and Community Revitalization Strategy*, and revised the priorities based on recently completed planning documents and construction projects. The segment priorities provided guidance for field studies and surveying conducted during the winter of 2012-13. The TAG met again in February 2013 to prepare for the first community workshop and provided support during the workshop.

In July 2013, the TAG met to review a progress draft of the *Non-Motorized Needs Assessment and Engineered Feasibility Study*, focusing on existing conditions and improvement options. Significant input and preferences were gathered through this process, including a desire to re-use the County’s green bridge as a new pedestrian/bicycle bridge over Mill Creek. Local TAG members voiced strong support for the SR 162/Howard Street intersection improvements. Agency representatives requested standardization of travel and bike lane widths. Following the TAG meeting, the design concepts were modified accordingly. The final TAG meeting occurred on November 4, 2013.

1.3.2 Tribal Engagement

The Round Valley Indian Tribes is a sovereign nation of confederated tribes located within the project area. In 2008, the Round Valley Indian Health Center was a prime organizer of the five-day charrette/community workshop that resulted in the *2010 Walk Bike Path and Community Revitalization Strategy*. Staff from the Health Center provided support for the February 2013 community workshop by assisting with outreach and participating in the event.

Tribal Council Vice-President, Joe Dukepoo, and Tribal Transportation Director, Reuben Becerra, participated in the TAG. In December 2012, the consultant team met with the Round Valley Indian Tribal Council to provide an update on the project and to solicit input. The Council was supportive of maintaining a focus on improving pedestrian and bicycle safety in Round Valley, particularly along SR 162 from Howard Street to Hurt Road. The Council was also supportive of non-motorized trails on Tribal lands to improve east-west connectivity, and to provide an off-highway trail along the west side of SR 162. The Council requested that the consultant team prioritize these trail segments and proceed with surveying and data collection on Tribal lands.

On August 5, 2013, members of the consultant team presented design concepts to the Tribal Council for input. The Council maintained strong support for improvements to bicycle and pedestrian facilities on and off Tribal lands. The Council requested modifications to the design at the Tribal Commerce Center to accommodate a new fueling station and relocation of a driveway. To increase the likelihood of funding these projects, decrease

long-term trail maintenance costs, and to support health and safety, the Council adopted Caltrans' Class I Trail Standards for any trails that will connect to state pedestrian facilities. Additionally, Council directed their staff to work with Caltrans to pursue an agreement to allow for public use of pedestrian facilities on Tribal lands.

In addition to coordination with Tribal representatives regarding design, the work of the consultant team included a Cultural Resources Survey of the Study Area by Tom Origer and Associates, Archaeologists. This included formal consultation with the Round Valley Indian Tribes regarding cultural resources sites through the Tribe's Cultural Resources Specialist.

1.3.3 February 28, 2013 Community Workshop

Public input was collected during a community workshop held February 28, 2013 at the Round Valley Library Commons Community Room. The workshop engaged 75 participants in an interactive planning and design process to improve non-motorized transportation options in the valley. Food and hot drinks were provided by the Farmers' Market Coffee Company in the lobby. All participants were encouraged to enter the free raffle for bike gear (helmets, locks, LED lights) donated in part by Dave's Bikes in Ukiah.

The workshop kicked off with an introduction of the consultant team and an overview of the project, including how the current project builds on the *2010 Walk Bike Path and Community Revitalization Strategy* and Caltrans' Project Study Report for SR 162. Tribal representatives provided an overview of the new Tribal Transportation Department and its commitment to improving safety and building trails on Tribal lands. Consultants engaged in a discussion with the audience of current opportunities and constraints within the project area, and potential design solutions.

Following the presentations, participants worked at design tables that were staffed by TAG members. Participants drew and wrote on maps of the study area and made recommendations for improving pedestrian, bicycle, and equestrian conditions in the study area. The evening concluded with a summary of major concepts discussed at each of the design tables.

1.3.4 Media Coverage

KYBU radio helped promote the workshop by airing a ten minute interview with one of the consultants. During the interview, the relationship of this project to previous studies and projects was discussed and details of the workshop were announced. KMUD aired excerpts of the interview on the local news to inform area residents about efforts to improve pedestrian and bicycle facilities in Round Valley.

1.3.5 Youth Engagement

Local cyclist, Dean Meyer, organized a free bicycle repair event prior to the community workshop. Youth bike mechanics helped tune up and make minor repairs on bikes in preparation for a community bike ride through the valley. Following the ride, over 30 youth joined the workshop and participated in providing input, suggesting trail alignments, and identifying issues and opportunities.

1.3.6 September 5, 2013 Community Workshop

The second and final community workshop was held September 5, 2013 at the Round Valley Indian Tribes' Buffalo Room. Approximately 30 people were in attendance to review revised design concepts and discuss project implementation. Food was provided by the Round Valley Indian Tribes.

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Four design review stations covered different geographic areas of the potential improvements and included maps of the design concepts. They were staffed by MCOG, Mendocino County Department of Public Health and Transportation, Caltrans, and the consultant team. Workshop participants commented on the specifics of the design proposals and made many statements of support, and suggestions for refinements and some major improvements to the designs.

The evening wrapped up with an informal presentation by agency and consultant staff regarding project implementation next steps and considerations, and response to questions and comments from the attendees. The plan comments and mark-ups contributed by workshop attendees are summarized in **Appendix A** and are reflected in the revised design concepts in this report.

2 Background and Coordination with Other Plans

2.1 Caltrans Grants

Caltrans granted MCOG an Environmental Justice Transportation Planning grant for 2011-12 for the Round Valley Non-Motorized Needs Technical Study. The study builds on a conceptual plan that was developed for the community of Covelo and the Round Valley Indian Tribes in Mendocino County. The Tribe, the county, MCOG, Caltrans, and Covelo residents will evaluate the community's high priority non-motorized corridors from a technical standpoint to identify potential bicycle and pedestrian projects.

Caltrans also granted MCOG a Caltrans State Planning & Research grant for the Covelo Engineered Feasibility Study. As identified in the grant application, the purpose of the study is to identify individual projects upon identifying needs/gaps on a corridor basis for SR 162 through the community of Covelo and the Round Valley Indian Reservation.

2.2 Making Safe & Healthy Community Connections in Round Valley (2010)

This report summarizes the results of a charrette held in Round Valley that was conducted August 21-26, 2008. A charrette is a series of interactive public events that spans several days or more and culminates in a vision or design. The purpose of the Round Valley charrette was to produce a conceptual plan for safely linking key community locations via pedestrian and bicycle connections and for creating a town center plan for the unincorporated community of Covelo, located in the center of Round Valley. The report presents conceptual trail, school center, downtown, and Tribal area projects and implementation strategies.

2.3 Recent Projects

Through a Mendocino County Safe Routes to School Project, sidewalks and curb ramps were constructed in 2011 on the northeast corner of the intersection of Airport Road and Howard Street, extending to Foothill Boulevard and opposite the middle school.

2.4 Project Study Report (PSR) (2012)

Caltrans completed a Project Study Report (PSR) in July 2012 for the segment of SR 162 between East Lane and Biggar Lane (post miles 29.25 to 30.27). The project proposes widening travel lanes from 11 feet to 12 feet, widening shoulders from a half foot to 5 feet, and possibly marking them as Class II bike lanes. The purpose of the project is to reduce conflicts between motorized and non-motorized traffic. The improvements would provide shoulders wide enough to accommodate non-motorized travel and provide a clear recovery area and refuge for disabled vehicles. As of July 2012, the proposed construction year is undetermined.

This PSR proposes an upgrade to this portion of SR 162 to meet current standards for rural highways, both for traffic safety and accommodation of bicycles. While it would definitely be an improvement in bicyclist and pedestrian safety over the current highway, the improvement concept in the PSR may be inconsistent with the improvement concept preferred by the Covelo/Round Valley community for a separate pathway facility as detailed in this study. In locations where the trail would be set back from the road on Tribal land, the trail and lane/shoulder widening could co-exist. However, in locations adjacent to private property, the highway widening would conflict with right-of-way space needed for the separate trail and

would theoretically push the trail farther into private property, requiring substantially more right-of-way acquisition and having more significant impacts. The current study proposes less overall right-of-way acquisition than the PSR. The 2012 PSR set the proposed right-of-way at 80 feet, which would impact private parcels on both sides of the highway, whereas the current study took community and landowner input into account and tried to minimize potential conflict areas, keeping the trail within the area that would be occupied by the PSR improvements on the west side only. The PSR does not address one of the most challenging areas along SR 162 – the segment between Howard Street and East Lane. The study provides a conceptual plan to close this important gap between central Covelo and Tribal facilities to the north along SR 162.

Finally, the PSR does not have an implementation timeline, whereas there is intent on the part of the Round Valley Tribes and the community to implement at least the portions of the separate trail on Tribal land in the near term, and pursue other segments as soon as possible.

Community members expressed concern that the two project ideas would compete with each other for funding. This is not likely to be the case. The Caltrans PSR will likely use State Highway Operations and Protection Program (SHOPP) funds to pay for the project, while a separate multi-use trail will most likely be funded by some form of a grant.

2.5 Mendocino County General Plan (2009)

The Mendocino County General Plan Community Specific Policies Element presents goals and policies for the Covelo community planning area. Covelo community goals include:

- Goal CP-C-1: Conserve Round Valley’s natural, visual and historical resources while maintaining agricultural operations, including grazing lands.
- Goal CP-C-2: Expand economic opportunities in Round Valley consistent with the desired rural character of the valley.
- Goal CP-C-3: Maintain compact development patterns by focusing on commercial, residential and community uses in Covelo.

Additional goals and policies that guide planning for non-motorized facilities include:

- Policy CP-C-1: Preserve and enhance the established historic character of downtown Covelo.
- Policy CP-C-3: The design of new development should reflect the rural character of the Covelo community.
- Policy CP-C-7: Establish places and facilities that create a sense of community.

The General Plan Development Element includes the following transportation policies:

- Policy DE-126: Provide for multiple transportation modes and functions within transportation corridors and rights-of-way constructed by project developers or using appropriate grants funding.
- Policy DE-127: The County’s transportation policies and funding priorities shall emphasize use of multiple transportation modes with the acknowledgment that general transportation operation and maintenance funding is barely adequate for existing roadway safety maintenance. Emphasis should be placed on securing additional grant funds to support multimodal improvements in the right-of-way.
- Policy DE-128: Ensure that transportation infrastructure accommodates the safety and mobility of motorists, pedestrians, bicyclists, and persons in wheelchairs.

2.6 Mendocino County Regional Bikeway Plan (2012)

The county Regional Bikeway Plan (RBP) is intended to incorporate proposals for bikeway improvements within all jurisdictions of Mendocino County into one document. It is directed toward meeting the provisions of the California Bicycle Transportation Act, which are included in the Streets and Highways Code Section 890 through 894.2. Proposed bikeway improvements include:

- Round Valley Multi-Use Lanes, Route 2 – Crawford Road/Biggar Lane from the Elementary School to the SR 162, Class II bike lanes, Medium need.
- Round Valley Multi-Use Lanes, Route 3 – East Lane from the SR 162 to CR 339, Class II bike lanes, Medium need.
- SR 162 from SR 101 Longvale to CR 336 Covelo, Class III bike route, Low need.
- East Lane from SR 162 at Covelo to CR 327B, Class III bike route, Medium need.
- Howard Street from CR 337H to CR 337B, Class III bike route, Medium need.

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3 Existing Conditions, Opportunities and Constraints

The design effort started with an inventory of conditions, opportunities and constraints, building on the findings of the 2010 *Connecting Community in Round Valley* report. Figure 3-1 provides an overview of the preliminarily-identified routes and intersections that are the focus of the current project. These routes were examined in more detail through field reconnaissance, review of background maps and data, and review of conditions in Google Earth and Streetview. The most significant conditions are summarized below and in the corresponding Figures 3- 4 through Figure 3-12. These maps were used in the first community workshop to capture additional ideas, concerns and information, which were used to formulate the draft trail design concepts. Community comments regarding opportunities and constraints are recorded in Appendix A. More detailed existing conditions, opportunities and constraints information is recorded on the study base sheets and reflected in the design drawings, including lane, shoulder and sidewalk widths; utility pole and lighting locations; storm drains; trees and other pertinent features.

3.1 Right-of-Way and Property Ownership

Study area parcels and ownerships as well as state highway and county road rights-of-way were researched and mapped in the project area to determine possible opportunities and constraints for aligning trails. The topographic survey is provided as a separate deliverable, and the information is reflected on the base maps used for designs incorporated in this report, and provided in enlarged and native CAD or Illustrator format as separate deliverables.

Figure 3-2 provides an overview of ownerships in the study area. Appendix E depicts the findings of this research in a control map and topographic survey of the study area. Research included reviewing maps of record, State Highway Maps and Government Land Office Maps. The rights-of-way are composed of some dedications on Parcel Maps processed by Mendocino County, some grants of land in fee title or easement deeds to either Mendocino County or Caltrans, some rights-of-way established by legislative act, and some prescriptive rights by use and maintenance.

Based on this research, rights-of-way along the tribal land are mainly highway deeds of varying dimensions and documentation. The deed from the U.S. Government on behalf of the Tribes was apparently the result of a legal settlement and is fairly clear, although segmented because of private (non-Tribal) properties lying in gaps between the properties owned by the Tribes, or by the U.S. Government and held in trust for the Tribes. The record for the private property ownership areas has been found to be inconsistent and containing historical data gaps. The right-of-way from Howard Street to the north side of East Lane is not clearly documented, but is 50 feet wide from Howard Street to a point about 220 feet north. For the purposes of this project it is assumed that the right-of-way on the west side of SR 162 is at the back of existing sidewalk or at the face existing building. North of the intersection with East Lane the right-of-way on non-tribal private property is approximately 40 to 60 feet wide, taken as a prescriptive area between fences with SR 162 physically occupying the easterly two thirds of the width. The portion not occupied by the highway has been used by private land owners for landscaping.

The record maps for the eastern right-of-way line from East Lane north to the southern boundary of APN 034-190-03, which is the entrance to the Tribal land held in Trust by the U.S. Government and used for cultural events, indicate there is a dedicated right-of-way on maps filed in Maps Drawer 77, Page 63 and in Map Case 2, Drawer 28, Page 43. There is no formal acceptance of these rights-of-way or deeds of record. There is a deed (1778 O.R. 649) for a grant of easement right-of-way to Caltrans across the frontage of APN 034-190-03, after which there is a gap of no right-of-way until the north side of the Tribal land which the Economic Center

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and Casino occupy on the west side of SR 162. The eastern side all lies in the north half of Section 6, Township 22 North, Range 12 West, Mount Diablo Meridian.

Along the west side in this segment of SR 162 (north half of Section 1, Township 22 North, Range 13 West), there is a 20 foot wide deeded right-of-way (1778 O.R. 649) across the frontage of APN 033-010-02 over a distance of approximately 1320 feet. This is the parcel held in trust for the Tribes and used for their economic center and casino. South of this parcel to the point approximately 220 feet north of Howard Street, there is apparently no dedicated right-of-way and no deeds of record. All of the deeds read to the section line between Section 1 and Section 6, which falls in the pavement of SR 162.

North of the north line of Sections 1 and 6, (Township 22 North), there are segments of right-of-way deeded by the U.S. Government on behalf of the Tribes to Caltrans. These segments lie in Section 31, Township 23 North, Range 12 West and Section 36, Township 23 North, Range 13 West, with the common section line running in the pavement up to the intersection of Hurt Road. Biggar Lane is one half mile south of Hurt Road, lying on a quarter section line.

In approximately 1976, the Round Valley Indian Housing Authority retained the firm of Keeline-Pizzi-Young to survey approximately 10 sections of land in Round Valley. This survey included Section 36, Township 23 North, Range 13 West and Section 31, Township 23 North, Range 12 West. A note on Sheet 1 of 18 of the Record of Survey filed in Map Case 2, Drawer 31, Page 16 reads: "There is a road easement along all Section Lines being 66 feet in width, 33 feet in width on each side of the line, and a road easement along all mid-section and mid quarter section lines being 33 feet in width, 16.5 feet on each side of the line as shown on the official GLO Plat of the Diminished Round Valley Indian Reservation." As part of the work done to research right-of-way, the GLO Plat was reviewed. Although road easements were identified on the Plat, there was not an annotation with specific widths given. On the basis of the note on the Record of Survey map, the right-of-way in Sections 36 and 31, noted above, is shown to be 66 feet, but documentation needs to be found to confirm this. Fence lines are typically approximately 60 feet apart in this segment of SR 162. In order to establish the validity of this statement, it would be necessary to research Bureau of Indian Affairs Documents as well as other reservation documents to try to find definitive information.

In addition to the GLO Plat, there may have been legislative action to prescribe a right-of-way. Several times in the late 1800's and early 1900's the California State Legislature passed legislation which assigned rights-of-way to county roads. The rights-of-way were variable in width, depending on the year of legislation. The widths varied from 40 to 60 feet. During the era of these various legislative acts, SH 162 was likely a county road. It would require research in the county museum to review old Board of Supervisors' minutes to establish when the road was "viewed" and accepted into the county system. From the date of acceptance, it would be possible to confirm that there is a right-of-way of a specific width in non-Tribal lands. These legislative acts may not apply to lands held in trust by the U.S. Government for the Tribes, and may be the reason for the settlement recorded in 1778 O.R. 649 between the U.S. Government, acting through the Superintendent of the Bureau of Indian Affairs.

All of the additional research to confirm some of the speculation regarding the right-of-way along SR 162 is beyond the scope of work contemplated when this project was initiated and would take a considerable effort. Therefore, the rights-of-way are not fully determined at this time.

Figure 3-1: Study Area Overview

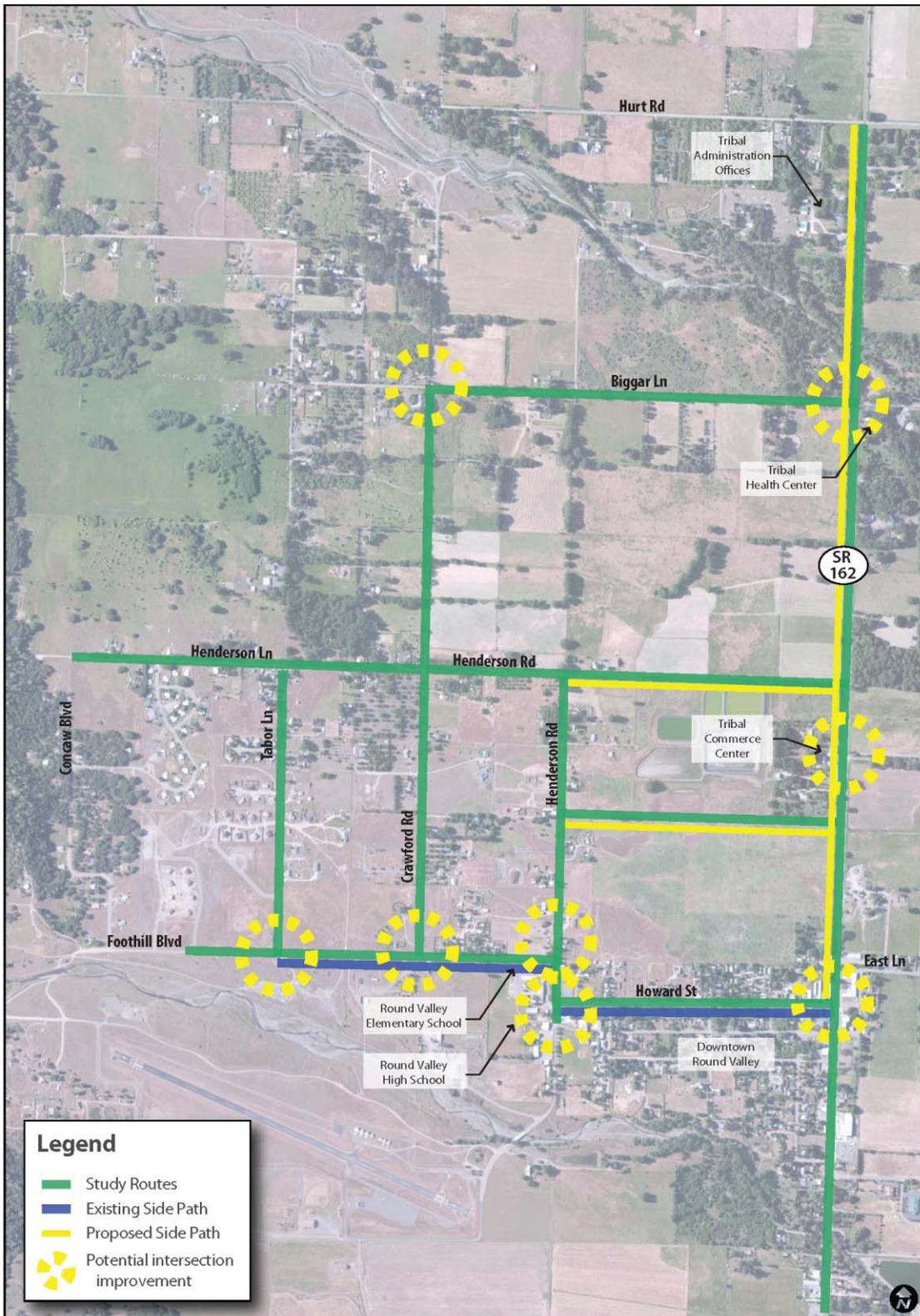
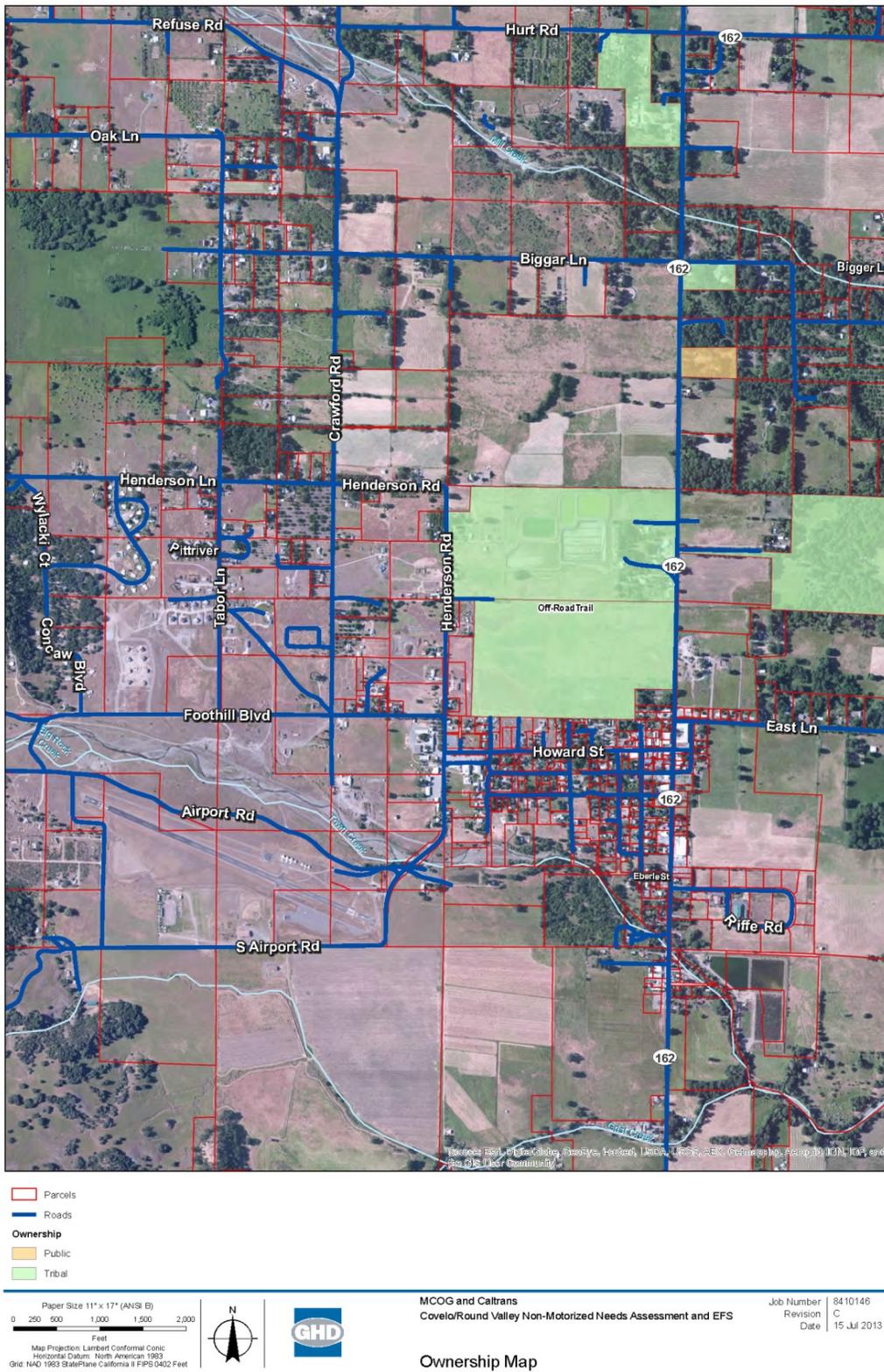


Figure 3-2: Ownership Map



Several times in the late 1800's and early 1900's, the California State Legislature passed legislation which assigned rights-of-way to county roads. The rights-of-way were variable in width, depending on the year of legislation. The widths varied from 40-60 feet. During the era of these various legislative acts, SR 162 was likely a county road. It would require research in the county museum to review prior Board of Supervisors' meeting minutes to establish when the road was "viewed" and accepted into the county system. From the date of acceptance, it would be possible to confirm that there is a right-of-way of a specific width in non-Tribal lands.

3.2 Biological and Cultural Resources

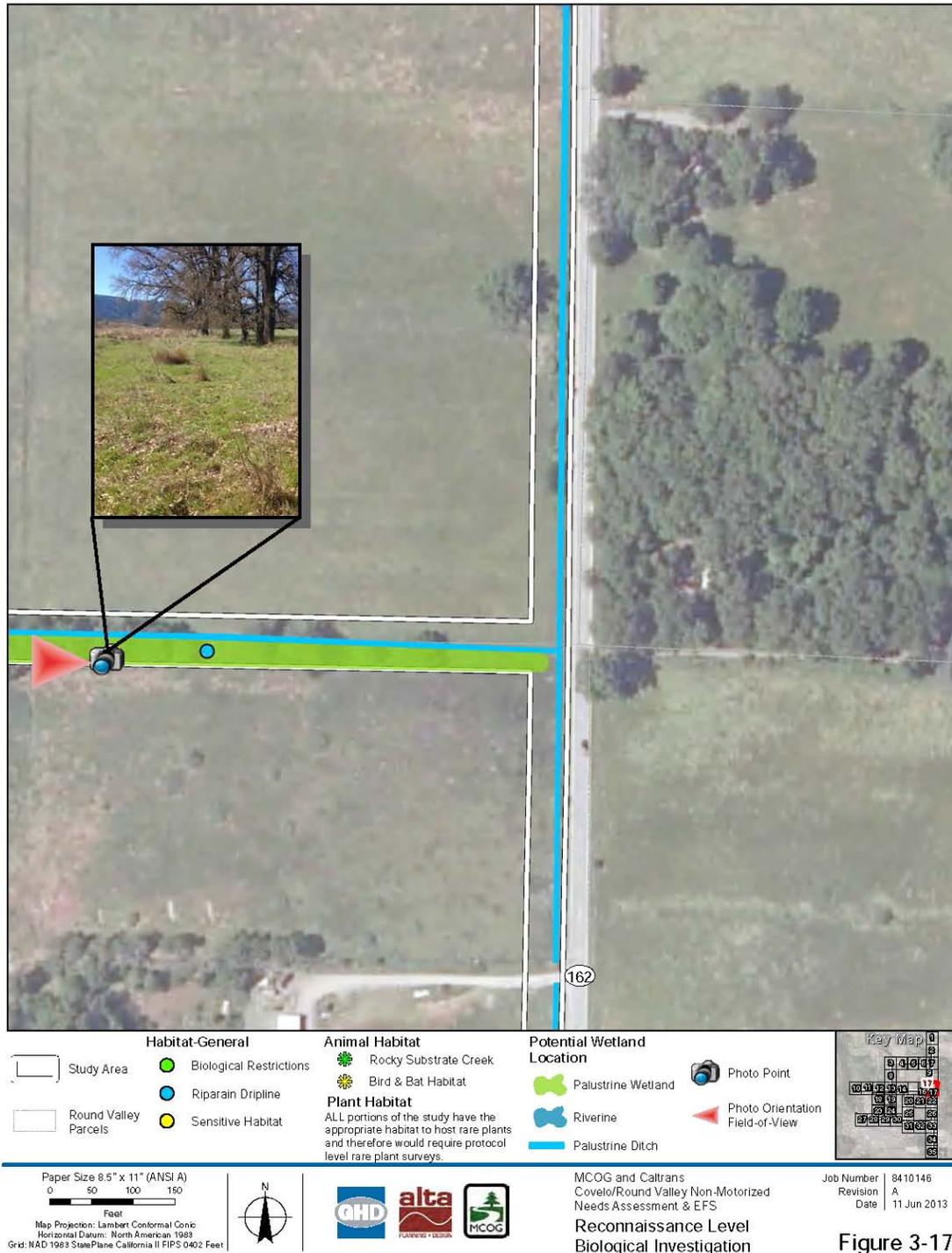
3.2.1 Biological

An environmental reconnaissance study was conducted to document the biological conditions/constraints throughout the study area. This reconnaissance-level site investigation of existing biological conditions focused on identifying the potential presence of wetland, riparian, and special-status plant species (listed as rare, threatened, endangered, or candidate for rare, threatened, or endangered species listing under the state or federal Endangered Species Acts, CNPS rare plant ranking, or of local importance) or related habitats present within the proposed project trail segments.

The environmental reconnaissance investigation resulted in a report and mapping (provided as a separate deliverable due to large file size). **Figure 3-3** provides a sample of the environmental resources mapping. The report resulted in identifying species potentially present in the study area and potential environment permitting requirements stemming from the present species. The environmental reconnaissance investigation maps were used to analyze opportunities and constraints for trail alignment alternatives, and the designs reflect those constraints.

The first priority trail segment study area of SR 162 between Howard Street and Hurt Road has few potential wetland constraints. Palustrine Ditch (a sensitive habitat type) parallels the majority of this segment with a few areas of Palustrine Wetland and Riverine habitat mainly around and north of Mill Creek.

Figure 3-3: Resource Map Sample



© 2012. While every care has been taken to prepare this map, GHD, MCOG and Caltrans make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damages) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.
 Data source: Mendocino County; parcel data; Casil; road data; GHD field work: 3/6-8/13 Created by gldavidson

3.2.2 Cultural

A Cultural Resources Survey was conducted by archaeologists from Tom Origer & Associates to identify potential cultural resources and recommend treatment of cultural resources within the study area. Separate reports were prepared for the Environmental Justice Grant study area (along county roads identified in the study area boundaries), and the State Planning and Research Grant study area (both sides of SR 162 through central Covelo and north to Hurt Road). The reports are provided as a separate deliverable because they contain confidential information about the location of cultural resources. This information was considered in the design concepts and will be available for further stages of design and implementation.

The survey included archival research at the Northwest Information Center, Sonoma State University, examination of the library and files of Tom Origer & Associates, and field inspection of the project location. The archival research and following field survey confirmed the presence of five previously recorded cultural resources. Three of the identified cultural resources are located around the intersection of Biggar Lane and Crawford Road and the remaining two located on the west side of SR 162 at the north end of the property the Tribal Economic Center and Casino occupy. This data will be used to inform the location of potential trail alignments in these areas.

3.3 SR 162 Conditions, Opportunities and Constraints

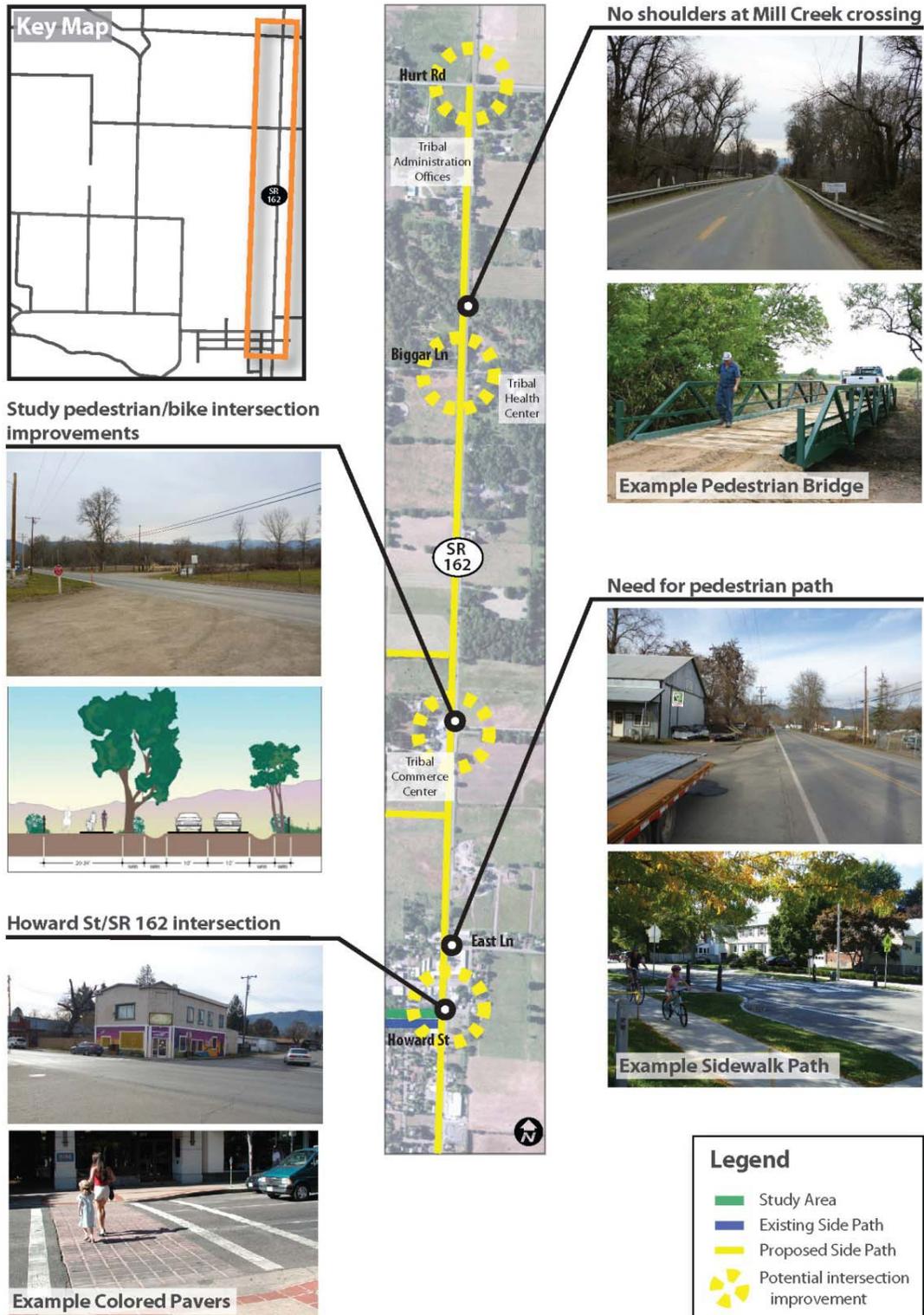
This study route extends from Howard Street north to Hurt Road (see Figure 3-4), at which point SR 162 turns east. This segment has the greatest level of concern regarding bicyclist and pedestrian safety of any in the region, as it has little to no shoulders, fast and relatively heavy traffic, and significant bicycle and pedestrian use to access the Tribal Commerce Center and Tribal Grounds, the Tribal Health Center at Biggar Lane, and the Tribal Administration Center near Hurt Road north of Miller Creek.

Starting south of Howard Street, SR 162 through downtown Covelo (see Figure 3-5) has a low posted speed limit, paved shoulders of varying widths, and intermittent sidewalks – primarily near Howard Street and near Keith’s Supermarket. A four-leg crosswalk at Howard Street with crosswalk warning signs and speed indicator signs helps to increase pedestrian safety. There is a challenge area for providing a separate bicycle and pedestrian trail north of Howard Street on the west where businesses and parking are located close to the travel lanes. South of Howard Street there are many wide paved areas with undefined driveways and parking areas that make pedestrian and bicycle routes less clear and protected. In some cases, parked vehicles block the space that could be used by bicyclists and pedestrians.

To the north, at Biggar Lane (see Figure 3-6), the typical highway condition has little or no shoulders, intermittent roadside ditches, limited right-of-way availability (approximately 50 feet between fence lines), large trees close to the roadway and a narrow bridge at Miller Creek. The intersection of SR 162 and Biggar Lane has limited sight distance for turning vehicles. The fact that the highway is fronted by private property much of the way is a significant constraint, both for the ability to acquire the right to establish a trail, and in terms of the relationship to adjacent agricultural and residential uses, driveways, gates, etc. The fact that the Round Valley Indian Tribe is willing to make land available for a public trail is a major opportunity.

At the north end of this segment (see Figure 3-7), there is an important need and opportunity to connect to the Tribal Administration Offices and Center, which will involve resolving how the trail will work with the existing driveways and parking areas. The form of the trail’s connection at Hurt Road will also be important to resolve.

Figure 3-4: SR 162 Overview



3.4 Howard Street and Airport Road

Howard Street, from Airport Road to SR 162 (see **Figure 3-8**), is Covelo's major educational and civic corridor, linking elementary, middle, high and charter schools, a family resource center, post office, and library/community center. With such concentrated public functions, Howard Street sees relatively high amounts of pedestrian and bicycle traffic, particularly between schools and nearby housing. The recent addition of sidewalks on the north side of Howard Street and the east side of Airport Road (see **Figure 3-9**) partly address the demand for safe access through this area; however, these new improvements will be far more useful to the community once connected to other existing and potential paths. Filling these gaps in access between Covelo's civic and educational centers will help unify and bring identity to this important area.

Foothill Boulevard has an existing pedestrian path approximately four feet wide on the south side, which terminates at the corner where Foothill Boulevard transitions to Airport Road, across the street from recent sidewalk additions and the Family Health Center. A ramp with tactile warning strip encourages pedestrians to cross at this intersection; however, there is no formal crosswalk, and trees reduce visibility at the corner. Here and further south on Airport Road, at the intersection with Howard Street, there is an opportunity to install high-visibility crosswalks and to increase the safety of the crossing.

Figure 3-5: Downtown/SR 162 Opportunities and Constraints

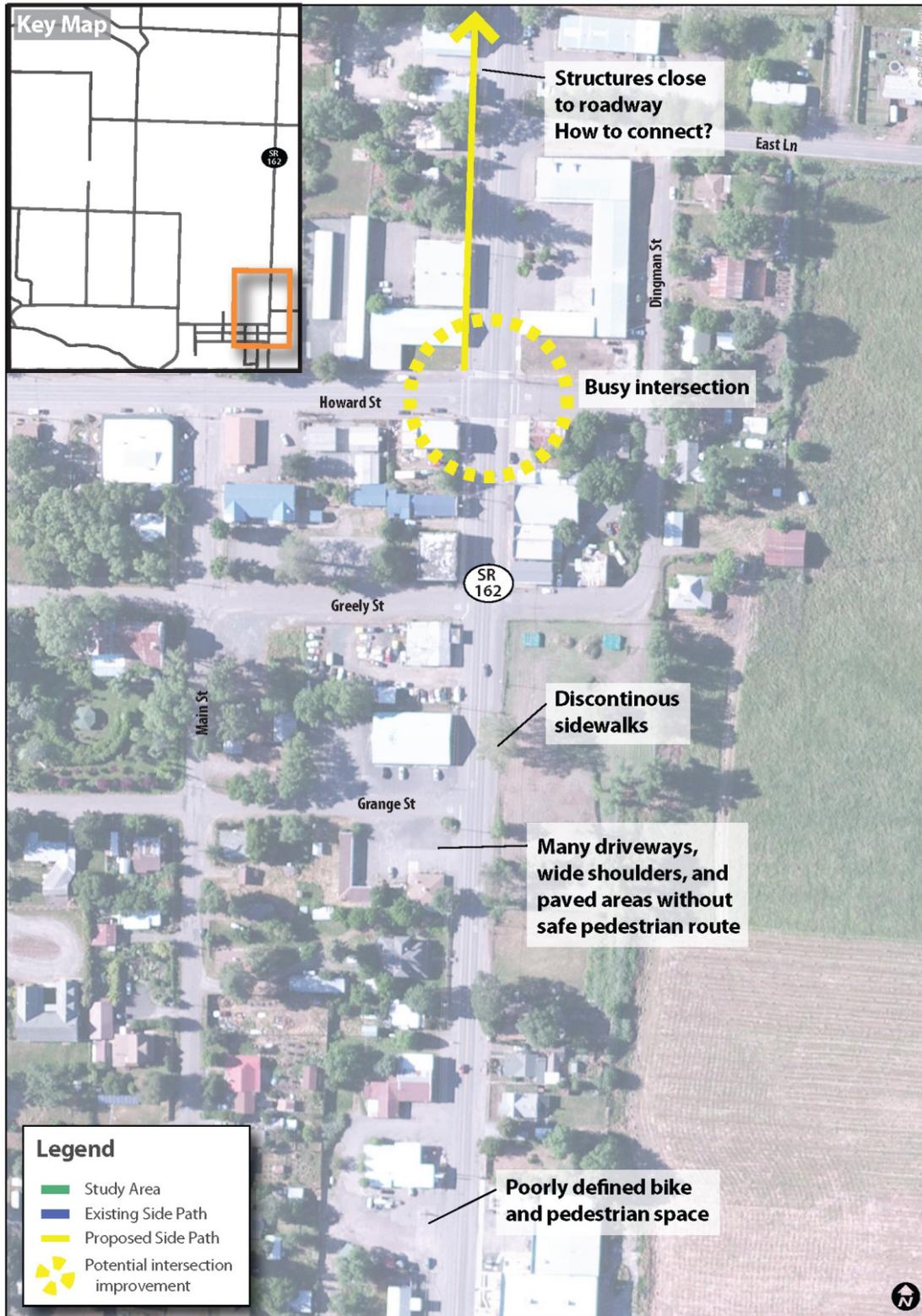


Figure 3-6: SR 162 at Biggar Lane and Mill Creek Opportunities and Constraints

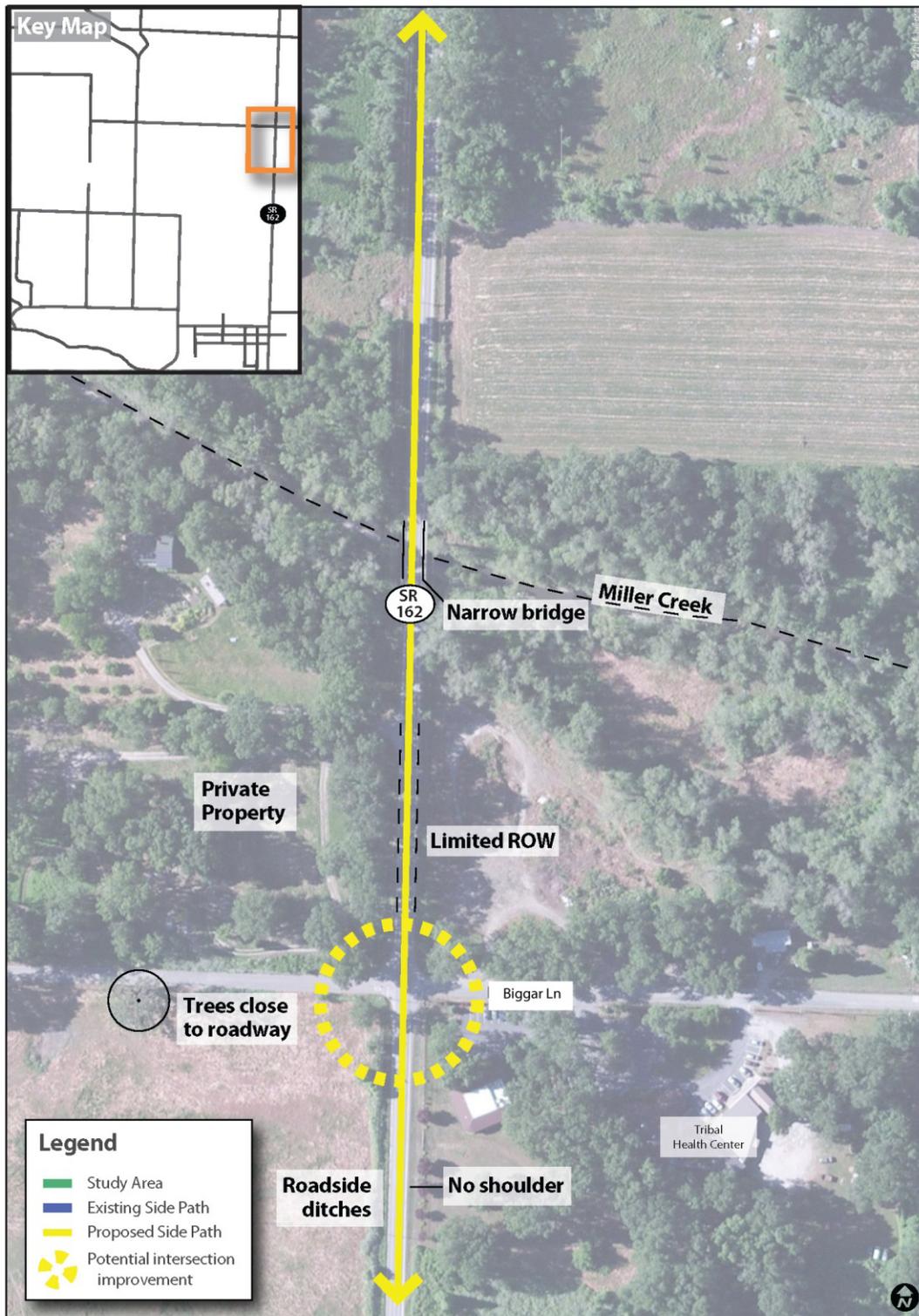


Figure 3-7: Hurt Road and SR 162 Opportunities and Constraints

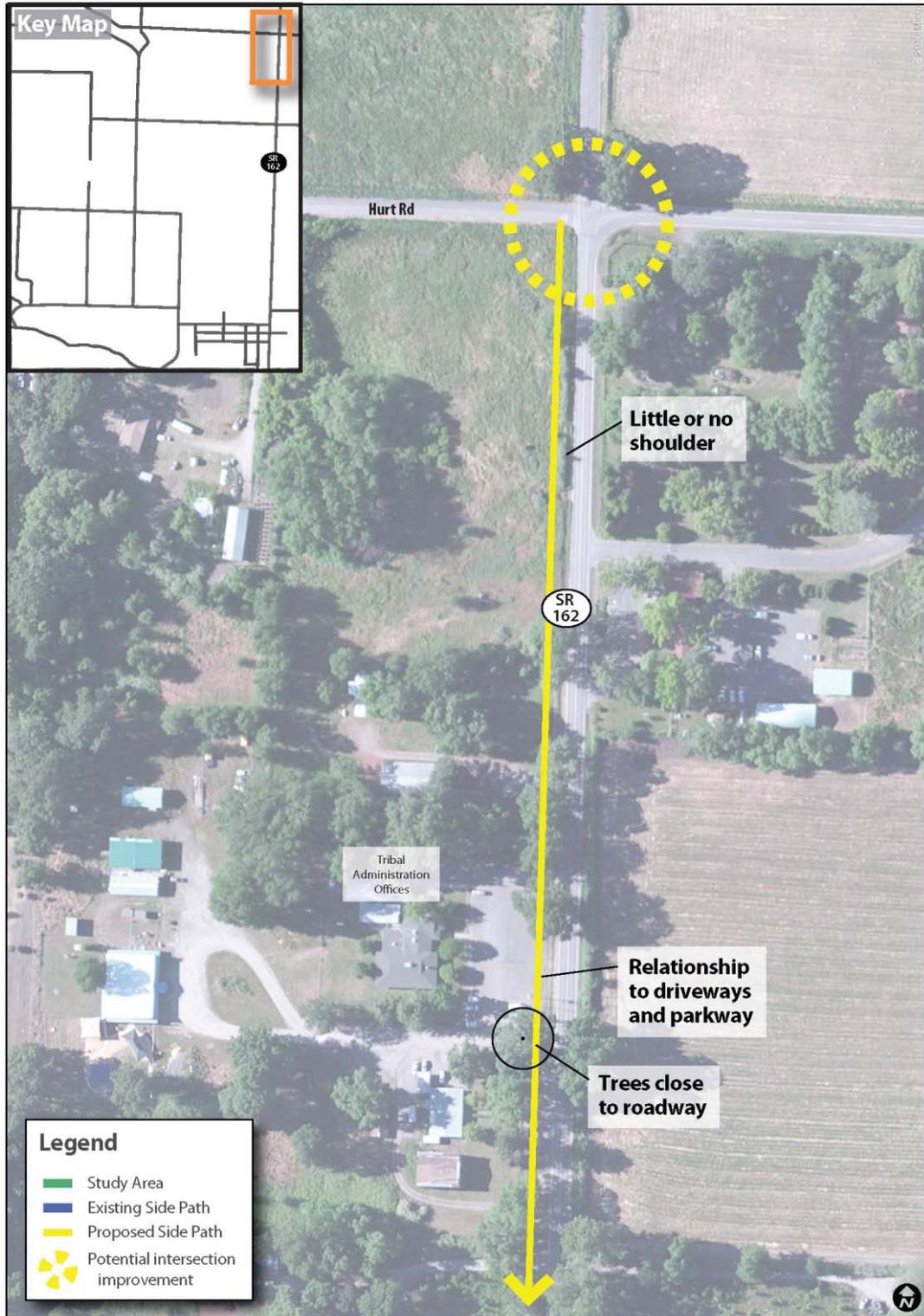
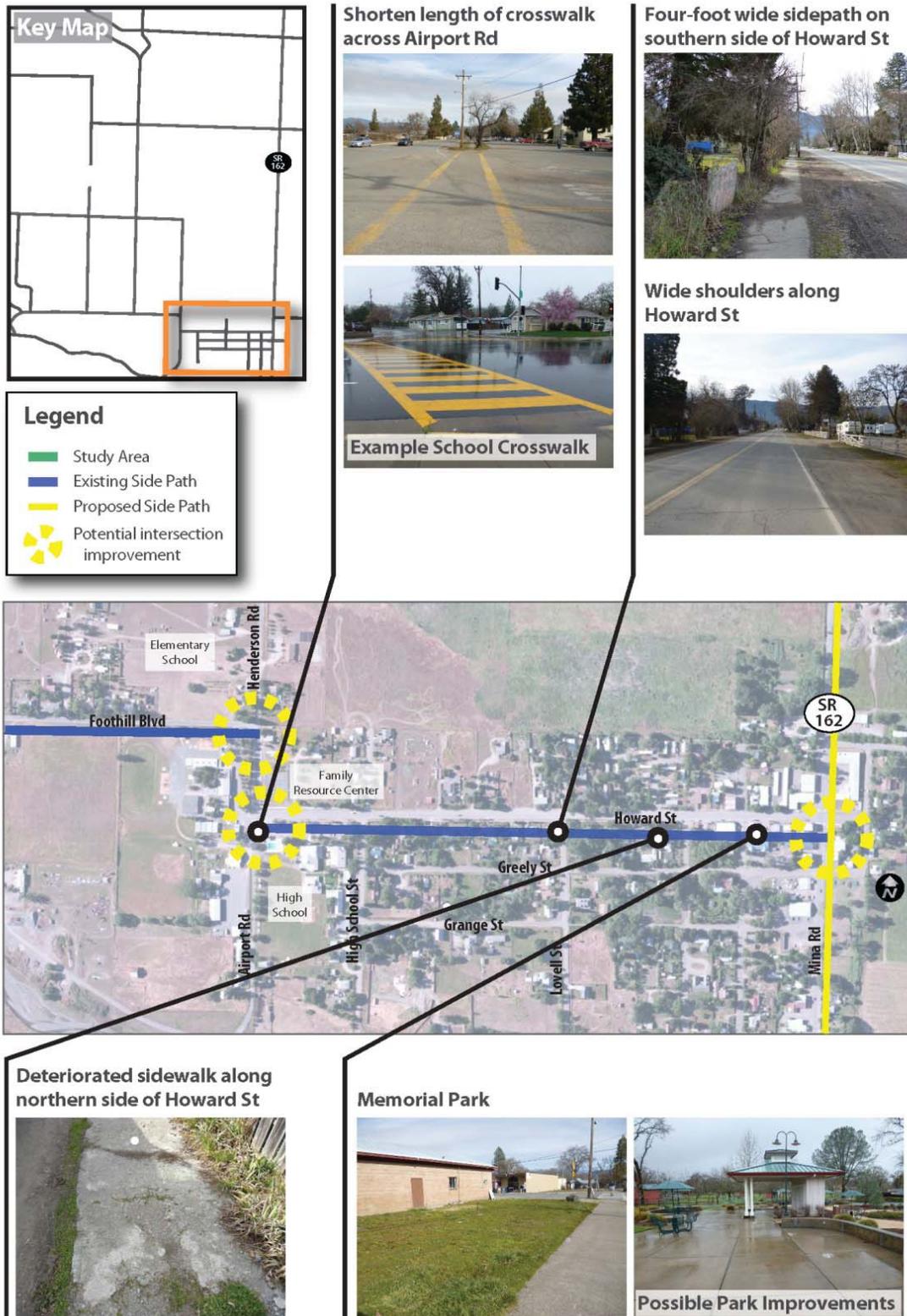


Figure 3-8: Howard Street and Foothill Boulevard Overview



A wide, undefined paved area at the southeast corner of Howard Street and Airport Road reduces safety by failing to provide a clear delineation between travel lanes, parking stalls, and pedestrian and cyclist space (see Figure 3-9).

Central Howard Street (see Figure 3-10) provides the opportunity to connect the schools near Airport Road with the other community amenities toward SR 162. A pedestrian path approximately four feet wide runs the length of Howard Street on the south side of the street, often separated from the roadway by a strip of vegetation with trees. In some locations, the frontage and path are being used as parking for adjacent residences. There are paved, striped shoulders approximately 4 feet wide on both sides of the road, but no formal bike lanes. The north side has an unpaved shoulder up to 20 feet wide. Where a sidewalk is present in a few locations, it is in deteriorated condition (outside of the recent sidewalk installation mentioned above). There is an opportunity for extending the paved shoulder to add space for both pedestrians and cyclists. Parking could potentially be prohibited along the shoulders where it would block potential bicycle and pedestrian pathways, but also requires drivers parking there to cross.

The eastern portion of Howard Street is the center of public activity, including the library, community center, post office and charter school all on the south side of the street. There are no crosswalks at this location, though many people park on the north side of Howard Street to access these facilities. Parking and vehicle access is also poorly defined in some locations. Formalizing driveways and parking layouts in the existing lots for these buildings will improve safety and increase available space for bicycle and pedestrian improvements.

Figure 3-9: Intersection of Airport Road and Howard Road Opportunities and Constraints

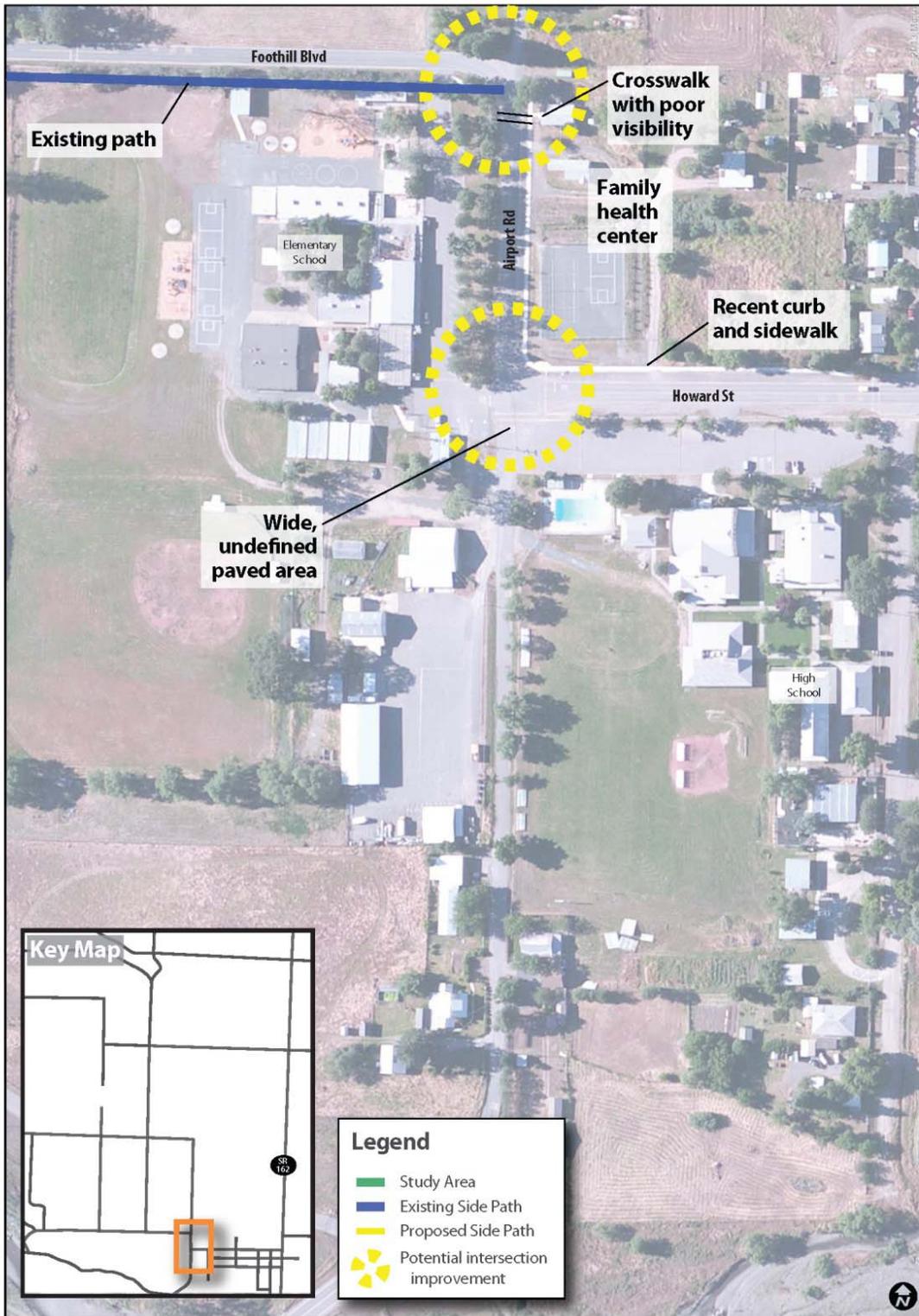
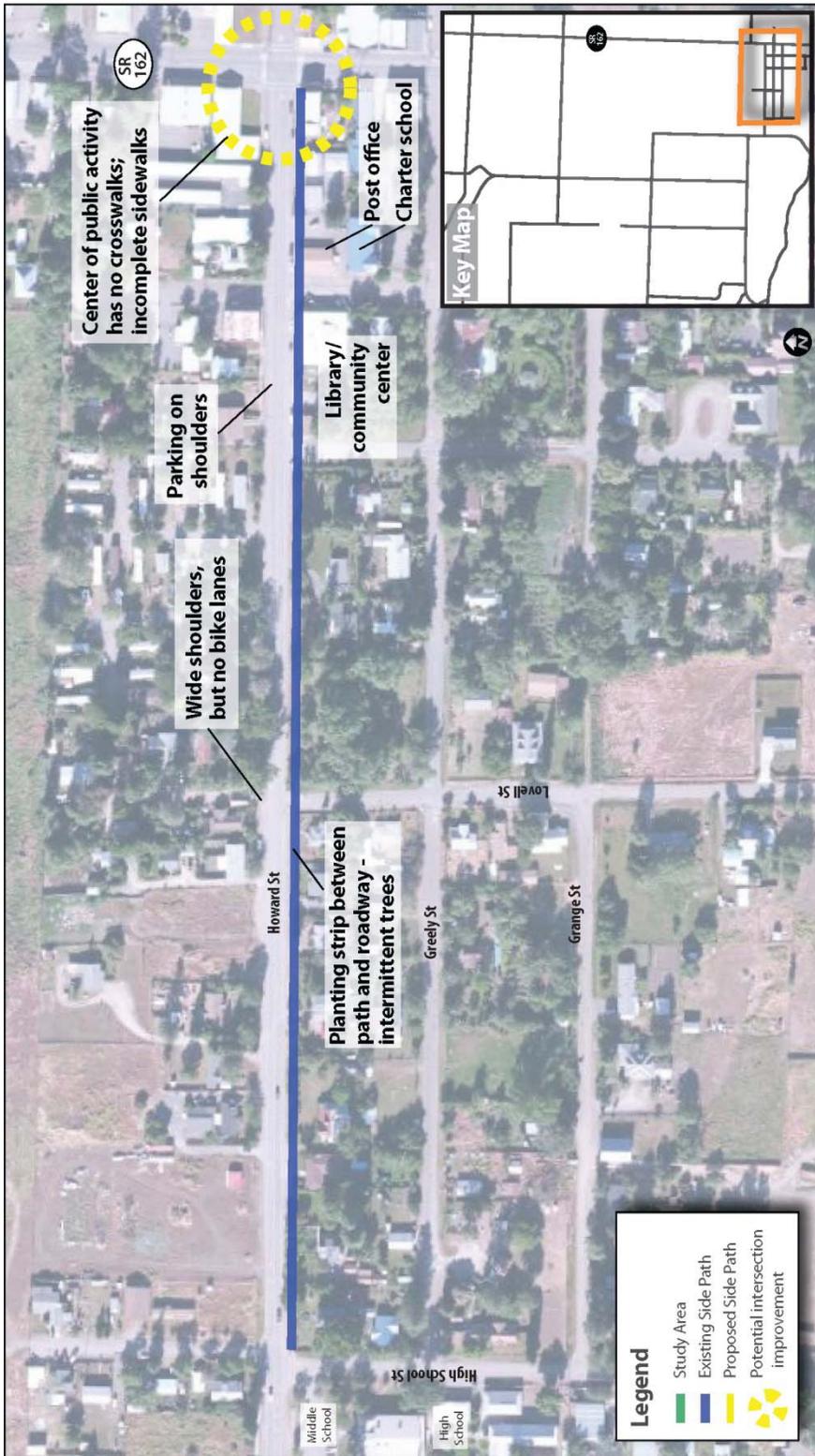


Figure 3-10: Central Howard Street Opportunities and Constraints



3.5 Off-Highway Trails

Opportunities for off-highway trails between Henderson Road and SR 162 were explored based on the Round Valley Indian Tribes' willingness to entertain establishing a public trail on Tribal land. Potential routes were examined extending east from the bend in Henderson Road and another approximately halfway between that route and Howard Street (see **Figure 3-11**). Running directly north and south of sewer ponds presents a possible issue for the northerly route, as does adjacency to an existing residence. The southern alternative provides better access to the Tribal Commerce Center and would have less impact on adjacent uses provided it is coordinated with planning of future uses being developed by the Tribe. Henderson Road, which would provide access to these two trail routes, is a relatively low-volume and low-speed residential street that could be designated as a Class III signed route to provide access.

3.6 Foothill Boulevard and Streets West of Henderson

West of Henderson Road, Foothill Boulevard has an existing 5 foot pedestrian path that extends to Tabor Lane (see **Figure 3-12**). There are opportunities for creation of safer crossings at the intersections at Tabor Lane and Crawford Road. This path, if widened and extended further west, could serve combined pedestrian and bicycle functions and connect the growing Tribal housing area to the schools and community facilities. Shoulders along Foothill Boulevard, while unpaved, have a typical width of 5 feet and may provide sufficient right-of-way to accommodate bicycle lanes and improved sidewalks. Existing utility poles and a swale following the north side of the road may limit the availability of this space.

Crawford Road and Tabor Lane connect north to Biggar Lane and an alternative access routes to the Tribal Health Center and Administration Offices. They have similar constraints to the northern portion of SR 162 in the study area: little to no shoulder and roadside ditches and vegetation that constrain access along the roadside. The intersections with Biggar Lane are also constrained in that they are sharp, right angles with roadside vegetation, that in some cases, constrains sight distance.

Figure 3-11: Off-Highway Trail Opportunities and Constraints between Henderson Road and SR 162

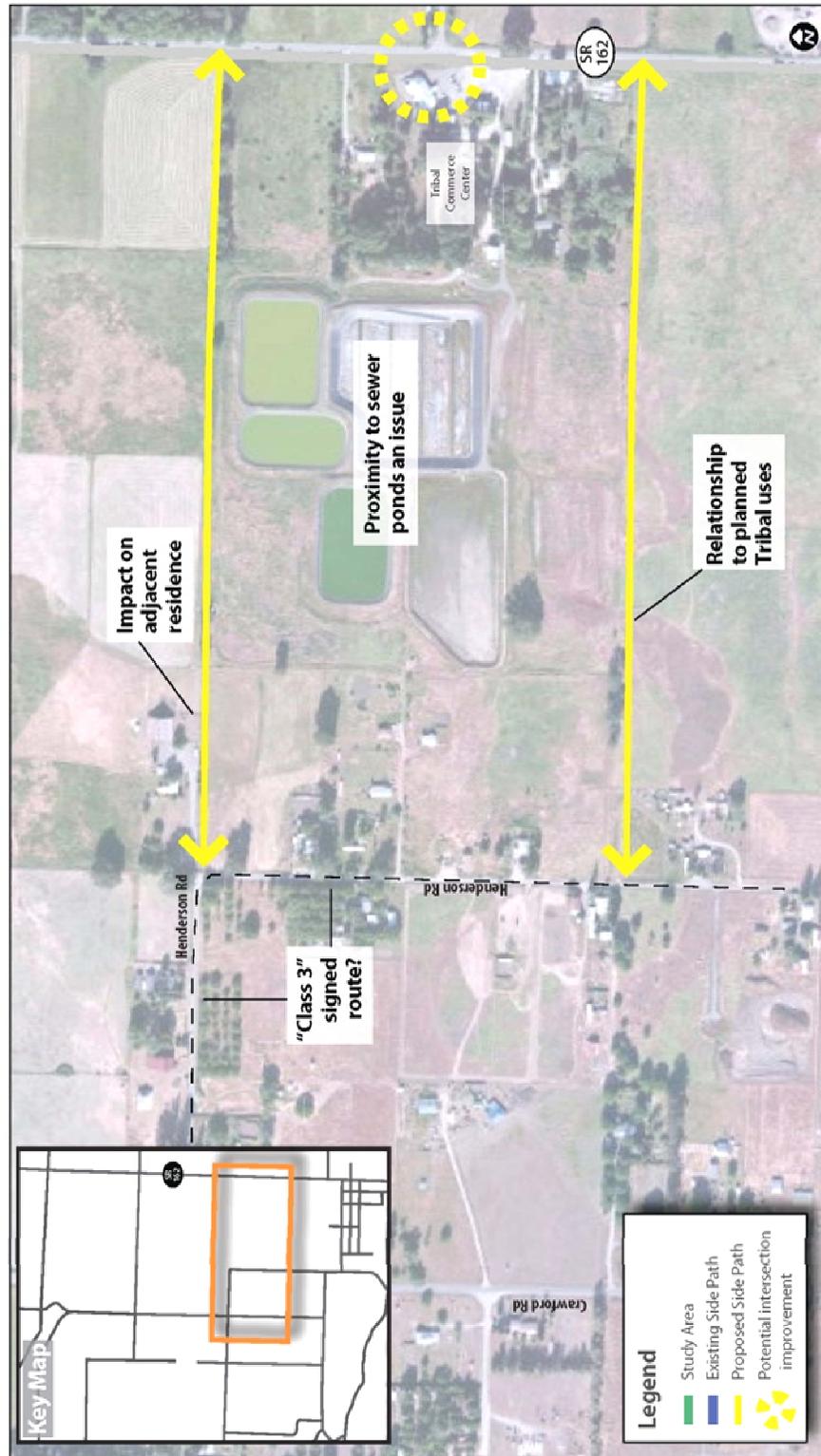
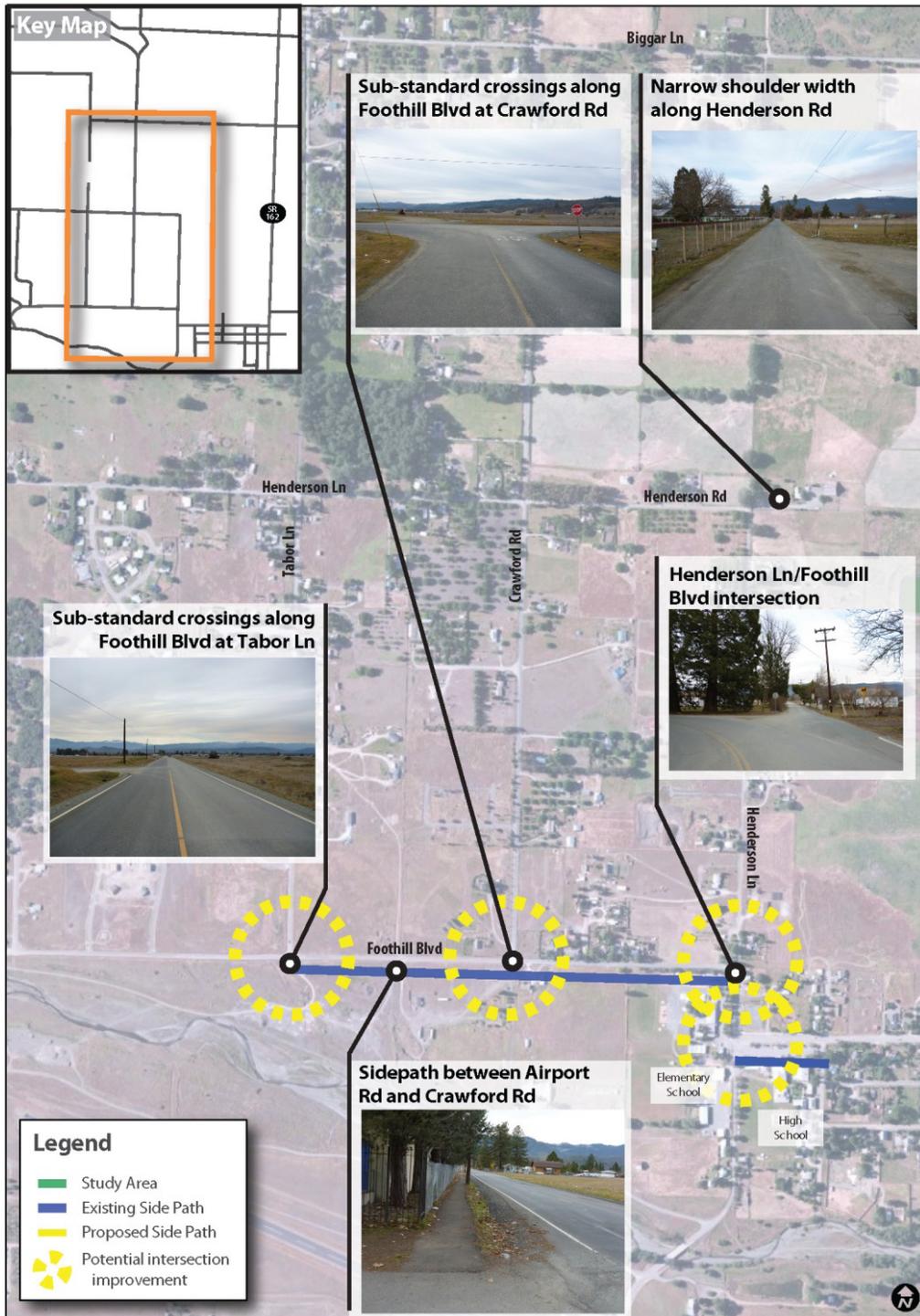


Figure 3-12: Foothill Boulevard and streets west of Henderson Road Opportunities and Constraints



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4 Design Standards and Guidelines

The term “trail” covers a very broad range of facility types, and can include formal and informal facilities, bike routes, sidewalks, paved and unpaved paths. The appropriate type of trail facility depends on the intended users, the setting, and the requirements and standards of the funding or approving agencies. Trail design for Round Valley should address objectives or challenges, including accommodating a wide range of users of varied abilities. Depending on the setting, this includes bicyclists (both road and mountain bikes), pedestrians/hikers (including strollers, skate boarders, and people walking dogs), people using wheelchairs or with other physical limitations, equestrians, and ATV users.

This chapter summarizes standards and guidelines for pedestrian, bicycle, and trail facilities that may be part of the trail network. Trail facilities will need to meet the design criteria of the applicable federal, state, and local standards. It summarizes the federal and state standards and guidelines that apply to trails and other forms of bicycle and pedestrian facilities. While the County General Plan and Regional Bikeway Plan (2012) discuss different types of bicycle and pedestrian facilities, these planning documents do not present county-specific design standards or guidelines.

This chapter also presents criteria by which trail improvements can be identified and evaluated.

4.1 Summary of Public Standards and Regulations

Table 4-1 identifies the topics addressed in each of the design guidelines and regulations contained in this chapter.

Table 4-1: Summary of Design Guidelines and Regulations

Design Guideline or Regulation	Topics Addressed
Federal	
American Association of State Highway and Transportation Officials (AASHTO)	
Guide for the Development of Bicycle Facilities (1999)	<ul style="list-style-type: none"> • Shared roadways (lane width, on-street parking, signing) • Bike lanes (widths, intersections, symbol guidelines) • Shared use paths (separation from roadways, width, clearance, design speed, grade, sight distance, intersections, signing, marking, drainage) • Other design considerations (bicycle facilities through interchange areas, traffic signals, bicycle parking, accessibility requirements)
The Architectural and Transportation Barriers Compliance Board (Access Board)	
Proposed Guidelines for Public Rights-of-Way (2011)	<ul style="list-style-type: none"> • Minimum standards for sidewalks, street crossings, and other elements of the public rights-of-way (including walkways and sidewalks, street or highway shoulders where pedestrians are not prohibited, crosswalks, islands and medians, overpasses and underpasses, on-street parking spaces and loading zones, and equipment, signals, signs, street furniture, and other appurtenances provided for pedestrians)

Design Guideline or Regulation	Topics Addressed
Draft Final Guidelines for Outdoor Developed Areas (2009)	<ul style="list-style-type: none"> Outdoor recreation access routes (surface requirements, maximum slope, clear width, passing spaces, slopes, resting intervals) Beach access routes (surface, clear width, slopes, resting intervals) Picnic and camping facilities
U. S. Department of Justice (DOJ) Amendment to the ADA Regulations Regarding the Use of Wheelchairs and Other Power Driven Mobility Devices 28 CFR part 35 (2011)	<ul style="list-style-type: none"> Requires managers of public facilities, including trails, to accommodate people with disabilities who wish to use various types of non-wheelchair powered vehicles for access See California Department of Parks and Recreation Departmental Notice No. 2011-02: Permissible Uses of Other Power Driven Mobility Devices (OPDMD)
Federal Highway Administration (FHWA)	
Manual of Uniform Traffic Control Devices (MUTCD) (2009)	<ul style="list-style-type: none"> Defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic Caltrans adopted the updated California MUTCD (CA MUTCD) in January 2012
Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide (2001)	<ul style="list-style-type: none"> Shared-use paths (access to path, path surfaces, changes in level, grades, rest areas, width, passing spaces, railings, signs) Recreation trails (path surfaces, changes in level, grades, rest areas, width, passing spaces, trails through steep terrain, steps, edge protection, signs) Outdoor recreation access routes (surface, clear tread width, openings, tread obstacles, protruding objects, passing space, cross slope)
State	
California Department of Transportation (Caltrans)	
Highway Design Manual (HDM) (2009)	<ul style="list-style-type: none"> Class I bikeway/shared use path (width, clearances, grade, separation from highways, design speed, sight distance, horizontal and vertical curves) Class II bike lane (width, placement, at-grade interchange design) Class III bike route (bike route criteria, at-grade interchange design) Multipurpose trails Clear recovery zones
California Highway Barrier Aesthetics (2002)	<ul style="list-style-type: none"> Barrier design
California MUTCD (2012)	<ul style="list-style-type: none"> Signs (application, placement) Pavement markings (word messages, symbols, arrows, reflectorization, patterns and colors on shared-use paths, demarcating obstacles, dimensions) Traffic signals and crossing beacons (application, placement)

California Department of Parks and Recreation	
Trail Handbook	<ul style="list-style-type: none"> Trail design, construction, survey, operations and maintenance standards
Accessibility Guidelines (2009)	<ul style="list-style-type: none"> Accessibility standards Recommendations and regulations for compliance with accessibility laws Signs (placement standards, minimum character sizes, level of information required)
Departmental Notice No. 2011-02: Permissible Uses of Other Power Driven Mobility Devices (OPDMD) (2011)	<ul style="list-style-type: none"> Establishes standards for OPDMD access (size, weight, speed, noise, emissions)

4.2 Transportation Facilities versus Recreational Trails

Pedestrian and bicycle facilities may be separated into two general categories: transportation facilities and recreational trails. Distinct design standards and guidelines may apply to each category as described below.

4.2.1 Transportation Facilities

Transportation facilities typically pass through or connect developed areas and serve as part of the multi-modal transportation system. Pedestrian and bicycle facilities may be required to meet transportation facility design standards in order to receive state or federal funding, comply with owner or regulatory agency access or design standards, or to secure approval of an encroachment permit within state rights-of-way.

Section 887 of the Streets and Highways (S&H) Code defines a "nonmotorized transportation facility" as a facility designed primarily for the use of pedestrians, bicyclists, or equestrians; it may be designed primarily for one of these uses or it may be designed as a joint-use facility. The S&H Code further states that a nonmotorized transportation facility may be part of the highway (such as a shoulder) or it may be separated from highway traffic for exclusive nonmotorized use (such as a bike path or sidewalk). Transportation facilities must comply with ADA Accessibility Guidelines for Buildings and Facilities (ADAAG). All standards set forth in Caltrans Highway Design Manual Chapter 1000 should be met in order for a Class I, II, or III bikeway to serve as a transportation facility.

4.2.2 Recreational Trails

With recreational trails, the trail is the destination. Recreational trails typically connect and traverse open space areas and natural features, rather than developed areas. The Federal Highway Administration (FHWA) describes recreation trails as trails designed to provide a recreational experience. Use of a recreation trail is a choice made by those individuals who desire the experience that the trail provides. Recreation trails should provide users with disabilities with access to the same range of trail experiences offered to other users at the site. This means that trails should be designed to reach destinations or points of interest and travel through various environments. Providing access to people with disabilities is best achieved by providing trail information in multiple formats and by minimizing grade, cross slope, barriers, and the presence of surfaces

that are soft or unstable¹. Recreational trails may be single use (e.g., hiking, biking, or equestrian only) or multi-use facilities.

4.2.3 Selection of Facility Category

In general, more grant funding is available for construction of pedestrian and bicycle facilities that serve as transportation facilities than those that serve primarily recreational purposes. Transportation pathways typically serve a wide range of users and connect residential land uses with transit, commercial, institutional, office, and recreational uses. Due to these characteristics, transportation pathways are more likely than recreational pathways to offset vehicular trips, potentially easing roadway congestion and reducing greenhouse gas emissions and urban runoff. Pathways meeting Class I bikeway/ADA-accessible pathway design standards provide greater transportation benefits than pathways that do not meet these standards and are eligible for a larger pot of grant funding for construction. While a recreational trail is less expensive to construct than an ADA-compliant pathway or Class I multi-use path, funding sources for recreational pathways are limited.

4.3 Best Practices Design Toolbox

Good trail design goes beyond meeting standards; it utilizes the most creative and practical techniques in a context-sensitive way to address the opportunities and constraints. In Round Valley the settings include areas along and adjacent to conventional rural highways and county roads, as well as in the Covelo small town neighborhood and commercial streets. Table 4-2 presents a design toolbox that includes design elements often employed in these settings. This toolbox was presented and discussed with the community during the first phase of engagement for the development of the plans for Round Valley Trail Improvements and includes the following design elements:

- Bikeway and trail types
- Crossing treatments
- Pedestrian facilities
- Fixtures and amenities
- Traffic control and calming

¹ FHWA. Designing Sidewalk and Trails for access, Part II of II: Best Practices Design Guide.

Table 4-2: Design Toolbox

Bikeway/Trail Types



Class I Path / Trail



Class II Bike Lane



Class III Shared Route Marking



Informal Path / Trail

Crossing Treatments



Pedestrian Refuge Island



Ladder Crosswalk



Typical Crosswalk (Transverse Parallel)



Raised Crosswalk

Pedestrian Facilities



Sidewalk with Planter Strip



Curb Tight Sidewalk



Narrow Shoulder



Wide Shoulder

Fixtures and Amenities



Interpretive Signage



Wayfinding Signage



Lighting



Fencing



Benches, Trash Receptacles

Traffic Control / Calming



Curb Bulb-Outs



Traffic Circle



Rectangular Rapid Flashing Beacon



High Intensity Activated Crossing (HAWK) Beacon

5 Improvement Concepts

These improvement concepts reflect input from the TAG received at the October 23, 2012 and February 14, 2013 TAG meetings, and public input from the well-attended public workshops on February 28 and September 5, 2013.

The small-scale figures presented in this report were also provided to MCOG and Caltrans as plan/presentation sized drawings for future use in preparing construction documents. In the case of SR 162 in downtown Covelo, Howard Street and Foothill Boulevard, these are schematic plans prepared in Adobe Illustrator format based on GIS site data supplemented by limited field survey, consisting of cross-sections at intervals. The presentation plans for trails paralleling SR 162 north of central Covelo, including trails on Tribal land, are prepared as similar schematics in Illustrator format. Plans for these areas were also prepared in CAD format, including more detailed topographic and boundary survey. The plans for improvements along SR 162 north are thus one step closer to complete construction documents.

The improvement costs listed in this chapter are based on detailed preliminary estimates of probable cost, which are presented in **Appendix C**. The summary costs presented below include allowances for survey, design, environmental review, and project administration, as well as cost for construction, as detailed in **Appendix C**.

In some cases construction of the trail along SR 162 as envisioned will require acquisition of right-of-way from adjacent private properties. This would be strictly on a willing seller basis. The estimates include an approximate area of right-of-way required, and a “placeholder” cost of \$2.00 per square foot for acquisition, which reflects the acquisition cost estimate from the recent Caltrans SR 162 Improvements PSR. Actual right-of-way costs would be subject to negotiation. Right-of-way acquisition costs are not estimated for trails occupying Tribal land, as the Tribes have made these trails a priority project of their own. It is assumed that an easement would be granted by the Tribes to a public agency to formalize the trail as a public facility, as discussed in Chapter 6, Implementation Steps.

5.1 Downtown (SR 162 south of Howard)

An opportunity is presented by the downtown district along SR 162 from the existing cluster of businesses near Howard Street to Keith’s Supermarket at Eberle Street, approximately one-third mile south. Heavy use by school children was observed on this segment after school. Design strategies are proposed that help to enhance the unique rural character of downtown Covelo while improving bicyclist and pedestrian access and safety throughout the district.

A continuous sidewalk or path with associated amenities is proposed to tie this area together, extending the existing sidewalks near Howard Street along the west side of SR 162, with bike lanes on both sides of the street. Improvements such as lighting, widening, repaving and extending existing sidewalks, and adding landscape areas could clearly separate parking and driveways from bike lanes and pedestrian pathways, while providing a safe and welcoming streetscape. Planting areas can also be used to discourage angled parking that would involve vehicles backing up into SR 162 traffic. Where space does not allow for larger planted areas, a narrower, two to three foot planted buffer could potentially be installed between street parking and the sidewalk or path. Generally, sites have adequate on-site parking space so that parallel on-street parking is sufficient. These design treatments would presumably be optional, based on acceptability to the adjacent property owners, though they are entirely within the public right-of-way, and could be completed without property owner permission.

Bike lanes on both sides of SR 162 will improve access throughout the district and connect this area to the town's residential and civic areas. Space for these sidewalks and bike lanes could be achieved by standardizing vehicular travel lanes to 11 feet, as conditions allow, and paving shoulders where they are currently unpaved. Bike lanes would be provided at 5 feet wide, and a minimum of 7 feet of street parking would be maintained, except where interrupted to provide planting areas.

5.1.1 SR 162 at Howard Street

(see Figure 5-1)

The SR 162/Howard Street intersection was identified by the community as a high priority for improvement. Curb extensions or “bulb-outs” using decorative pavers are proposed at the intersection, providing space for street trees and benches while shortening crosswalks. Trees, lighting, and benches would help create a more pedestrian-friendly environment in conjunction with traffic calming. Shortened “ladder style” crosswalks improve pedestrian safety through increased visibility and by reducing the time that pedestrians spend crossing the street itself. A concept, suggested at the public workshop, of enlivening the SR 162/Howard Street intersection using colored stamped asphalt is illustrated and included in the cost estimate.

Estimated total cost for these improvements: **\$841,000**

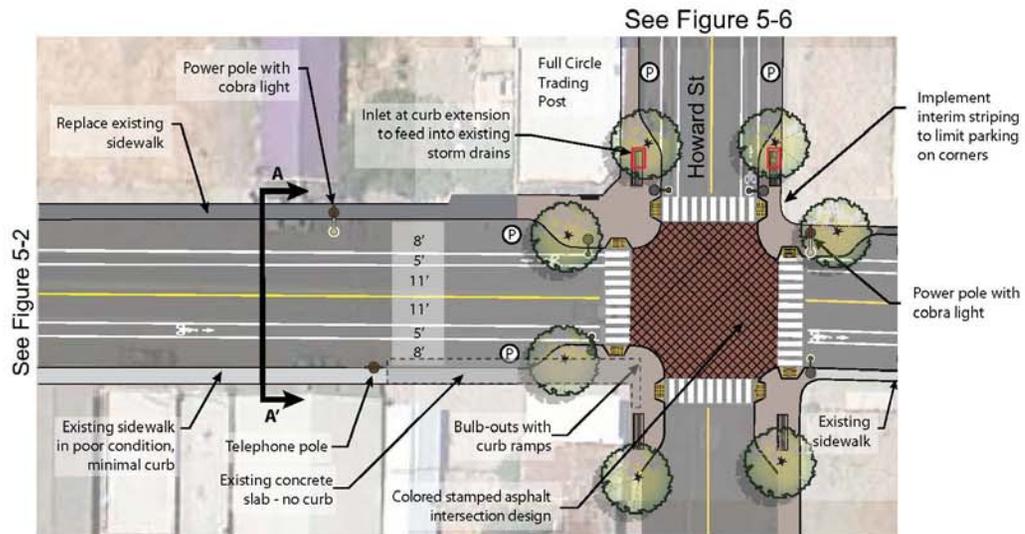
5.1.2 SR 162 at Grange and Greeley Streets

(see Figure 5-2)

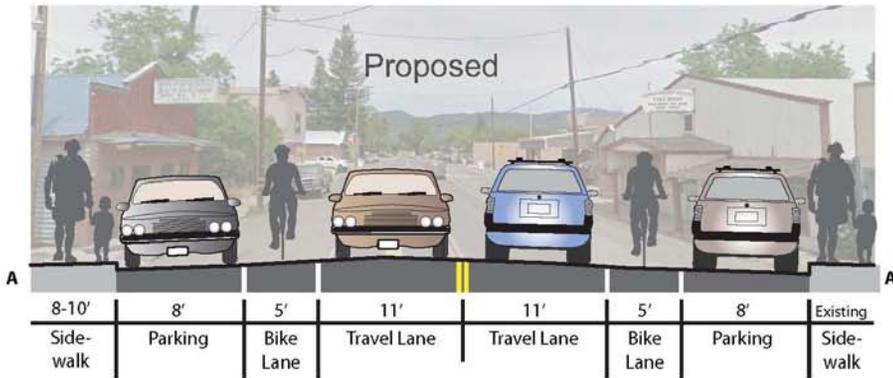
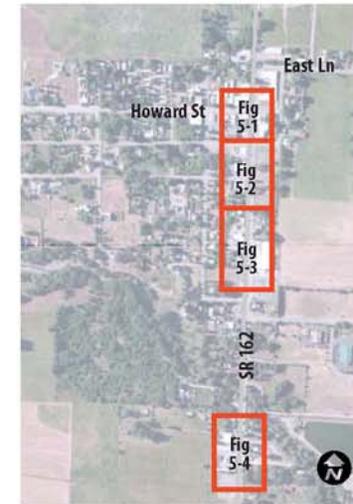
Extended sidewalk or planted areas with trees can be used to define driveways, buffer pedestrians from traffic, and help give amenity and identity to the district. Where existing frontages lack formalized driveways or parking layout, the sidewalks and planting areas can delineate entrances and minimize potential conflict areas between pedestrians and vehicles. The planting areas would be protected by asphaltic concrete (AC) curbs with regular openings to allow flow of runoff into them. The additional planting area and the drainage openings would allow increased percolation of runoff, potentially addressing localized storm drainage issues along the corridor.

The intersection of Grange Street and SR 162 (see Figure 5-2) presents an opportunity to implement these strategies. June Marie's Gifts currently has a parking lot at the building's front on Grange, as well as parallel parking on the building's side at SR 162. A planted buffer along SR 162 could create an improved pedestrian experience and a better-defined parking lot in front of the building. Across Grange, a parking area loosely defined by logs and trees in containers can be updated to match the proposed streetscape along SR 162.

Estimated total cost for these improvements: **\$153,000**



Key to SR162 South Sheets



1 INCH

0 10 40 80

- Existing sidewalk
- Repave existing sidewalk
- New sidewalk
- High visibility crosswalk
- Curb extension plaza
- Street tree
- Street lamp
- Bench
- Existing Storm Drain

Figure 5-1: SR 162 / Howard Street Intersection

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

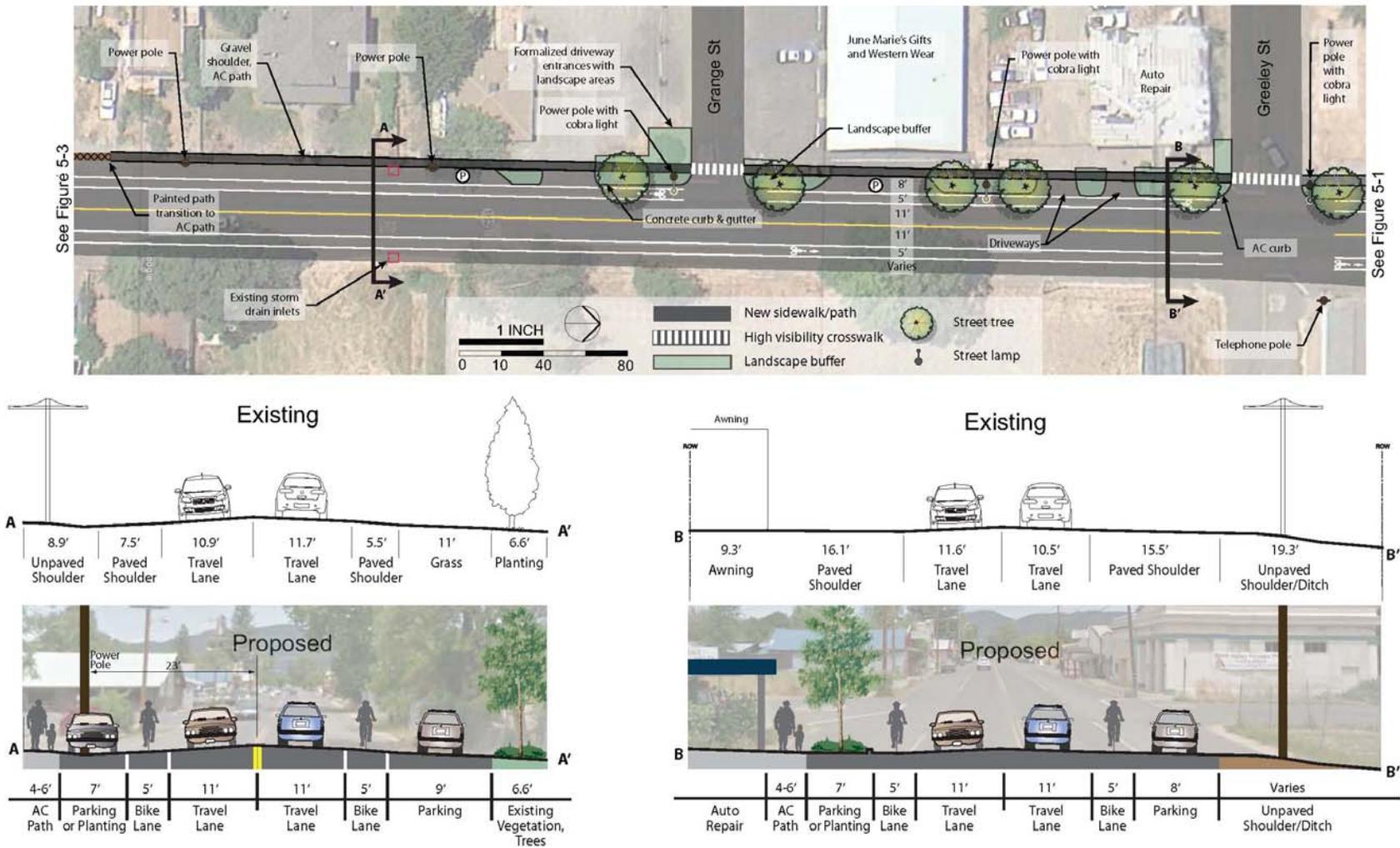


Figure 5-2: SR 162 - Greeley and Grange Streets

5.1.3 SR 162 – Redwood Market to Eberle Street

(see Figure 5-3)

The frontage of Keith’s Supermarket has been improved with curb, gutter, sidewalk, a formal driveway landscaping, and a small plaza in front. Improvements are proposed on the west side of this segment to improve bicyclist and pedestrian safety as well as aesthetics.

The Napa Auto Parts business at the northwest corner has store-front parking that is only wide enough for parallel parking without requiring vehicles to back out into SR 162. The proposed solution is a painted/striped walkway adjacent to the bike lane and a timber barrier or curb between the walkway and the parking area that would allow parallel parking but not angled parking.

At Redwood Market/Gas Station, an existing power pole, sign, and storm drain are contained within an island and planter that extends into the area that would otherwise be available for a walkway. The proposed solution is to continue the painted/striped walkway between the bike lane and the planter, setting it back once past the protruding planter to align with the walkway space to the south.

A barn and horse pasture currently occupies the northwest corner of SR 162 and Eberle Street. There is not sufficient space outside the existing fence to provide for the bike lane, parallel parking and a 5 foot minimum sidewalk or path. An informal 4 to 6 foot asphalt path is proposed as an interim pedestrian improvement until such time as the site may be developed for more intensive use.

An enhanced crosswalk with a bulb-out is recommended at Eberle Street, across from Keith’s Supermarket. This crosswalk will connect the proposed pedestrian amenities on the west side of SR 162 with one of Covelo’s larger retail establishments, as well as its existing outdoor seating area. It can also be used to delineate the southern end of the downtown central business district.

Estimated total cost for these improvements: **\$175,000**

Note that the bike lanes are proposed to continue in the intervening area between Figure 5-3 and Figure 5-4, and this is included in the cost estimate, but no other improvements are proposed in what is primarily residential frontage.

5.1.4 Southern SR 162 South - Commercial Area

(see Figure 5-4)

At the southern end of SR 162, approximately one-quarter mile south of Keith’s Supermarket, an additional small commercial area exists on the west side of SR 162, presenting another opportunity to improve pedestrian access and safety (see Figure 5-4).

A painted walkway would be delineated on the business side, and tree planting areas bordered by timber barriers would help delineate driveways and buffer the path. This pathway would extend approximately 300 feet along the west side of the road to connect the Wagon Wheel Motel, Covelo Fire Department, and My Café Restaurant. This walkway will help alert drivers to the presence of pedestrians when entering and exiting driveways at these facilities.

Estimated total cost for these improvements: **\$171,000**

5.2 Howard Street

The proposed improvements for Howard Street are designed to create a safe and enjoyable corridor for walking and biking. This was expressed by the community as a very high priority due to the presence of the schools at the west end and the public activity around the library/community center, post office, and charter school at Main Street.

Bike lanes, sidewalks, crossing improvements and additional landscaping will connect the surrounding neighborhoods to schools and the civic core along Howard Street. A 6 foot bike lane can be accommodated by paving existing unpaved westbound shoulders and repaving eastbound shoulders and reducing traffic lanes to 11 feet. The existing 5 to 6 foot side path on the south side of Howard should be resurfaced to provide a more continuous and consistent surface. Utility poles and trees constrain the widening of the entire path, but it could narrow to a minimum of 4 feet in constrained locations. Additional street trees and plantings could be added to the buffer between the bike lanes and the side path. Pedestrian-level lighting was identified as a priority by the community, and is included in the designs and estimates. This will necessitate the creation or amendment of a lighting district to pay the electricity bill and maintain the lights as discussed in **Chapter 6**. The estimates assume conventional lighting with underground electric, but solar-powered light fixture options may be worth considering.

Throughout the corridor, continental or “ladder style” striped crosswalks could provide a high visibility crossing and should be painted yellow when they directly connect to a school. Also, a paved surface with truncated domes needs to be connected to crosswalk markings to provide for universal access and meet the Americans with Disability Act (ADA).

5.2.1 Howard Street at Main Street

(see Figure 5-5)

The Covelo civic core lays at the intersection of Howard and Main Streets. The public library and post office anchor the south side of the intersection, and the Eel River Charter School is also an important destination. The space for the Farmers Market to the west of the library/community center is also an important gathering place.

Bike lanes are proposed the entire length of Howard Street. Curb extensions or “bump-outs,” potentially using decorative pavers, would narrow the pavement width at the intersection, shortening the distance pedestrians have to cross Howard Street and creating additional public space outside these civic facilities for benches, better street lighting and street tree plantings. This will encourage people to cross in the crosswalks, and along with high-visibility crosswalks, will help slow motorists and make it easier for them to see people trying to cross. Maximum on-street parking would be retained near the intersection to support quick stops at the library or post office. A sidewalk extension would define the driveway opening at the post office, and a painted walkway is proposed to be striped across the post office parking entrance to deter parking on the pedestrian route and remind motorists to watch for pedestrians. New sidewalks or paths (concrete or asphalt – concrete is assumed in the cost estimate) are proposed on both sides of Howard Street extending east to SR 162. Where feasible, formalization of the planting strip between the roadway and the sidewalk/path and planting of additional street trees would be desirable. Pedestrian-level light fixtures would also be extended through this segment.

Creating a wider sidewalk in front of Eel River Charter School, and formalized parallel parking on northbound Main Street would better organize traffic and allow a sidewalk to be paved connecting to the school.

Estimated total cost for these improvements: **\$748,000**

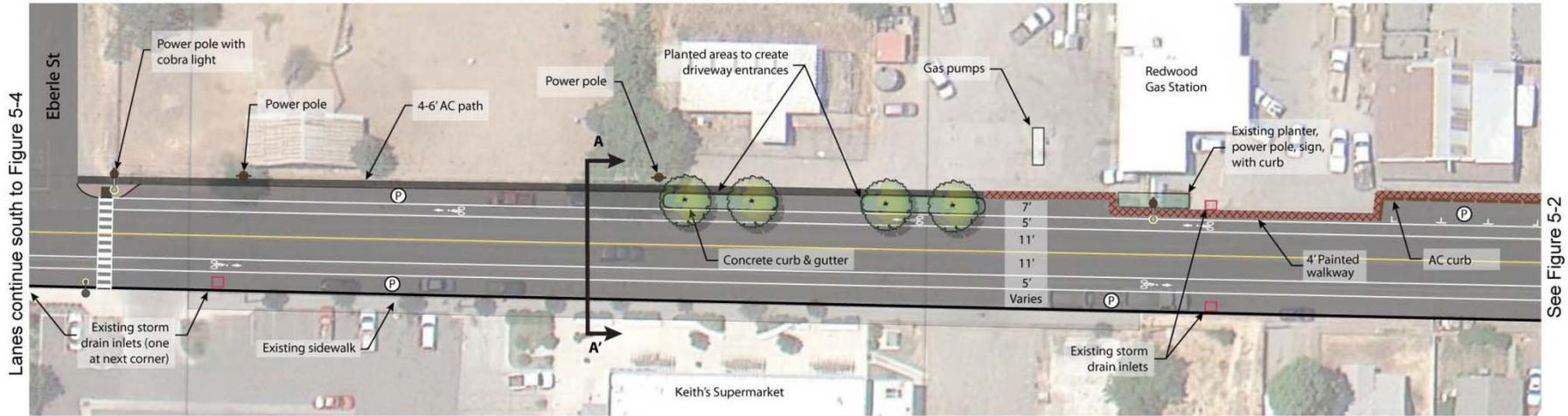
5.2.2 Howard Street at Airport Road/Schools

(see Figure 5-6)

In addition to creating improved bike and pedestrian connections along Howard Street, calming traffic and providing safe crossings at intersections is a priority. The intersection of Howard Street at Airport Road connects to the elementary school. New sidewalk, curb, and gutter were constructed on the northeast corner as a county project within the past few years. This was a significant improvement that would be further enhanced by addition of high-visibility crosswalks. The crossing distances can be shortened by creating a defined driveway entrance to the parking lot on the southwest corner. Reducing the turning radius on the southeast corner will also help slow traffic making right turns from Airport Road northbound onto Howard Street. Formalizing the existing planting strip in front of the high school would buffer the path and help to calm traffic. Tree plantings would be protected by asphaltic concrete (AC) curbs around the planting areas, which would feature regular opening to maintain the current drainage patterns and allow increased percolation. AC curbs would be provided at the driveway entrances and street corner. The frontage on the opposite side near the tennis courts is another opportunity for tree planting that would help calm traffic and improve aesthetics.

At the elementary school, a new sidewalk connection and pathway extending north can be made through the landscaped frontage. The sidewalk will encourage children to walk there, rather than through the school parking lot in undefined areas or along the west side of Airport Road. A fence to the east of the sidewalk would deter children from crossing Airport Road at locations other than the marked crosswalks.

Estimated total cost for these improvements: **\$781,000**



Key to SR162 South Sheets

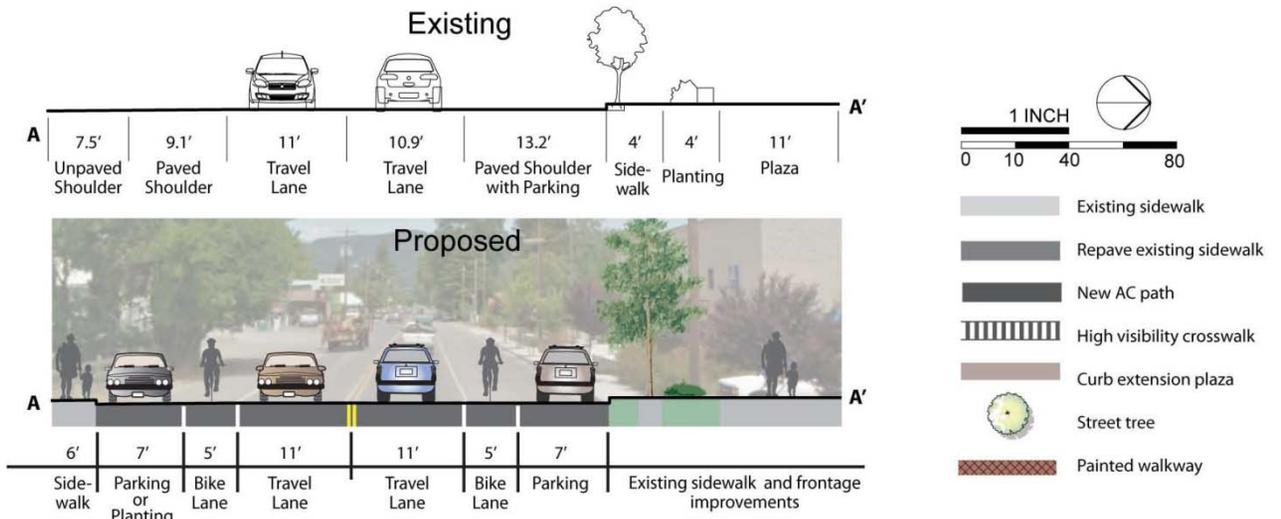
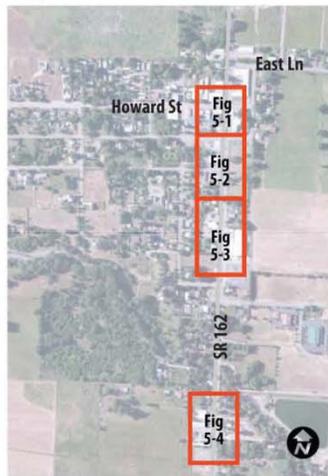


Figure 5-3: SR 162 – Redwood Market to Eberle Street



Lanes continue north to Figure 5-2

Key to SR162 South Sheets

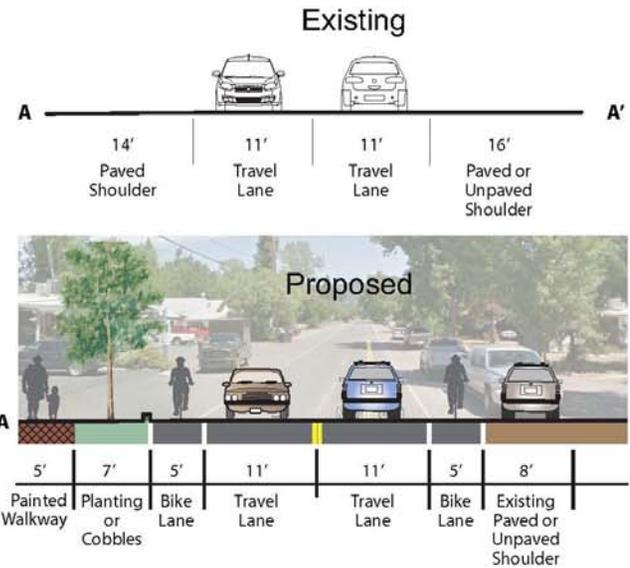
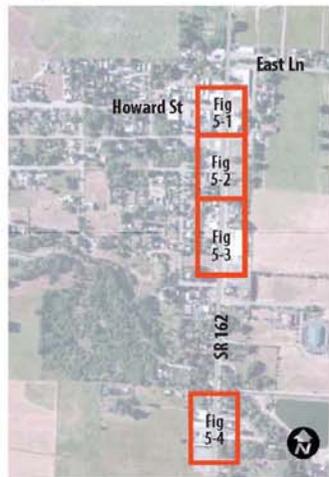
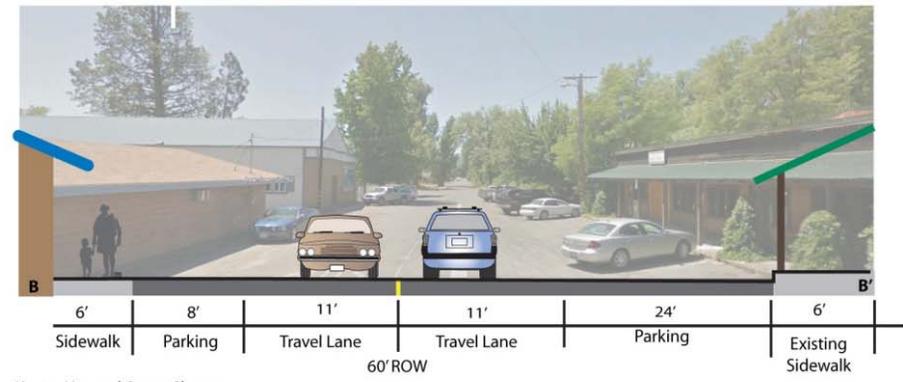
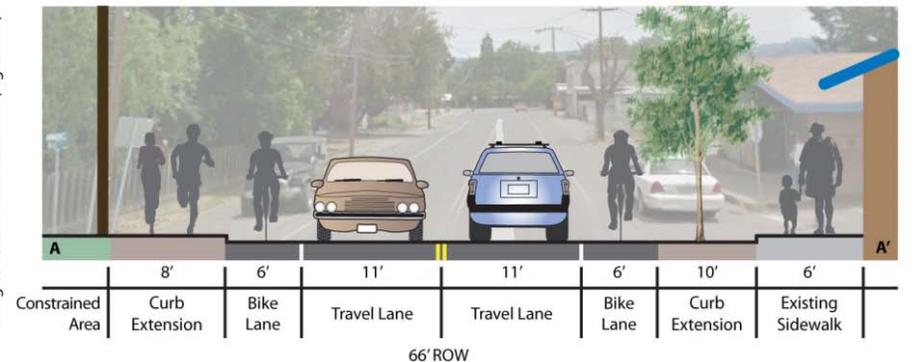


Figure 5-4: SR 162 - South

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study



- New sidewalk
- Repave existing path/sidewalk
- High visibility crosswalk
- Planting area
- Street tree
- Pedestrian-level lighting
- Street lamp
- Painted walkway

Figure 5-5: Howard Street at Main Street

5.2.3 Foothill Boulevard

(see Figure 5-7)

Foothill Boulevard starts at the intersection of Airport Road with a sharp curve to/from Airport. This is the primary travel route, but the intersection also has a connection extending north into Henderson Lane, a more local road. Given the prospective trail traffic and proximity to the elementary school and the Park and Play after school facility across the street, this is an important opportunity to improve bicyclist and pedestrian safety. This is an especially important location for improvement if Henderson Lane becomes the future connection to a trail across Tribal land that in turn connects to a north-south trail along SR 162.

It is anticipated that existing traffic levels would not warrant the creation of a 3-way stop at this intersection and this would increase traffic congestion at school drop-off and pick-up times.

An existing path along Foothill Boulevard terminates at the apex of the Foothill/Airport corner; however, this is not a safe crossing location, especially considering the trees that block visibility.

The proposed solution is to direct pedestrians and bicyclists to cross at the Howard/Airport intersection or at a crosswalk to the west of the elementary school driveway. To facilitate these connections a path is proposed in the landscaped frontage of the school extending north to a crosswalk across the entry to the parking lot. A 4 foot chain link fence is proposed between the path and Airport Road to deter jaywalking.

A high-visibility school crosswalk would also be installed across Henderson Lane, with connecting paths. Crosswalk warning signs or potentially user-activated rectangular rapid-flashing beacon (RRFB) system could be installed to increase crossing safety on Foothill Boulevard.

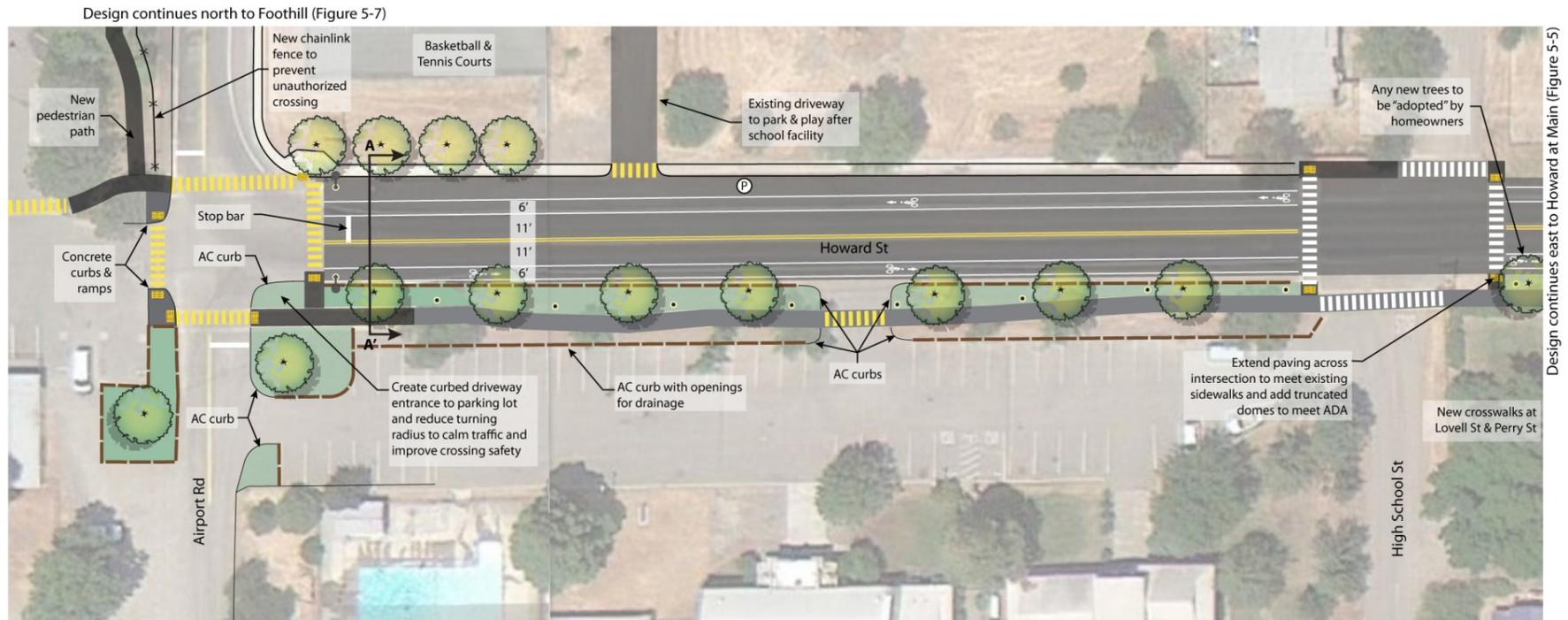
Per input from local residents at the September 5, 2013 workshop, drop-off circulation for the Park and Play after school facility would work best if it entered via the driveway on the north side of Howard Street just east of the tennis courts (see Figure 5-5) and exited on the north side of the facility onto Airport Road, near Henderson Lane (see Figure 5-7).

Repaving the existing path on the south side of Foothill Boulevard that extends west past the school, and extending the path west to at least Tabor Lane would accommodate schoolchildren and others travelling from the Tribal Housing area. Establishing crosswalks and crosswalk warning signs at Tabor Lane and Crawford Road would also benefit safety.

To the north, at the intersections of Tabor Lane and Crawford Road with Biggar Lane, vegetation should be trimmed to improve sight distance for turning vehicles, which was mentioned as a safety issue at the first public workshop.

Estimated total cost for these improvements: **\$299,000**

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Key to Howard Street Sheets

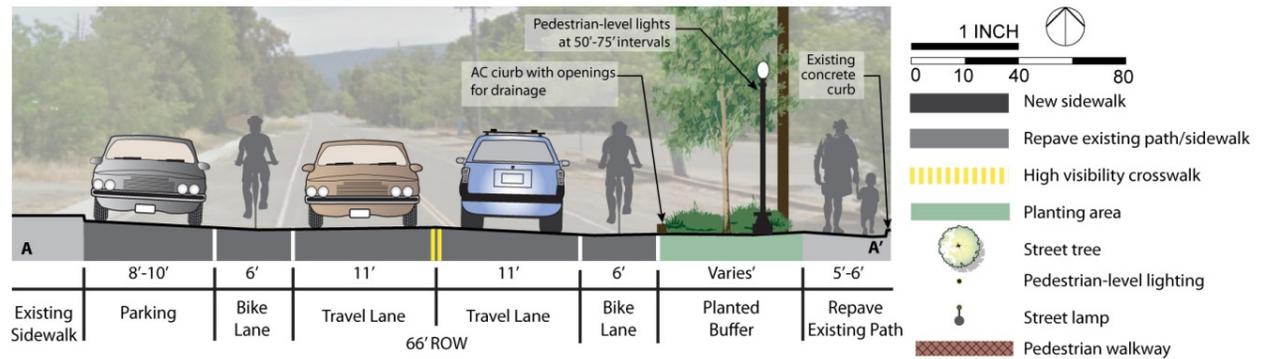
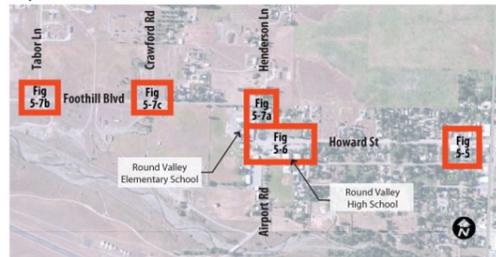


Figure 5-6: Howard Street at Airport Road

Figure 5-7a: Foothill at Airport Road

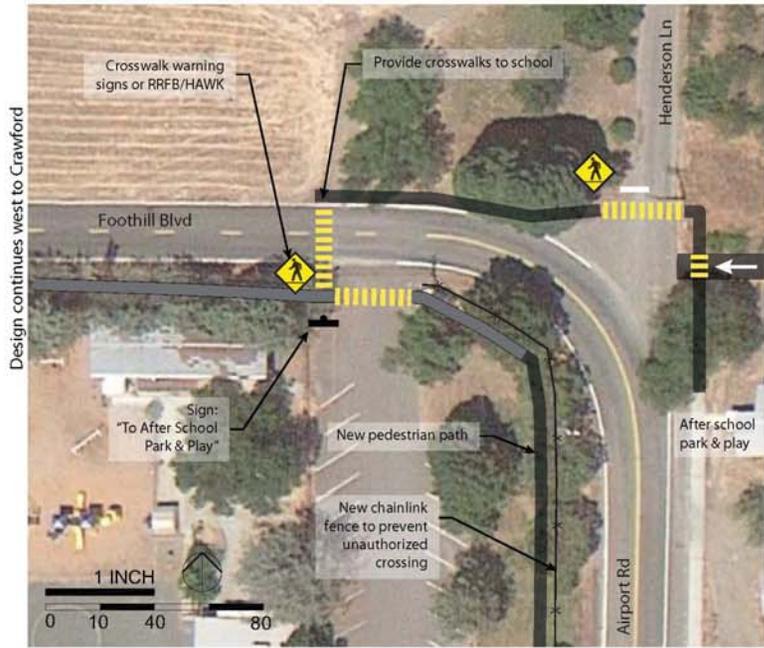


Figure 5-7b: Foothill at Tabor

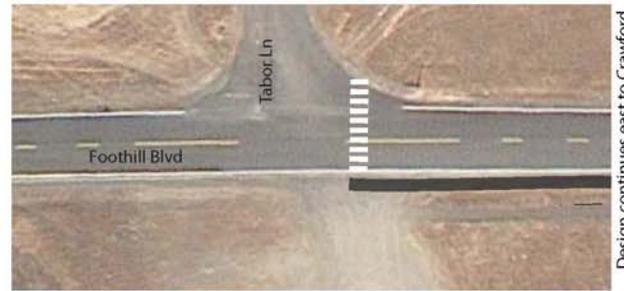
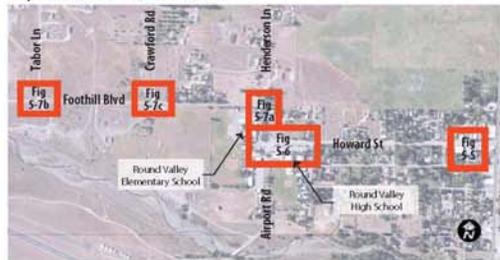


Figure 5-7c: Foothill at Crawford



-  New sidewalk
-  Repave existing sidewalk
-  High visibility crosswalk
-  Pedestrian-level lighting
-  Street lamp

Key to Howard Street Sheets



Foothill (Existing, typ.)

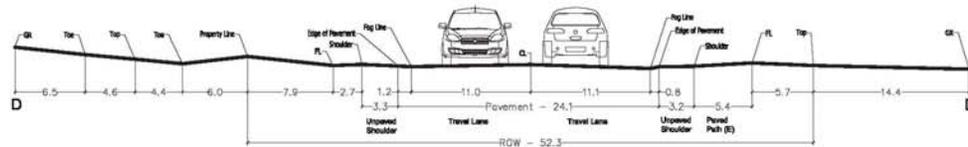


Figure 5-7: Foothill Boulevard

5.3 SR 162 North of Howard Street and Trail Connections to Henderson Lane

The portion of SR 162 from Howard Street to where SR 162 turns east at Hurt Road was identified as the highest priority segment in the study area during the public meetings held for this project and during the 2007 conceptual design project. Improvements in this area will create a safe route for bicyclists and pedestrians to travel between Covelo's downtown core and the Tribal Commerce Center, Tribal Grounds, Tribal Health Center, Tribal Administration Center and rural areas north of town, and will reduce the potential for conflicts between bicycles, pedestrians and vehicles.

The total cost of the entire trail along SR 162 (not including Howard/SR 162 intersection improvements, but including the East-West Trail) is estimated at \$2,841,000. A total of 45,813 square feet of right-of-way acquisition would be required at a cost of \$91,626 (included in total project cost) based on a "placeholder" \$2.00 per square foot. It would be possible to construct sub-segments of the trail independently if funding could not be secured for the entire trail all at once. The estimate in Appendix C has been broken down into a number of sub-segments to support this. Each sub-segment terminates at a crosswalk across SR 162. The trail is a bi-directional transportation facility that would allow bicyclists and pedestrians to safely travel in either direction while separated from motorized traffic. However, if any of the trail sub-segments were constructed independently, bicyclists and pedestrians would be forced to cross SR 162 in order to access the trail. Therefore, each trail sub-segment begins and ends at a cross walk. See Appendix C for cost estimates associated with the Trail.

5.3.1 Howard Intersection to East Lane

(see Figure 5-8)

The intersection of SR 162 and Howard Street has the highest ADT in Covelo and serves a central business and residential gateway for the regional community. The densest residential land use patterns in the valley occur within the area surrounding this intersection and the vast majority of businesses in the valley are located along one of these two roads. The next intersection north of Howard is East Lane, at which point the land use pattern changes and SR 162 becomes a rural highway. Therefore, the span from Howard Street to East Lane represents an important transition zone from the rural, Class I trail proposed north of East Lane and the more urban-style sidewalks and bike lanes proposed south of Howard Street.

The segment of SR 162 between Howard Street and East Lane will be formalized with Class II bike lanes, parallel parking, defined driveways, sidewalk, landscaping, curb extensions and high visibility crosswalks (see

Figure 5-8). A new crosswalk across SR 162 on the south side of the East Lane intersection will allow bicyclists and pedestrians to transition from the sidewalks and bike lanes in the south to the Class I trail to the north. The Class I trail will begin on the west side of SR 162 at the intersection with East Lane. This configuration is consistent with the improvements proposed throughout the downtown area and will provide bi-directional flow of non-motorized and pedestrian traffic on both sides of the state route, thereby providing access to the homes and businesses in that area.

Estimated total cost for these improvements: **\$181,000**

5.3.2 East West Trail

(see Figure 5-9)

As described above, the trail segment between East Lane and the Tribal Dance grounds would connect to a Class I trail extending west to Henderson Lane across Tribal land. This east-west trail is an important connection from the schools and Tribal Housing Area to the Tribal Commerce Center, Tribal Grounds and, via the trail paralleling SR 162, to the Tribal Health Center and Administrative offices to the north.

Estimated total cost for these improvements: **\$209,000**

5.3.3 East Lane to Cultural Performance Grounds

(See Figure 5-10)

North of East Lane a Class I Trail will be located on the west side of the highway and will extend from East Lane to the Tribe's Cultural Performance Grounds east of the Tribal Casino. The width of the trail will generally be 8 feet wide with 2-foot shoulders on either side (the minimum required for a Class I Trail). In some locations, where space allows, one of the shoulders is 6 feet wide in order to provide extra space for joggers and/or equestrians. Between East Lane and the southern property line of the Tribal lands to the north, the trail is offset from the edge of pavement at varying distances as necessary to avoid existing site features on private property and limited right-of-way. Continuing north along SR 162 on Tribal lands, the trail will be offset from the highway, on the west side of the drainage ditch, power poles and fence. Just before the trail reaches the Tribal Commerce Center a Class I trail will tie in from the west on Tribal lands, connecting to Henderson Lane (see section below). The trail will continue offset from SR 162 until it reaches the driveway just south of the Tribal Economic Center. At this point the trail will align with the front of the Economic Center (see Figure 5-10). North of the Economic Center the trail will continue along the front of the gravel parking area. In the segment between the Economic Center and the Casino, there is a potential to formalize two driveways and move one, thereby reducing congestion, minimizing the number of potential crossing conflicts, and shortening the crossing distance at the trail. It is also worth noting that the Tribe is in the process of constructing a gas station along this segment, the designs for which were modified in order to accommodate space for this conceptual trail design.

A high visibility crosswalk would be added across SR 162 to tie the Tribal grounds to the west side of the highway. If this segment of trail was constructed independently, this crosswalk at the driveway to the dance grounds would allow for bicyclists and pedestrians to safely transition from traveling along the side of SR 162 to a separated bi-directional traffic flow.

This segment of trail (from East Lane to the Tribal Performance Grounds) is primarily on Tribal property and it is assumed that the Tribe could be implementing agency for this segment of trail.

The plan and cost estimate assumes that approximately 6,900 square feet of right-of-way would need to be acquired.

Estimated total cost for these improvements: **\$550,000**

5.3.4 Cultural Performance Grounds to Biggar Lane

(see Figure 5-11)

North of the Tribal land occupied by that the Economic Center and Casino, private property exists on the west side of SR 162 extending to Biggar Lane. The private property owner has expressed opposition to the location of a trail on their property. As an alternative concept, the trail alignment offset from the edge of pavement could be reduced to the minimum and require limited right-of-way acquisition. This would require acquisition of a drainage easement to allow the existing roadside ditch and fence to be moved west to provide space for the 8 foot wide paved trail and 2 foot wide gravel shoulders (see Figure 5-11).

At the intersection of SR 162 and Biggar Lane a high visibility crosswalk will be provided on Biggar Lane for the Class I trail. Additionally a trail connection will be extended to SR 162 and a high visibility crosswalk installed to provide connectivity to the Tribal Health Center on the east side of SR 162. At the northwest corner of this intersection, a new curb will be installed to reduce the crossing distance across Biggar Lane and to reduce the turning radius from SR 162 to westbound Biggar Lane to slow traffic and create a safer pedestrian and bicycle crossing.

If this segment of trail was constructed independently, this crosswalk at Biggar Lane would allow for bicyclists and pedestrians to safely transition from traveling along the side of SR 162 to a separated bi-directional traffic flow.

The cost estimate assumed that approximately 14,685 square feet of right-of-way would need to be acquired in this segment.

Estimated total cost for these improvements: **\$776,000**

5.3.5 Biggar Lane to Hurt Road

(See Figure 5-12 and Figure 5-13)

North of Biggar Lane, the trail parallels SR 162 at the minimum offset until it reaches Mill Creek where the trail transitions onto a bridge structure to cross Mill Creek (see Figure 5-12). Mendocino County Department of Transportation is planning to remove and replace a steel bridge about one mile upstream from SR 162. It has been proposed to utilize this bridge for the current trail project as a pedestrian/bicycle bridge across Mill Creek. The public was very favorable to the concept of re-using this existing 120 foot by 18 foot steel structure. However, without further testing, it must be assumed that the existing structure contains hazardous materials (i.e. lead based paint). Therefore, the cost estimates for this project assume a 160 foot by 12 foot pre-manufactured steel bridge structure with concrete deck panels and Class I Trail compliant bridge railings

From Mill Creek the trail moves to an alignment offset from the existing edge of pavement on Tribal land. The trail would continue north across Tribal lands that include the Tribal Administration Center. This trail segment winds through this area between trees, power poles, fences and across a number of driveways (see Figure 5-13). A portion of the trail will occupy the east side of the Tribal Administration Center parking lot, which will displace available parking and may require re-striping of the existing parking layout. One driveway would be closed in the segment.

The trail continues north after it leaves Tribal lands. It would be located in the SR 162 right-of-way, offset from the edge of pavement to avoid conflict with existing utilities and drainage ditches. This alignment would

require right-of-way acquisition. The trail terminates at the intersection of SR 162 and Hurt Road. Here two high visibility crosswalks could be installed; one across Hurt Road to the north, and one extending east across Mina Road where SR 162 turns to the east.

The cost estimate assumes that approximately 24,228 square feet of right-of-way would need to be acquired

Estimated total cost for these improvements: **\$1,125,000**

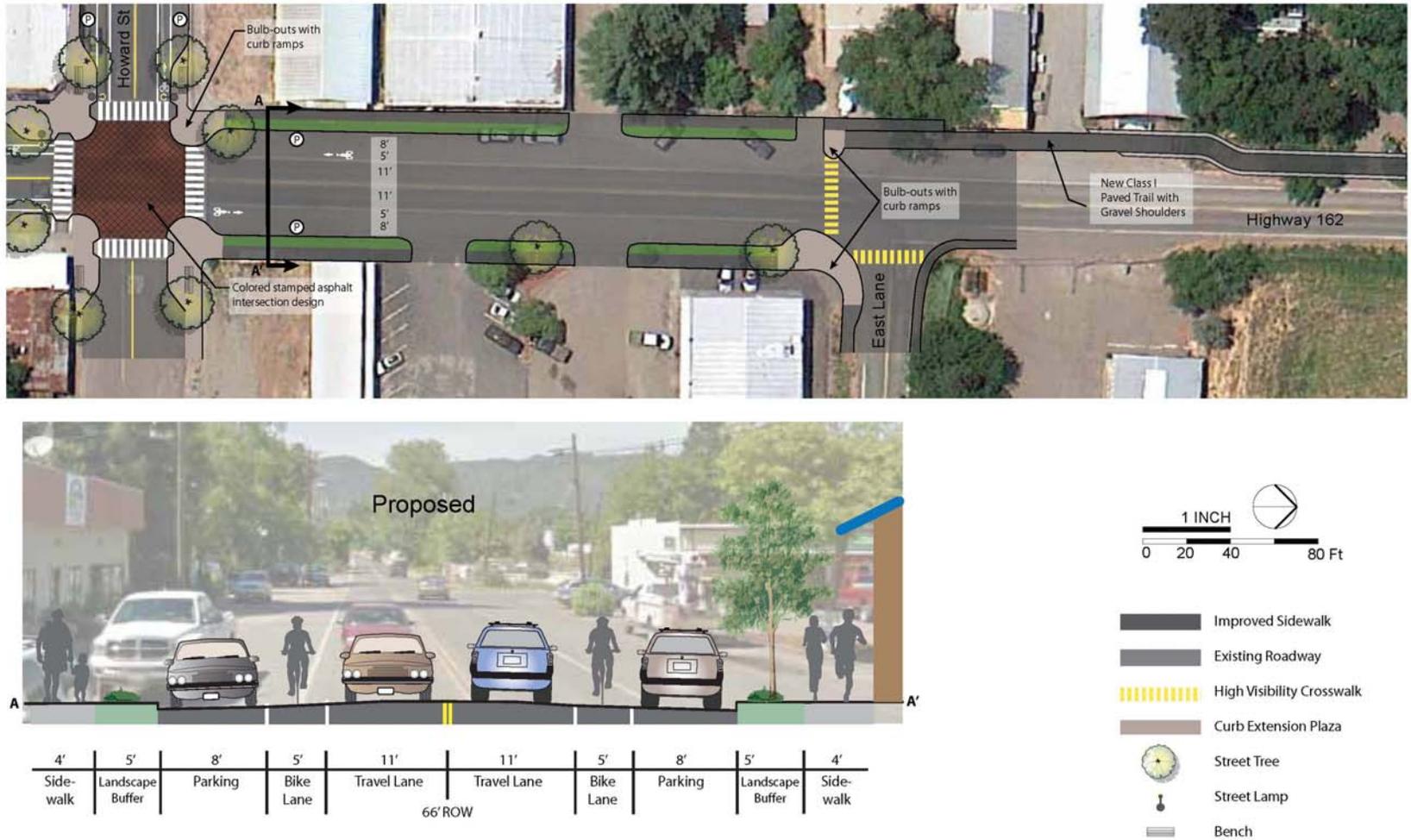


Figure 5-8: SR 162 – Howard Intersection to East Lane

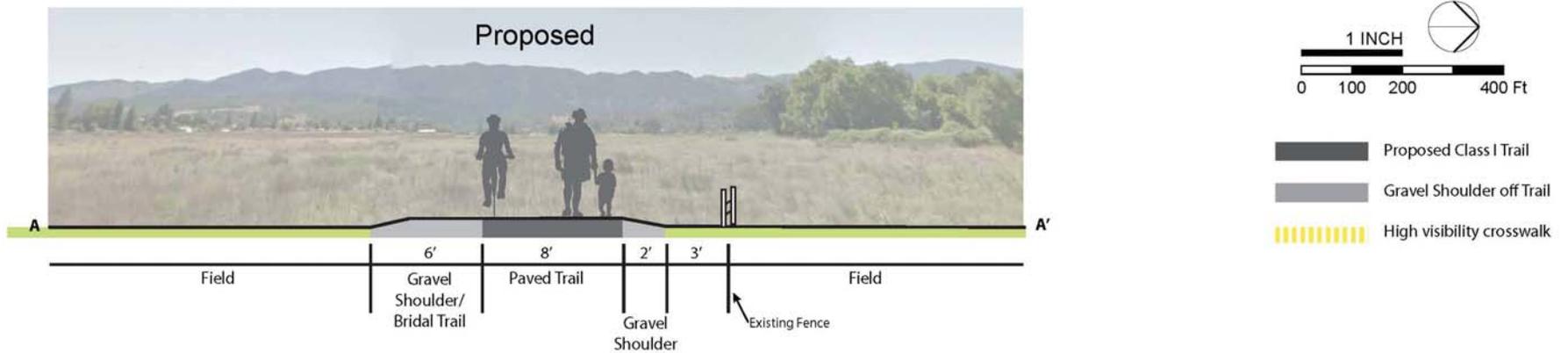
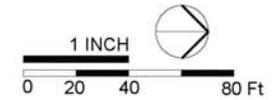
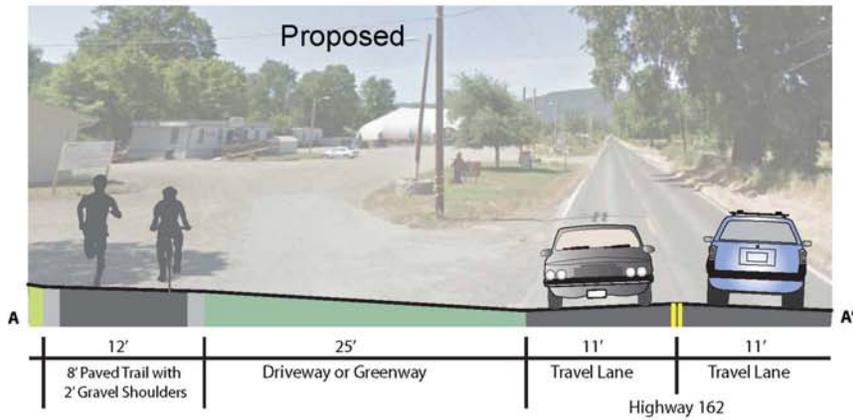
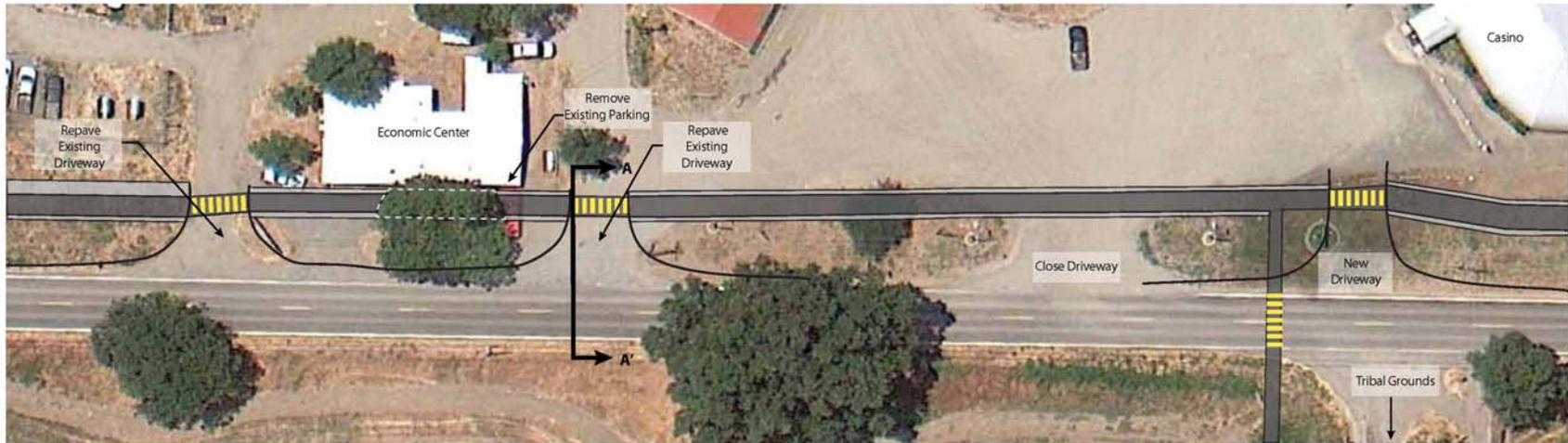


Figure 5-9: East-West Trail – SR 162 to Henderson

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- Proposed Class I Trail
- Gravel Shoulder off Trail
- Trail Under Tree Canopy
- High Visibility Crosswalk
- Proposed Edge of Driveway or Roadway

Figure 5-10: SR 162 – Trail at Tribal Economic Center

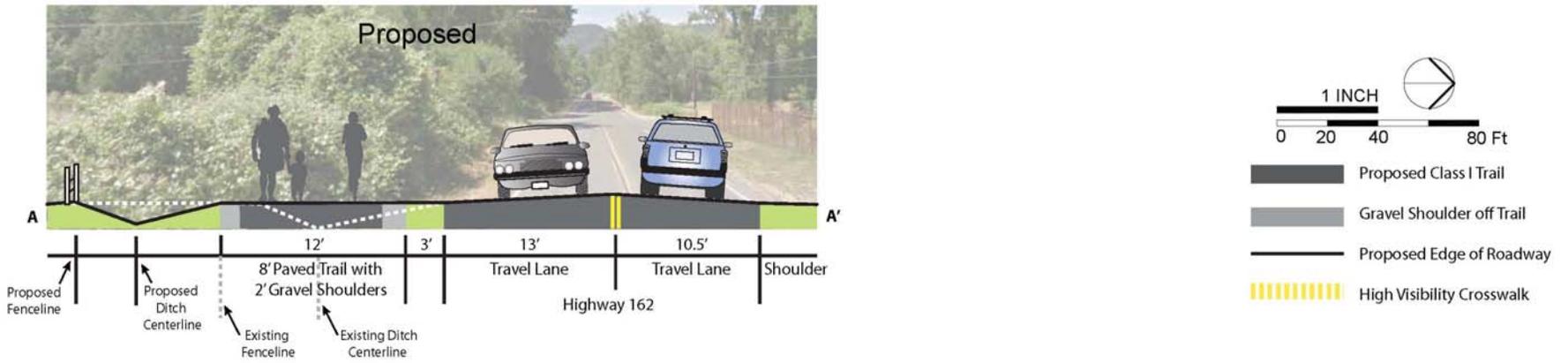


Figure 5-11: SR 162 – Trail at Biggar Lane

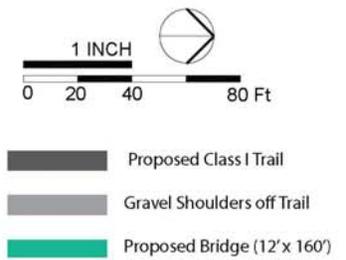
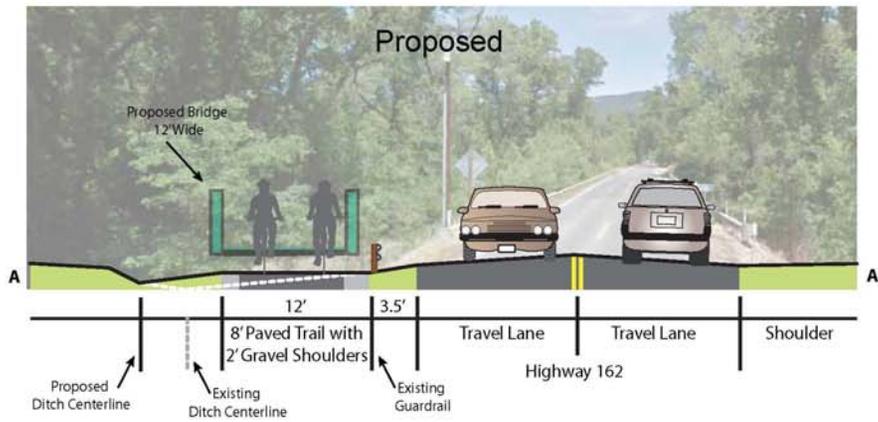
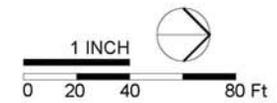


Figure 5-12: SR 162 – Trail Bridge



- Proposed Class I Trail
- Gravel Shoulder off Trail
- Trail under Tree Canopy
- Existing Mature Tree to Remain
- Existing Driveways to Remain

Figure 5-13: SR 162 – Trail at Tribal Offices

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6 Implementation Steps

6.1 Project Priorities

The current study follows up on a more conceptual project completed in 2010 that established preliminary priorities for trail improvements in Round Valley. The input from the TAG, stakeholder contacts and public workshops conducted for the current study reinforces the highest priorities:

- Improvements along SR 162 north to the Tribal Commerce Center, Health Center and Administrative Center
- Improvements connecting east-west from SR 162 to the schools, Tribal housing area, and residential areas of Covelo;
- Improvements along Howard Street from the schools east to SR 162, including Airport Road between Foothill Boulevard and Howard Street.

Beyond the above set of priority improvement areas, the community did not have a strong preference. The remaining potential improvement areas include SR 162 south of Howard, and Foothill Boulevard west of Airport. The consensus of the TAG and lead project agencies was that more detailed project priorities were not necessary, and could actually be a hindrance to implementation, given that the further implementation stages are likely to be driven by grant availability, which may entail criteria that do not line up neatly with project priorities. Also, project cost and feasibility of completing early implementation steps may drive the actual timing of projects.

6.2 Next Steps

This study included land surveying, specific assessment of biological and cultural resources and preliminary engineering design for the highest priority projects. These included the entire trail along SR 162, as well as the east-west trail on Tribal land from Henderson Lane to SR 162. Improvements along Howard Street west to Airport Road, along Airport Road and Foothill Boulevard as well as on SR 162 south of East Lane received a less detailed level of survey and design due to budget limitations. The next steps toward project implementation are outlined below. The steps may vary depending on the design elements, requirements and setting for the project.

6.2.1 Grant Funding

Trail and other access improvement projects, other than trails the Round Valley Indian Tribes may construct with their own resources, will probably depend on grant funding. MCOG is likely to lead these funding efforts, with support and input as outlined under *Implementation Roles and Arrangements* (Implementation Roles and Arrangements 6.3). Grants may potentially pay for any of the project elements or required steps outlined below; however, some grants have limitations on allowable expenses and/or require that some steps, such as environmental review or right-of-way acquisition, have been completed. **Chapter 7** provides a summary of current grant programs that may provide opportunities to fund the improvements.

6.2.2 Trails on Tribal Land

Trails on Tribal land can be implemented by the Tribe with their own funds based on the engineered plans provided with the report and coordination with the Tribes' plans for other improvements. As a sovereign

nation, the Tribes are not subject to outside environmental review and some of the other steps that would be necessary for a public project.

A further implementation step would be a legal mechanism to be used by the Tribes to formalize public access on the trail(s) on their land. This could consist of a trail easement to Mendocino County based on the easement model contained in **Appendix B**, or one of the other mechanisms described in the Appendix. MCOG could be a partner in facilitating such an agreement. Note that such a formal recorded agreement is not necessary for the Tribes to establish the trails and allow the public to use them, but it is desirable as a way to formalize them as a part of a community trail system.

6.2.3 Trails and Improvements in SR 162 Right-of-Way

Trails in the state right-of-way along SR 162 would require that the project be undertaken by Caltrans or another public agency, and would require more detailed engineering design to resolve specific trail location and configuration, including solutions for storm drainage, the design of the Mill Creek Bridge and resolving the relationship to the future highway shoulder widening project. This could become a Caltrans project based on grant funding and prioritization among overall highway improvement priorities, or, more likely, would be taken on by the county under an encroachment permit from Caltrans.

Further research of property records to more clearly establish the right-of-way location along SR 162, as described in the right-of-way research summary in **Section 3.1** may be necessary to prepare formal plans.

More specific environmental studies, especially at Mill Creek, will be necessary to support the preparation of a formal environmental document for the project, to meet requirements of the California Environmental Quality Act (CEQA), and if federal funding is involved, the National Environmental Policy Act (NEPA).

6.2.4 Trails Along SR 162 on Private Property

The design concepts include options for establishing the trail in the available state right-of-way beyond Tribal land areas, but these will be very constrained and may not be feasible in some locations. Gaining access to private frontages may be necessary to provide a continuous trail facility, and certainly will be required for the trail to meet the desired design standard the entire distance. The next steps include continuing contact with private property owners to determine their willingness to discuss acquisition of an easement, and the terms and physical arrangements. **Appendix B** describes the various forms of legal access and addresses the issues that often are raised in conjunction with proposed trails. This may be useful material for ongoing discussions with property owners. Completion of the boundary research to more clearly establish the right-of-way/property line location, as outlined above, may be necessary for these property owner discussions/negotiations.

An agency or organization would need to take responsibility for contacting property owners, and in the case of willing participants, negotiating with them. This contact and negotiation effort could potentially be funded as part of a grant, or it could be taken on by a local organization or County agency as a separate effort from design. Access rights could be pursued in conjunction with a design project, but ideally would be resolved and secured before undertaking more detailed design. An easement to the County is the most likely form of access, but there are other mechanisms and potential holders of the rights.

6.2.5 Trails and Improvements on County Roads

Improvements on Howard Street or other county roads would require a similar process to trails in the state right-of-way as outlined above, except that the county Department of Transportation is highly likely to be the

project sponsor. These areas have not been subject to as much detailed land survey as the other areas in the current study, so compilation of detailed base information will be an important first step.

Projects in the county right-of-way are likely to have much simpler environmental review requirements than trails on the edge of the SR 162 right-of-way or on private land because the county projects all involve areas that have already been developed as streets and walkways, and generally do not involve areas of undisturbed natural or agricultural land.

6.2.6 Maintenance and Management Agreements

Arrangement for maintenance of the trail and other access improvements is an important implementation step. This may also involve determining responsibility for trail use management for trails on Tribal or private land, or improvements that aren't considered part of the Caltrans or county transportation system. Arrangements may include liability agreements or insurance. Appendix B provides general guidance on maintenance and management issues, requirements, and solutions.

The improvements envisioned for Howard Street and other county roads are generally upgrades of existing facilities and maintenance would presumably remain the responsibility of the county. Landscaping and lighting are possible exceptions that are discussed below.

The Tribes would presumably take responsibility for maintenance of the trails on Tribal land. Caltrans will not necessarily take responsibility for maintenance of a separate path in the state right-of-way. A maintenance agreement is typically part of the encroachment permit process for construction of paths in the state right-of-way, and Caltrans typically looks for another agency to take responsibility for maintenance. The county is the most likely party, though ongoing funding for maintenance may be a challenge. There are precedents for non-profit organizations taking on responsibility for maintenance. The entity involved would have to demonstrate that it had the financial and organizational capacity to ensure that ongoing maintenance would occur.

Local assessment districts exist in Covelo that pay for the upkeep of and electricity for street lighting, through the county. The significant additional pedestrian-level lighting envisioned along Howard Street may require the modification of a lighting district or districts, or the establishment of a new district.

Landscape maintenance, including water and power for irrigation could potentially be added as a modification of an existing assessment district, or through creation of a new district. Additionally, the responsibility for landscape maintenance could be assumed by the adjacent property owner, as is currently the case. The school district could be responsible for landscaping abutting its property, assuming the district has the resources. Commercial property owners could be directly responsible for these maintenance costs for improvements at their frontages, such as at the Howard Street/SR 162 intersection, but this would be voluntary unless it was made a county condition for approval of a significant commercial project, such as the remodel at Keith's Market. Any landscaping on residential frontages is assumed to be voluntary, with the homeowner agreeing to maintain the tree/plantings. Landscaping may be an area where community fund-raising and volunteer labor could make a big difference in whether the improvements are implemented and are successful.

6.2.7 Interim/Minor Projects

There are potential interim or phased improvements that could be implemented as maintenance or minor improvements by Caltrans, the county, and/or the community with appropriate coordination and permission. These may not require the level of formal design and environmental documentation outlined above, or the level of funding that would necessitate a major grant. Such projects could include striping of bike lanes, walkways, crosswalks, or "no parking" zones; signage and warning lights; and creation of planters and tree planting.

6.3 Implementation Roles and Arrangements

The implementation of trail improvements for Round Valley will require partnership at the local, county, and state levels. This study constitutes a “master plan” for improvement projects that provides enough detail for project-specific grant applications. This in itself will facilitate moving the improvements forward. Specific roles of the prospective partners are outlined below:

6.3.1 MCOG

The Mendocino Council of Governments, as the county’s land use and transportation planning and coordinating agency, will continue to play a leading role. MCOG staff will continue to support Round Valley/Covelo as a high priority among county-wide projects, coordinate with other agencies and local groups, and most importantly seek grant opportunities and prepare grant applications where Round Valley/Covelo projects are likely to be competitive against grant criteria.

6.3.2 Local Residents/Advocates

Local advocates can advance project implementation by communicating with or even personally appearing before the MCOG Board, the county Board of Supervisors, and their elected representatives to emphasize the need and opportunity for these trail improvements. A formal or informal community organization could be formed for ongoing advocacy and support of these improvements, and/or they could be “adopted” by existing local organizations. Even small local events and meetings to maintain interest and involvement, and fund raising or “hands-on” local improvement or maintenance efforts can provide significant leverage in obtaining more substantial funding.

6.3.3 Round Valley Tribes

The Round Valley Indian Tribes will play an important role through their willingness to allow and construct a public trail on Tribal land, and to coordinate other Tribal projects with the trail project detailed in the plans associated with this study. The Tribes thus play a key role in “jump starting” the project and acting as leaders in the effort to see other priority segments completed. Tribal accomplishments in trail implementation could encourage private property owners to cooperate in allowing trails.

6.3.4 Mendocino County

The Mendocino County Department of Transportation can provide technical assistance regarding implementation details on county roads, and can partner on or sponsor grant applications or projects budgeted through the regular county process. Other county departments, such as Health and Human Services or Planning and Building can also provide technical and policy support – such as reflecting the trail improvement goals in other county plans. The county Department of Transportation could also coordinate other maintenance, repair, or improvement project work to benefit trail improvements.

6.3.5 Caltrans

California Department of Transportation District 1 staff can provide technical assistance regarding implementation details on the state highway. Based on input on the overall highway budgeting and prioritization process, Caltrans staff can help with project funding and potentially coordinate other maintenance, repair, or improvement project work to benefit trail improvements. Caltrans can also partner with MCOG and the county on grant applications and project implementation.

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7 Funding Sources

This chapter provides information on potential funding sources for bicycle, pedestrian and trail improvements. Federal, state and local government agencies invest billions of dollars every year in the nation's transportation system. Only a fraction of that funding is used in development projects, policy development and planning to improve conditions for pedestrians and bicyclists. Even though appropriate funds are limited, they are available. To support agency efforts to find outside funding sources to implement improvements along the proposed trail corridors, a summary by source type is provided below.

7.1 Federal Sources

7.1.1 Moving Ahead for Progress in the Twenty-First Century (MAP-21)

The largest source of federal funding for bicycle and pedestrian projects is the US DOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012. SAFETEA-LU contained dedicated programs including Transportation Enhancements, Safe Routes to School, and Recreational Trails, all commonly tapped sources of funding to make non-motorized improvements nationwide. MAP-21 combines these programs into a single source called the 'Transportation Alternatives Program (TAP).

More information: <http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27 month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs or to predict their future funding levels or policy guidance. Nevertheless, many bicycle and pedestrian transportation improvements programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and thus may continue to provide capital for active transportation projects and programs.

In California, federal monies are administered through the California Department of Transportation (Caltrans). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

There are a number of programs identified within MAP-21 that are applicable to bicycle and pedestrian projects. These programs are discussed on the following pages.

More information: <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>

Transportation Alternatives

Transportation Alternatives Program (TAP) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SR2S and SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails.

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TAP funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TAP does not provide a guaranteed set-aside for this activity as SAFETEA-LU did. MAP-21 provides \$85 million nationally for the RTP.

Eligible activities under the TAP Program include:

1. **Transportation Alternatives** as defined by Section 1103 (a)(29). This category includes the construction, planning, and design of a range of bicycle and pedestrian infrastructure including “on-road and off-road trail facilities for pedestrians, bicyclists, and other active forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990.” Infrastructure projects and systems that provide “Safe Routes for Non-Drivers” is a new eligible activity.

More information: http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm

2. **Recreational Trails Program (RTP)**. TAP funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

RTP funds may be used for:

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

Under MAP-21, dedicated funding for the RTP continues at FY 2009 levels – roughly \$85 million annually. California will receive \$5,756,189 in RTP funds per federal fiscal year through FY2014.

More information:

http://www.fhwa.dot.gov/environment/recreational_trails/funding/apportionments_obligations/recfunds_2009.cfm

3. **Safe Routes to School**. There are two separate Safe Routes to School programs administered by Caltrans. There is the federal program referred to as SRTS, and the state-legislated program referred to as SR2S. Both programs are intended to achieve the same basic goal of increasing the number of children walking and bicycling to school by making it safer for them to do so. All projects must be within two miles of primary or middle schools (K-8). The Safe Routes to School Program funds non-motorized facilities in conjunction with improving access to schools through the Caltrans Safe Routes to School Coordinator. Eligible projects may include:

- **Engineering improvements**. These physical improvements are designed to reduce potential bicycle and pedestrian conflicts with motor vehicles. Physical improvements may also reduce

motor vehicle traffic volumes around schools, establish safer and more accessible crossings, or construct walkways, trails or bikeways. Eligible improvements include sidewalk improvements, traffic calming/speed reduction, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, and secure bicycle parking facilities.

- **Education and Encouragement Efforts.** These programs are designed to teach children safe bicycling and walking skills while educating them about the health benefits, and environmental impacts. Projects and programs may include creation, distribution and implementation of educational materials; safety based field trips; interactive bicycle/pedestrian safety video games; and promotional events and activities (e.g., assemblies, bicycle rodeos, walking school buses).
- **Enforcement Efforts.** These programs aim to ensure that traffic laws near schools are obeyed. Law enforcement activities apply to cyclists, pedestrians and motor vehicles alike. Projects may include development of a crossing guard program, enforcement equipment, photo enforcement, and pedestrian sting operations.

More information: <http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm>

4. **Planning, designing, or constructing roadways within the right-of-way of former Interstate routes or divided highways.** At the time of writing, detailed guidance from the Federal Highway Administration on this new eligible activity was not available.

Average annual funds available through TAP over the life of MAP-21 equal \$814 million nationally, which is based on a 2% set-aside of total MAP-21 authorizations. Projected MAP-21 apportionments for California total \$3,546,492,430 for FY 2013 and \$3,576,886,247 for FY 2014 (<http://www.fhwa.dot.gov/MAP21/funding.cfm>). The 2% set-aside for TAP funds in California will be about \$71,000,000 for the next two fiscal cycles. State DOTs may elect to transfer up to 50% of TAP funds to other highway programs, so the amount listed above represents the maximum potential funding.

TAP funds are typically allocated through MPOs and require a 20% local match.

Surface Transportation Program

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50% of each state's STP funds are sub-allocated geographically by population. These funds are funneled through Caltrans to the MPOs in the state. The remaining 50% may be spent in any area of the state.

More information: http://www.dot.ca.gov/hq/transprog/federal/rstp/Official_RSTP_Web_Page.htm

Highway Safety Improvement Program (HSIP)

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural Roads Program unless safety statistics demonstrate that fatalities are increasing on these roads. HSIP is a data-driven funding program, and eligible projects must be identified through analysis of crash experience, crash potential, crash rate, or other similar metrics. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan.

More information: http://www.dot.ca.gov/hq/traffops/survey/SHSP/SHSP_Final_Draft_Print_Version.pdf

Pilot Transit-Oriented Development Planning

MAP-21 establishes a new pilot program to promote planning for Transit-Oriented Development. At the time of writing, the details of this program are not fully clear; although, the bill text states that the Secretary of Transportation may make grants available for the planning of projects that seek to “facilitate multimodal connectivity and accessibility,” and “increase access to transit hubs for pedestrian and bicycle traffic.”

7.1.2 Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, provide more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure - “Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.”

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including the TIGER grants). MCOG and Caltrans should track Partnership communications and be prepared to respond proactively to announcements of new grant programs.

More information: <http://www.epa.gov/smartgrowth/partnership/>

7.1.3 Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails and Conservation Assistance Program (RTCA) is the community assistance arm of the National Park Service. RTCA provides technical assistance to communities in order to preserve open space and develop trails. The assistance that RTCA provides is not for infrastructure, but rather building plans, engaging public participation, and identifying other sources of funding for conversation and outdoor recreation projects.

More information: <http://www.nps.gov/pwro/rtca/who-we-are.htm>

7.1.4 Community Development Block Grants

The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may “use Community Development Block Grant funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grant funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.”

Trails and greenway projects that enhance accessibility are the best fit for this funding source. CDBG funds could also be used to write ADA Transition Plans.

More information: www.hud.gov/cdbg

7.1.5 Community Transformation Grants

Community Transformation Grants administered through the Center for Disease Control support community-level efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. Active transportation infrastructure and programs that promote healthy lifestyles are a good fit for this program, particularly if such improvements benefit groups experiencing the greatest burden of chronic disease.

More information: <http://www.cdc.gov/communitytransformation/>

7.1.6 National Scenic Byways Program

The Federal Highway Administration (FHWA), part of the USDOT manages the National Scenic Byways Grant Program, which recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities by providing grants that support projects that manage and protect these roads and improve visitor facilities.

More information: <http://www.fhwa.dot.gov/discretionary/2012nsbp.cfm>

7.1.7 Federal Recovery Act State Fiscal Stabilization Funding

As part of the Federal Recovery Act of 2009, states will be receiving \$53.6 billion in state fiscal stabilization funding. States must use 18.2% of their funding – or \$9.7 billion – for public safety and government services. An eligible activity under this section is to provide funding to K-12 schools and institutions of higher education to make repairs, modernize, and make renovations to meet green building standards. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System, developed by the U.S. Green Building Council (USGBC), addresses green standards for schools that include bicycle and pedestrian facilities and access to schools.

Another \$5 billion is provided for the Energy Efficiency and Conservation Block Grant Program. This provides formula funding to cities, counties and states to undertake a range of energy efficiency activities. One eligible use of funding is for bicycle and pedestrian infrastructure.

More information: <http://www2.ed.gov/policy/gen/leg/recovery/factsheet/stabilization-fund.html>

<http://www1.eere.energy.gov/wip/eccbg.html>

7.2 State Sources

7.2.1 Active Transportation Program

With the consolidation of federal funding sources in MAP-21, the California State Legislature has moved to consolidate a number of state-funded programs centered on alternative transportation into a single program. The resulting Active Transportation Program (ATP) will consolidate the federal programs, Bicycle Transportation Account, the Safe Routes to Schools Program, and the Recreational Trails Program. The ATP's authorizing legislation (signed into law by the Governor on September 26, 2013) also includes placeholder language to allow the ATP to receive funding from the newly established Cap-and-Trade Program in the future. For the 2013/2014 fiscal cycle, approximately \$130 million is anticipated for this program, of which \$24 million will be earmarked specifically for Safe Routes to School projects. The call for projects is expected in spring 2014.

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

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

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

7.2.2 State Highway Operations & Protection Program

The State Highway Operations and Protection Program (SHOPP) is a four year program that funds projects on the State Highway system to maintain and preserve the asset. The program is primarily funded by federal highway trust funds. The federal funds that make up the SHOPP are National Highway Performance Program (NHPP), the Surface Transportation Program (STP), and the Highway Safety Improvement Program (HSIP). The new Federal act, Moving Ahead for Progress in the 21st Century (MAP-21), requires that the States implement targets based on performance measures that will be forthcoming. This will dictate how funds need to be programmed based on meeting the targets. The emphasis of the federal bill is to maintain and/or improve the current asset condition and to address the safety needs. The cycle includes identification of rehabilitation and reconstruction needs in the ten year plan, the estimation of available funding in the Fund Estimate, and finally a four-year financially constrained portfolio of projects in the four-year SHOPP. As required by statutes, the SHOPP is a four-year portfolio of projects, updated every two years.

The SHOPP project funding process is internal to Caltrans. SHOPP projects are originally scoped through the ten year SHOPP plan process. The ten year SHOPP plan has a fiscally constrained list of program areas that have specific estimated amounts of funding. The determination of the balance of funds for each of the areas is based on federal funding programs, priorities as agreed between the Caltrans and the CTC, and direction from the Caltrans SHOPP Executive Committee. The priorities are:

1. Collision reduction, major damage restoration, and mandates such as ADA and stormwater
2. Pavement, bridge, roadside, and facility preservation
3. Mobility

There is clearly not enough funding to fund the SHOPP needs and thus each category has constrained funding. More information:

<http://www.dot.ca.gov/hq/transprog/SHOPP/2014%20SHOPP/SHCC%20SHOPP%20issue%20paperpdf.pdf>

7.2.3 Caltrans Planning Grants

Caltrans also administers the Transportation Planning Grant Program that funds projects to improve mobility. In the past year, Caltrans awarded \$10 million in grant funding to 70 applicants, in two sub-categories: Environmental Justice grants and Community Based Transportation Plan grants.

More information: <http://www.dot.ca.gov/hq/tpp/grants.html>

Environmental Justice (EJ) Grant Program

This program promotes the involvement of low-income, minority communities, and Native American tribal governments in the planning for transportation projects. EJ grants have a clear focus on transportation and community development issues to prevent or mitigate disproportionate, negative impacts while improving mobility, access, safety, and opportunities for affordable housing and economic development. Grants are available to cities, counties, transit districts, and tribal governments.

More information: http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_ej.html

Community Based Transportation Planning Grant Program

The Community Based Transportation Planning (CBTP) grant program promotes transportation and land use planning projects that encourage community involvement and partnership. These grants include community and key stakeholder input, collaboration, and consensus building through an active public engagement process. CBTP grants support livable and sustainable community concepts with a transportation or mobility objective to promote community identity and quality of life.

More information: http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_cbtp.html

7.2.4 Petroleum Violation Escrow Account (PVEA)

In the late 1970s, a series of federal court decisions against selected United States oil companies ordered refunds to the states for price overcharges on crude oil and refined petroleum products during a period of price control regulations. To qualify for PVEA funding, a project must save or reduce energy and provide a direct public benefit within a reasonable time frame. In the past, the PVEA has been used to fund programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees. In California, Caltrans Division of Local Assistance administers funds for transportation-related PVEA projects. PVEA funds do not require a match and can be used as match for additional federal funds.

More information: www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf

7.2.5 Office of Traffic Safety Grants

The Office of Traffic Safety (OTS) distributes grants statewide to establish new traffic safety programs or fund ongoing safety programs. OTS grants are supported by federal funding under the National Highway Safety Act and SAFETEA-LU.

Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Bicycle safety is included in the list of traffic safety priority areas. Eligible grantees are governmental agencies, state colleges, state universities, local city and county government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants.

The California application deadline is January of each year. There is no maximum cap to the amount requested; however, all items in the proposal must be justified to meet the objectives of the proposal.

More information: <http://www.ots.ca.gov/Grants/Apply/default.asp>

7.2.6 Environmental Enhancement and Mitigation Funds

The Environmental Enhancement Mitigation Program (EEMP) provides grant opportunities for projects that indirectly mitigate environmental impacts of new transportation facilities. Projects should fall into one of the following three categories: highway landscaping and urban forestry, resource lands projects, or roadside recreation facilities. Funds are available for land acquisition and construction. The local Caltrans district must support the project. The average award amount is \$250,000.

More information: <http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm>

7.2.7 Land and Water Conservation Fund

The Land and Water Conservation Fund is a federal program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The Fund is administered by the California State Parks Department. Cities, counties, and districts authorized to acquire and develop park and recreation space are eligible for grant funding. While non-profits are ineligible, they are allowed to apply in partnerships with eligible agencies. Applicants must fund the project entirely and will be reimbursed for half of the cost. Up to \$2 million was available in California in the 2012 round of grant funding.

More Information: http://www.parks.ca.gov/?Page_id=21360

7.2.8 California Strategic Growth Council

The Strategic Growth Council is a state agency that manages the Sustainable Communities Planning Grant and Incentives Program. The program provides grants for development and implementation of plans that lead to significant reductions in greenhouse gas emissions, improve air and water quality, promote public health, promote equity, increase housing affordability, increase infill and compact development, revitalize urban and community centers, protect natural resources and agricultural lands, reduce automobile usage and fuel consumption, improve infrastructure systems, promote water conservation, promote energy efficiency and conservation, and strengthen the economy.

The program is currently conducting workshops to update program guidelines. The anticipated application date is early 2014.

More information: http://sgc.ca.gov/planning_grants.html

7.2.9 Climate Ready Grant Program - California State Coastal Conservancy

Climate Ready grants are intended to encourage local governments and non-governmental organizations to advance planning and implementation of on-the-ground actions that reduce greenhouse gas emissions and lessen the impacts of climate change on California's coastal communities. The grant program makes eligible "development of multi-use trails with clearly identified greenhouse gas (GHG) reduction goals; (and) protecting and managing open space lands with clearly identified GHG reduction goals." A total of \$1,500,000 is available on a competitive basis, with a minimum award of \$50,000 and a maximum of \$200,000. The size of awarded grants will be based on each project's needs, its overall benefits, and the extent of competing demands for funds. Applications were due August 28, 2013. It is not clear whether additional application solicitations will be made.

More information: http://scc.ca.gov/files/2013/07/Climate-Ready-grant-announcement-July-18_FINAL.pdf

7.3 Regional & Local Sources

7.3.1 Developer Impact Fees

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include bikeway projects. These projects have commonly provided Class II facilities for portions of on-street, previously-planned routes. They can also be used to provide bicycle parking or shower and locker facilities. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

7.3.2 Roadway Construction, Repair and Upgrade

Future road widening and construction projects are one means of providing improved pedestrian and bicycle facilities. To ensure that roadway construction projects provide these facilities where needed, it is important that the review process includes input pertaining to consistency with the proposed system. In addition, California's 2008 Complete Streets Act and Caltrans's Deputy Directive 64 require that the needs of all roadway users be considered during "all phases of state highway projects, from planning to construction to maintenance and repair."

More information: http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

7.3.3 Cable Installation Projects

Cable TV and telephone companies sometimes need new cable routes within public right of way. Recently, this has most commonly occurred during expansion of fiber optic networks. Since these projects require a significant amount of advance planning and disruption of curb lanes, it may be possible to request reimbursement for affected bicycle facilities to mitigate construction impacts. In cases where cable routes

cross undeveloped areas, it may be possible to provide for new bikeway facilities following completion of the cable trenching, such as sharing the use of maintenance roads.

7.4 Private Sources

Private funding sources can be acquired by applying through the advocacy groups such as the League of American Bicyclists and the Bikes Belong Coalition. Most of the private funding comes from foundations seeking to enhance and improve bicycle facilities and advocacy. Grant applications will typically be through the advocacy groups as they leverage funding from federal, state and private sources. Following are several examples of private funding opportunities available.

7.4.1 Bikes Belong Grant Program

The Bikes Belong Coalition of bicycle suppliers and retailers has awarded \$1.2 million and leveraged an additional \$470 million since its inception in 1999. The program funds corridor improvements, mountain bike trails, BMX parks, trails, and park access. It is funded by the Bikes Belong Employee Pro Purchase Program.

More information: <http://www.bikesbelong.org/grants/>

7.4.2 Bank of America Charitable Foundation, Inc.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grant program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Program, and specifically the Program Related Investments subcategory. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

More information: <http://www.bankofamerica.com/foundation>

7.4.3 The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972, and today, it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

More information: <http://www.rwjf.org/applications/>

7.4.4 The Wal-Mart Foundation

The Wal-Mart Foundation offers a Local, State, and National Giving Program. The Local Giving Program awards grants of \$250 to \$5,000 through local Wal-Mart and Sam's Club Stores. Application opportunities are announced annually in February with a final deadline for applications in December. The State Giving

Program provides grants of \$25,000 to \$250,000 to 501c3 nonprofits working within one of five focus areas: Hunger Relief & Nutrition, Education, Environmental Sustainability, Women's Economic Empowerment, or Workforce Development. The program has two application cycles per year: January through March and June through August. The Wal-Mart Foundation's National Giving Program awards grants of \$250,000 and more, but does not accept unsolicited applications.

More information: <http://foundation.walmart.com/apply-for-grants>

7.4.5 The Kodak American Greenways Program

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying or political activities.

More information: <http://www.conservationfund.org>

7.4.6 Community Action for a Renewed Environment (CARE)

CARE is a competitive grant program that offers an innovative way for a community to organize and take action to re-duce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. By providing financial and technical assistance, EPA helps CARE communities get on the path to a renewed environment. Transportation and "smart-growth" types of projects are eligible. Grants range between \$90,000 and \$275,000.

More information: <http://www.epa.gov/care/>

7.4.7 Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Employers recognize that creating places to bike and walk is one way to build community and attract a quality work force. Bicycling and outdoor recreation businesses often support local projects and programs. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

7.5 Other Sources

Local sales taxes, fees and permits may be implemented as new funding sources for pedestrian and bicycle projects. However, any of these potential sources would require a local election. Volunteer programs may be developed to substantially reduce the cost of implementing some routes, particularly multi use paths. For example, a local college design class may use such a multi-use route as a student project, working with a local landscape architectural or engineering firm. Work parties could be formed to help clear the right of way for the route. A local construction company may donate or discount services beyond what the volunteers can do. A challenge grant program with local businesses may be a good source of local funding, in which the businesses can “adopt” a route or segment of one to help construct and maintain it.

Appendix A: Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

January 8, 2014



Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

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Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

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1 Community-Based Planning



A Flyer promoting the workshop was mailed to every address and post office box in Round valley.

This Non-Motorized Needs Assessment and Engineered Feasibility Study is based on input from community members, Tribal and local government representatives, and funding sources. It builds on a participatory public planning process that resulted in the *Round Valley Walk/Bike Path and Community Revitalization Strategy (2010)*. The 2010 plan identified a broad spectrum of conceptual designs to improve safety and mobility in downtown Covelo, as well as trail segments throughout the valley. This Study focuses on the top priorities from the 2010 plan, provides field studies and survey data, and preliminary engineering of trails and non-

motorized roadway improvements such as sidewalks, high-visibility crossings, traffic calming, and pedestrian-scale lighting. Preparation of a Project Study Report (PSR), a formal report required for projects in the Caltrans right-of-way, will be a next step for projects in the state right-of-way. For all projects, construction documents and securing construction funding are next steps in implementing the designs in this document.

Additionally, this Study takes into consideration the 2012 Caltrans' Project Study Report for State Route 162, which recommends the addition of five foot shoulders on both sides of the highway, which could be designated as Class II bike lanes from East Lane to Biggar Road. These improvements may be constructed by Caltrans in future years and would complement the recommendations in this study.

2 Community and Stakeholder Engagement

To foster a community-based planning effort, many outreach activities were offered including the formation of a Technical Advisory Group to guide the project, meetings with Round Valley Indian Tribal Council and staff, youth engagement, and two community workshops. This chapter describes the variety of project outreach activities and summarizes stakeholder and community input received at the community workshops.

Technical Advisory Group

A Technical Advisory Group (TAG) was convened in October 2012 to kick off the project. The purpose of the TAG was to provide technical information relevant to the project, to coordinate with local agencies, and to act as the “eyes and ears” of the community to guide the project. Group members included Round

Valley residents, representatives from the Round Valley Indian Tribes, Mendocino County Departments of Public Health and Transportation, Mendocino Council of Governments, Caltrans, and the consultant team.

During the October 2012 meeting, the TAG reviewed trail segment priorities identified in the *Walk/Bike Path and Community Revitalization Strategy*, and revised the priorities based on recently completed planning documents and construction projects. The segment priorities provided guidance for field studies and surveying conducted during the winter of 2012-13. The TAG met again in February 2013 to prepare for the first community workshop, and also provided support during the workshop. In July 2013, the TAG met to review a draft of this document and select preferred treatments.



The Technical Advisory Group met periodically throughout the planning process to offer data, coordination, and support

In July, the TAG met to review a progress draft of the *Non-Motorized Needs Assessment and Engineered Feasibility Study* focused on existing conditions and improvement options. Significant input and preferences were gathered through this process, including a desire to re-use the County's green bridge as a new pedestrian/bicycle bridge over Mill Creek. Local TAG members voiced strong support for the SR 162/Howard Street intersection improvements. Agency representatives requested standardization of travel and bike lane

widths. Following the TAG meeting, the design concepts were modified accordingly.

Community Engagement

The Round Valley Indian Tribes is a sovereign nation of confederated tribes located within the project area. In 2008, the Round Valley Indian Health Center was a prime organizer of the five-day charrette/community workshop that resulted in the 2010 Walk Bike Path and Community Revitalization Strategy. Staff from the Health Center provided support for the February 2013 community workshop by assisting with outreach and participating in the event.



The consultant team and tribal leaders conducted site visits to proposed trail locations.

Tribal Council Vice-President, Joe Dukepoo, and Tribal Transportation Director, Reuben Becerra, participated on the Technical Advisory Group. In December 2012, the consultant team met with the Round Valley Indian Tribal

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

Council to provide an update on the project and to solicit input. Council was supportive of maintaining a focus on improving pedestrian and bicycle safety in Round Valley, particularly along State Route 162 from Howard Street to Hurt Road. Council was also supportive of non-motorized trails on tribal lands to improve east-west connectivity, and to provide an off-highway trail along the west side of SR 162. Council requested that the consultant team prioritize these trail segments and proceed with surveying and data collection on tribal lands.

On August 5, 2013, members of the consultant team presented design concepts to the Tribal Council for input. Council maintained strong support for improvements to bicycle and pedestrian facilities on and off tribal lands. Council requested modifications to the design at the Tribal Commerce Center to accommodate a new fueling station and relocation of a driveway. , Tribal Council adopted Caltrans' Class I Trail Standards for the trails that are envisioned on Tribal land in this Study. Additionally, Council directed their staff to work with Caltrans or the County to pursue an agreement to formalize public access rights for use of pedestrian/bicycle facilities on tribal lands.

Media Coverage

KYBU radio helped promote the workshop by airing a ten minute interview with one of the consultants. During the interview, the relationship of this project to previous studies and projects was discussed and details of the workshop were announced. KMUD aired excerpts of the interview on the local news to inform area residents about efforts to improve pedestrian and bicycle facilities in Round Valley.



KYBU radio produced a 10 minute interview about pedestrian and bicycle improvements in Round Valley.

Youth Engagement

Local cyclist Dean Meyer organized a free bicycle repair event prior to the community workshop. Youth bike mechanics helped tune up and make minor repairs on bikes in preparation for a community bike ride through the valley. Following the ride, over 30 youth joined the workshop and participated in providing input, suggesting trail alignments, and identifying issues and opportunities.



Youth mechanics repair bikes at the Library Commons



Youth gather around a "Design Table" to tell Caltrans staff where bicycle trails are needed.



Youth mechanics repair bikes at the Library Commons

3 Community Workshops

Two well-advertized and attended community workshops were held to engage the general public in Covelo and greater Round Valley in the planning and design process.

3.1 Community Workshop #1



Farmers' Market Coffee Company catered the event and extended café hours to serve participants.

Presentation Summary

Public input was collected during a community workshop held February 28, 2013 at the Round Valley Library Commons Community Room. The workshop engaged 75 participants in an interactive planning and design process to improve non-motorized transportation options in the valley. Food and hot drinks were provided by the Farmers' Market Coffee Company in the lobby. All participants were encouraged to enter the free raffle for bike gear (helmets, locks, LED lights) donated in part by Dave's Bikes in Ukiah.

The workshop kicked off with an introduction of the consultant team and an overview of the project, including how the current project builds on the 2010 Walk Bike Path and Community Revitalization Strategy and Caltrans' Project Study Report for SR 162. Tribal representatives provided an overview of the new Tribal Transportation Department and its commitment to improving safety and building trails on tribal lands. Consultants engaged in a discussion with the audience of current opportunities and constraints within the project area, and potential design solutions.



Participants recommended trails, bike routes, and safety improvements at the Design Tables .

Design Station Summary

Following the presentations, participants worked at Design Tables that were staffed by TAG members. Participants drew and wrote on maps of the study area and made recommendations for improving pedestrian, bicycle, and equestrian conditions in the study area. The evening concluded with a summary of major concepts discussed at each of the Design Tables.

Workshop participants supported four main projects along SR 162 (north of downtown), a non-motorized trail along the west side of 162, improvements at the Tribal Commerce Center, and intersection improvements at Hurt Road and Biggar Lane. Overall, participants noted a concern with the high speed of vehicle traffic on 162 and suggested installing speed limit signs, increasing lighting and increasing California Highway Patrol on weekends.

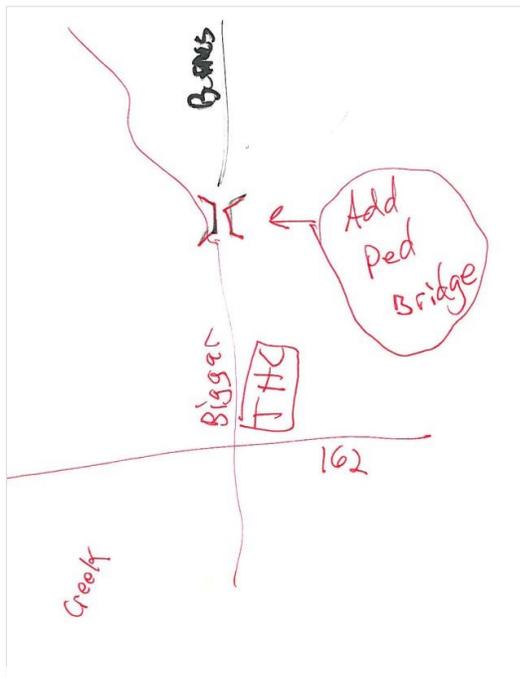
Station 1: State Route 162

SR 162 is the transportation “spine” of the community and elicited the most interest and concern regarding improvements between downtown and destinations to the north.

Non-motorized trail along SR 162

A paved or crushed rock trail separated from the road was supported. Generally, workshop attendees would prefer Class I path but are concerned about cost. People would like to see Class II at minimum but a high number of pedestrians along SR 162 also need accommodation by providing improved sidewalks or paths. There is demand for the trail to provide accommodation for horses from downtown

to Rodeo Grounds. The existing Mill Creek crossing is constrained because of the narrow bridge. Suggestions for crossing Mill Creek include widening the existing bridge or constructing a small log walking bridge. Several attendees wanted to dedicate the proposed trail by naming it after a local cyclist who was killed in a bicycle crash.



At the workshop, participants were invited to sketch design solutions

Tribal Commerce Center improvements

Participants noted the need for a crosswalk across SR 162 at the Commerce Center. The proposed trail crossing at the parking lot driveways will need to be addressed with a design solution.

Hurt Lane intersection improvements

Participants suggested strategies to slow traffic at the intersection, such as through signs and painting the intersection.

Biggar Lane intersection improvements

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

The intersection of SR162 and Biggar Lane was reported to have a high incident of crashes (4 in 3 years) per the Statewide Integrated Traffic Records System (SWITRS). Low visibility and sight-distance issues from vegetation are a concern. High visibility crosswalks and a pedestrian bridge were suggested improvements.

Station 2: Downtown

Workshop participants suggested a number of improvements for the downtown area including improvements to the downtown district feel, traffic calming and sidewalk improvements on Howard Street and at the Charter School, and non-motorized connections from Howard St. to Foothill Blvd.

Downtown District

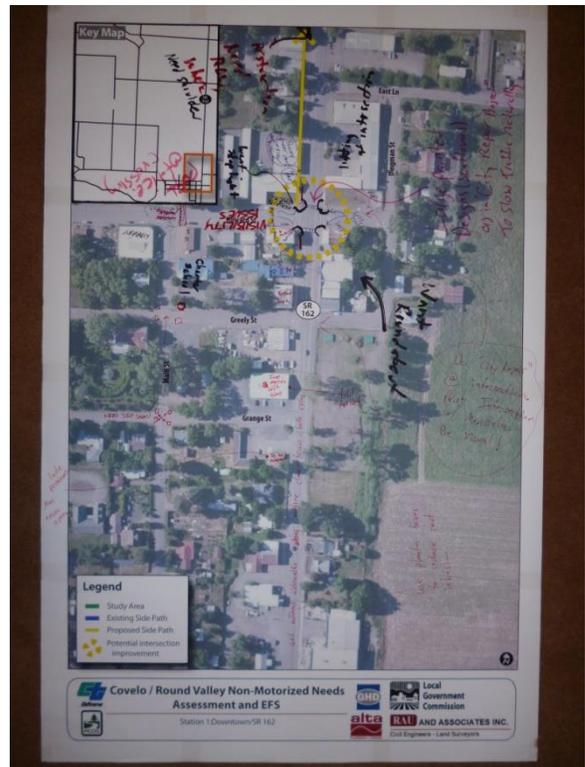
Attendees provided recommendations for making the downtown feel like a business district and improving safety. Suggested improvements include low-level pedestrian lighting or lighted bollards, decorative lighting, and street trees. Attendees also suggested adding a buffer between the sidewalks and SR 162 and repaving the road.

Howard Street

There was strong consensus for improving the sidewalks along Howard Street by resurfacing and widening. Traffic calming improvements were suggested including a marked crosswalk at the post office. Recommendations for improving the intersection at SR162 included curb bulb-outs, pedestrian refuge island, traffic light and large pavement mural to slow traffic.

School Zone

Improve school zones through traffic calming, sidewalks, crossings and school zone speed limit signs at the Charter school. Also suggested was to strengthen the bike and pedestrian connections from Foothill Boulevard to Howard Street by the elementary and high school.



Large scale aerial maps were provided for participants to draw their ideas on.

Station 3: Off Highway Trails

Suggestions for improving east-west connectivity included a proposed off-road trail and traffic calming on Henderson Road.

Non-motorized trail- Henderson Rd to SR 162

There is a concern with 4-wheel drivers and how to restrict trail use. A need for trail wayfinding signs and trash cans was noted.

Henderson Road traffic calming

Participants wanted to see slower or less traffic on Henderson or shared pedestrian and car use. Speed bumps proposed as a solution for traffic calming.

Station 4: West of Henderson

This is a primarily residential area and participants identified the greatest needs are to provide bike lane connections to schools and provide traffic calming along Foothill Boulevard.

Safe Routes to School

Attendees noted narrow roads and poor visibility a concern to safety. Bike lanes were identified as a priority.

Foothill Boulevard

Traffic calming at intersections along Foothill Blvd was proposed, such as painted intersections.

Station 5: Station 5: The "Big Picture"

This station offered participants the opportunity to view and comment on an overall project area map and design toolkit of various pedestrian and bicycle improvement options. Although participants' comments were recorded on the Station 5 map during the workshop, their location specific comments were incorporated into the Station 1, 2,3, and 4 summaries after the workshop.

3.2 Community Workshop #1 Documentation

The following maps include community input given during first workshop.

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

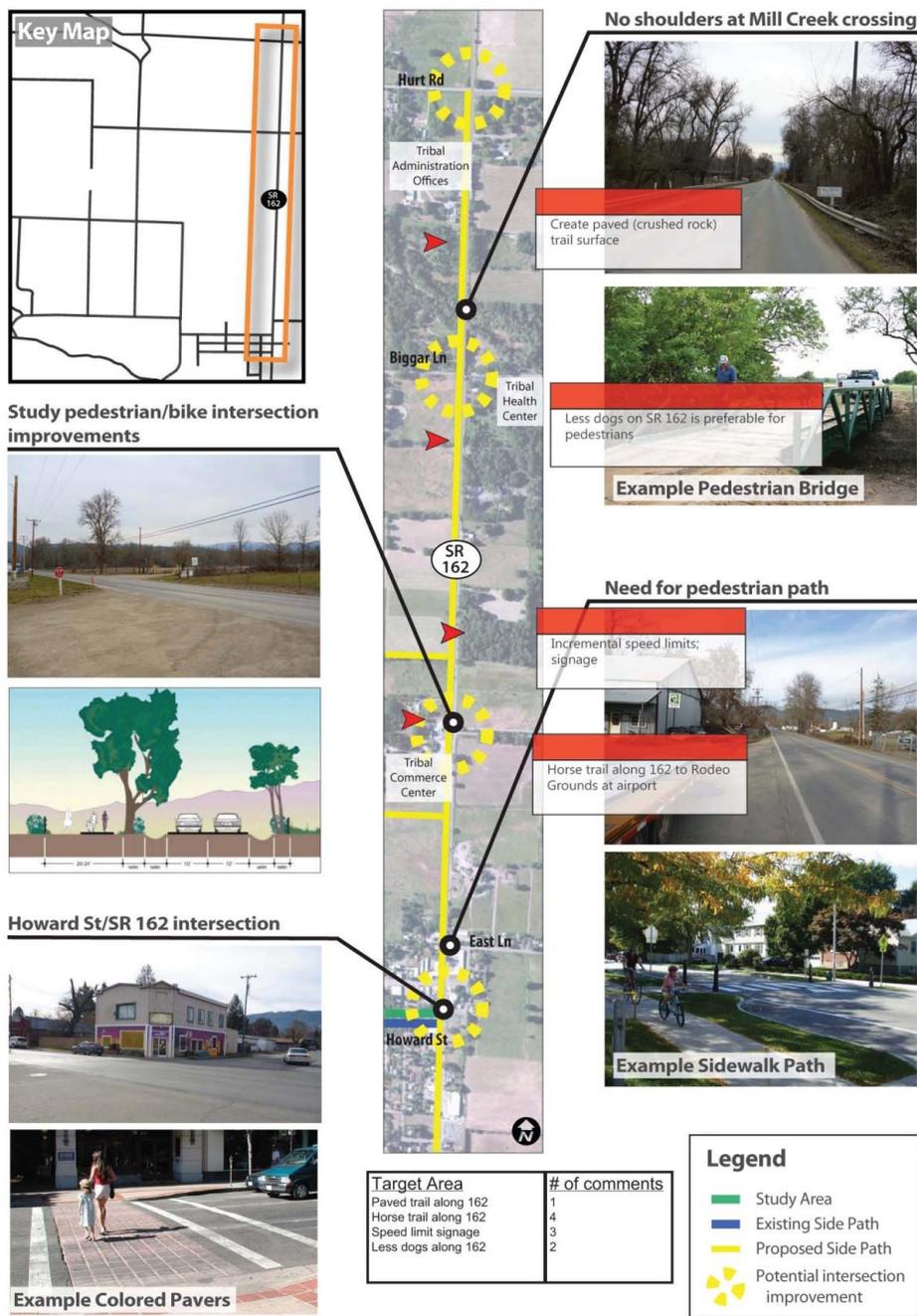


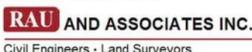
Figure A1 State Route 162

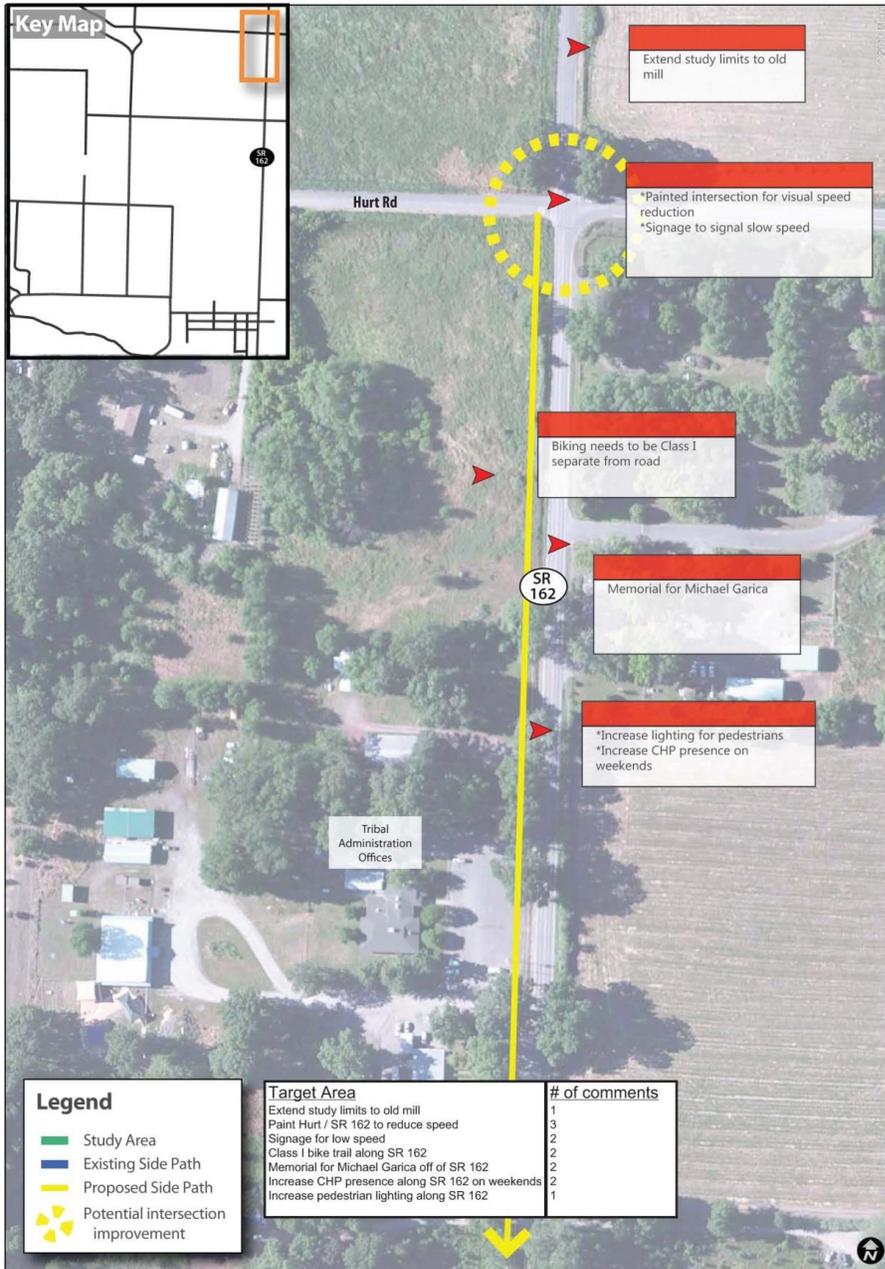


Covelo / Round Valley Non-Motorized Needs Assessment and EFS
 Station 1: State Route 162



Local Government Commission


RAU AND ASSOCIATES INC.
 Civil Engineers - Land Surveyors




Covelo / Round Valley Non-Motorized Needs Assessment and EFS




 Station 1: Hurt Rd and SR 162
 


Civil Engineers • Land Surveyors

Figure A2 Hurt Road and SR 162

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

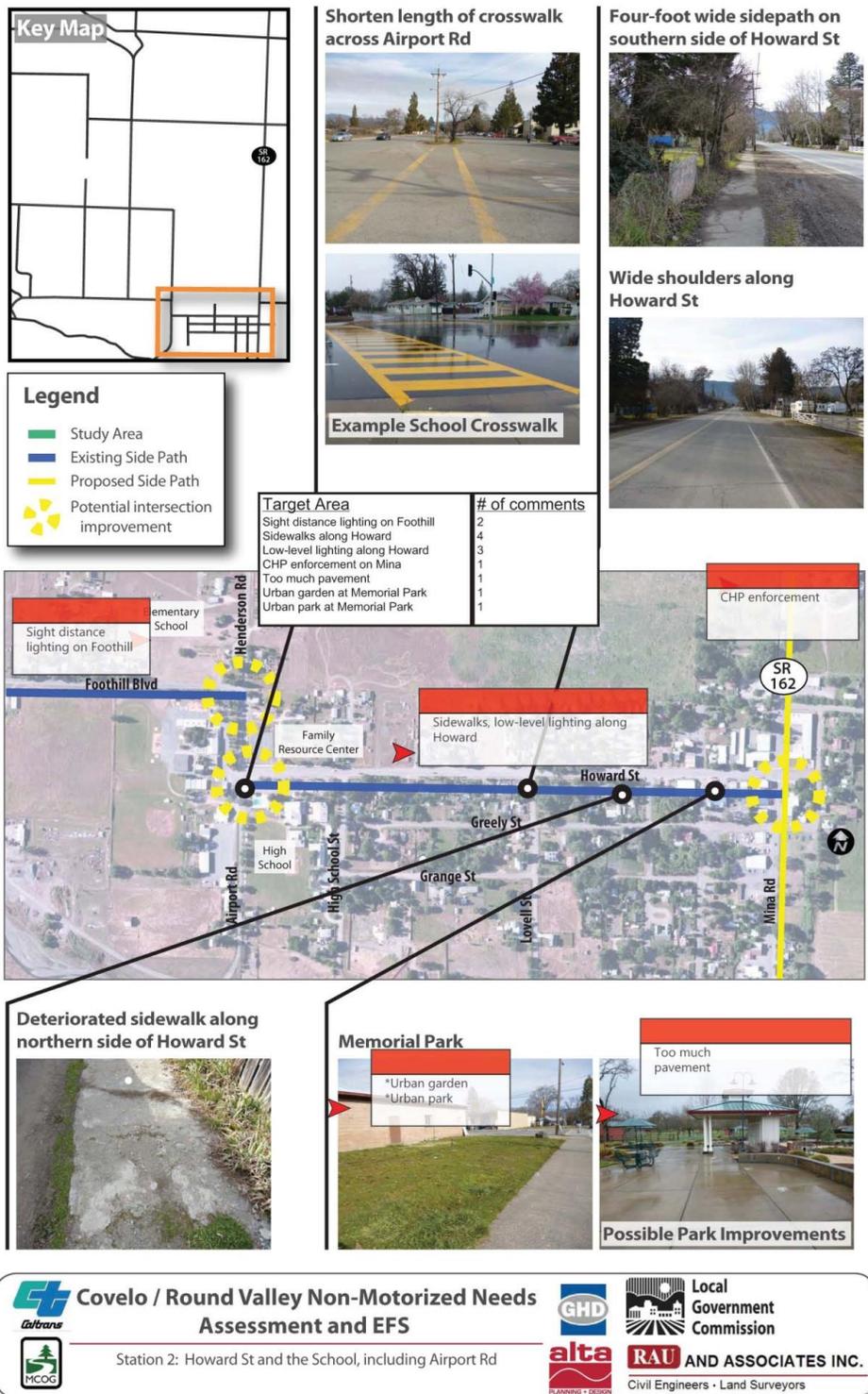
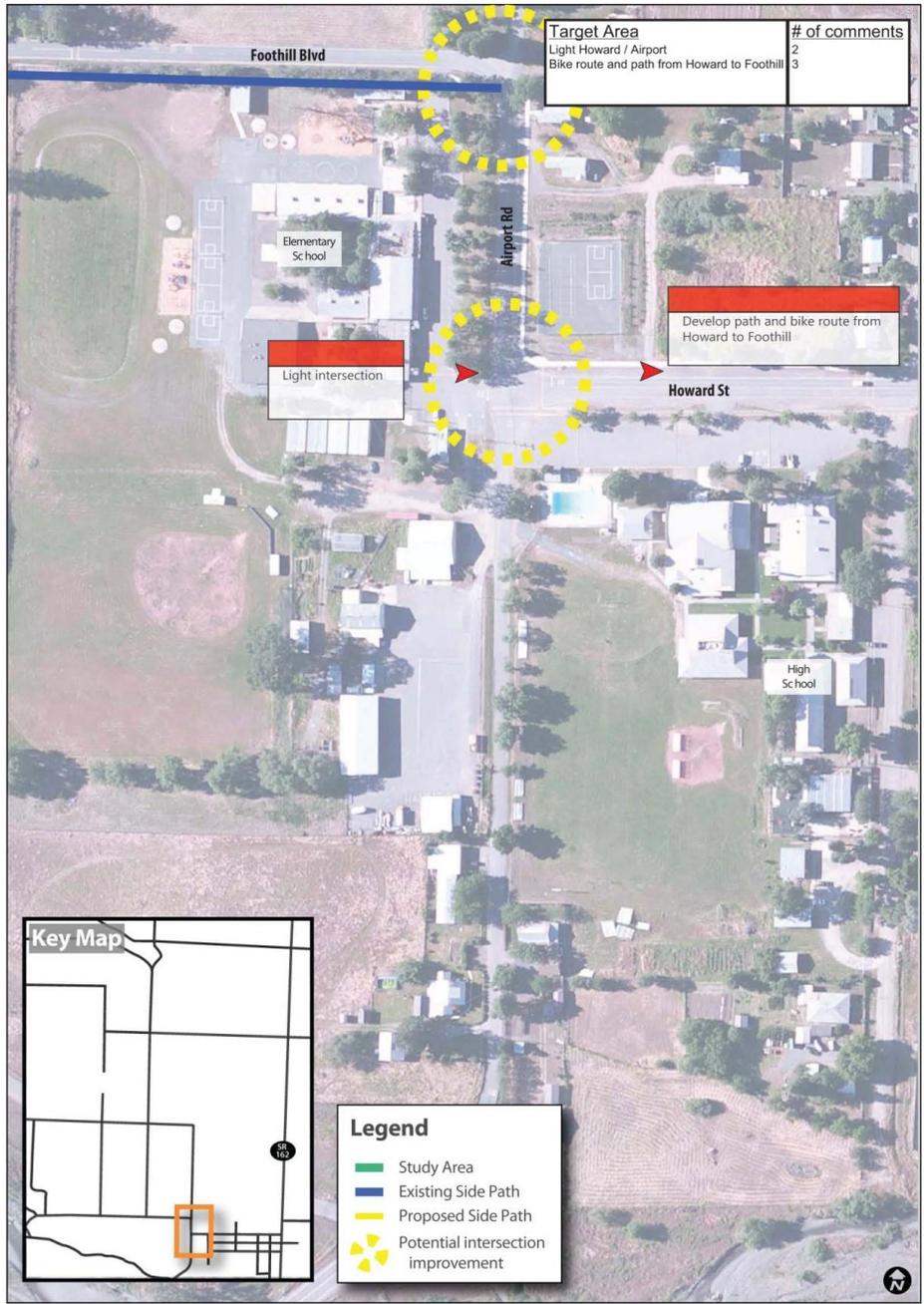


Figure A3 Howard Street and the School, including Airport Road




Covelo / Round Valley Non-Motorized Needs Assessment and EFS


 Local Government Commission


 Station 2: Intersection of Airport Rd and Howard Rd
 

 RAU AND ASSOCIATES INC.
 Civil Engineers - Land Surveyors

Figure A4 Intersection of Airport Road and Howard Road

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

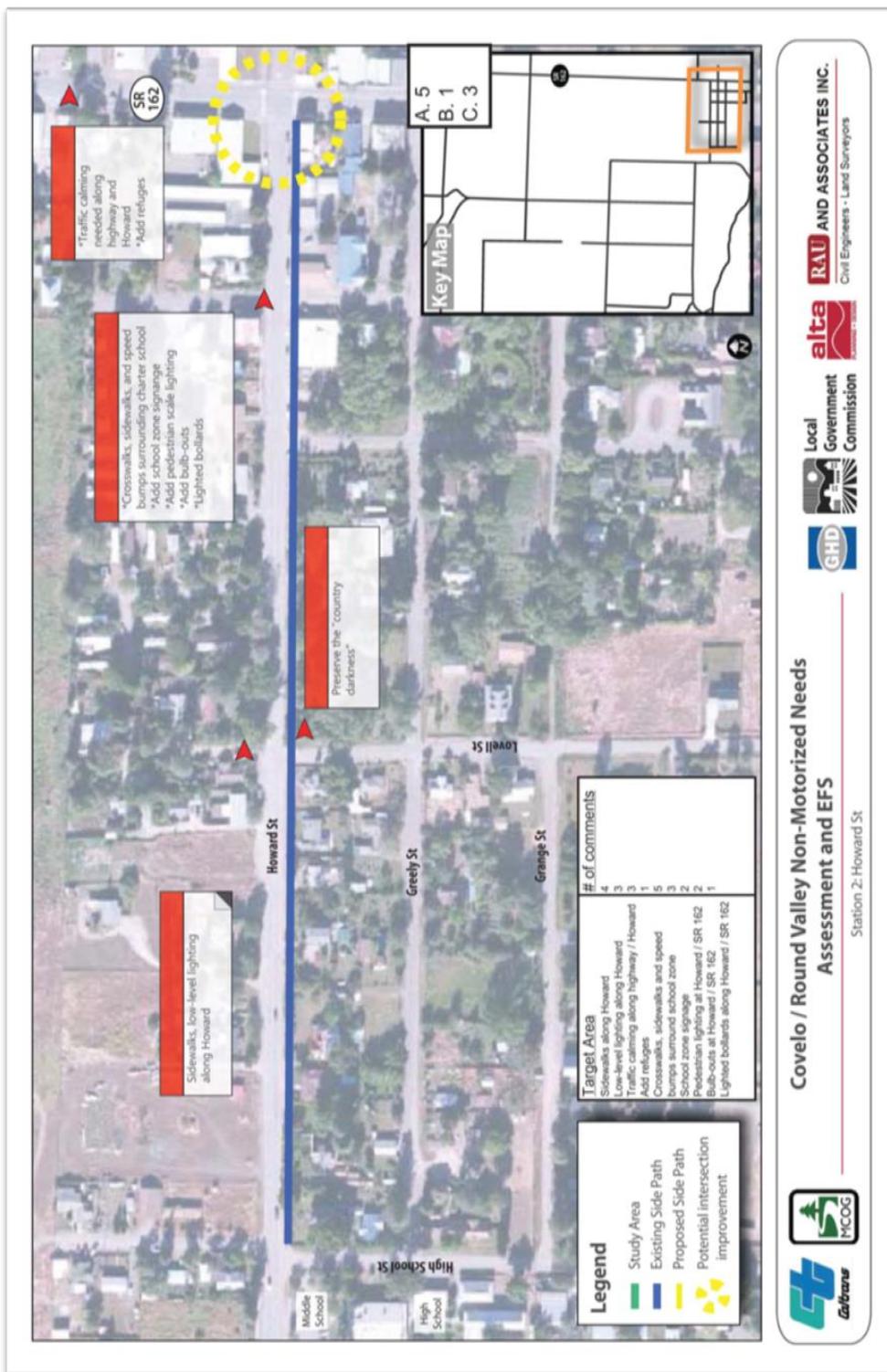
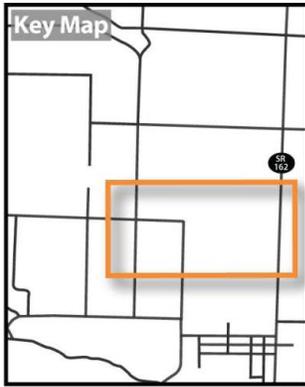


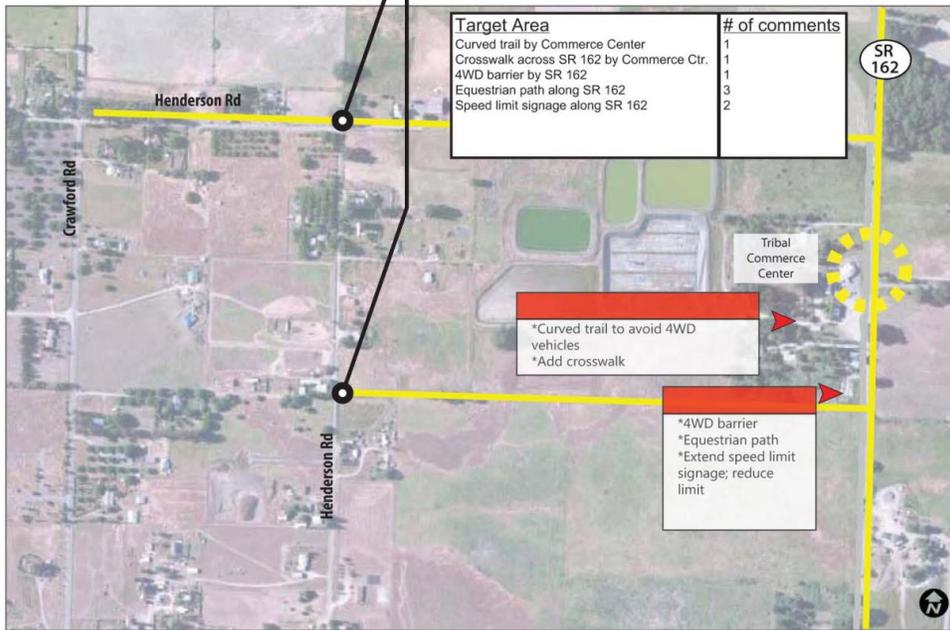
Figure A5 Howard Street



Legend

- Study Area
- Existing Side Path
- Proposed Side Path
- Potential intersection improvement

Two potential sites to improve east/west connection



Covelo / Round Valley Non-Motorized Needs Assessment and EFS

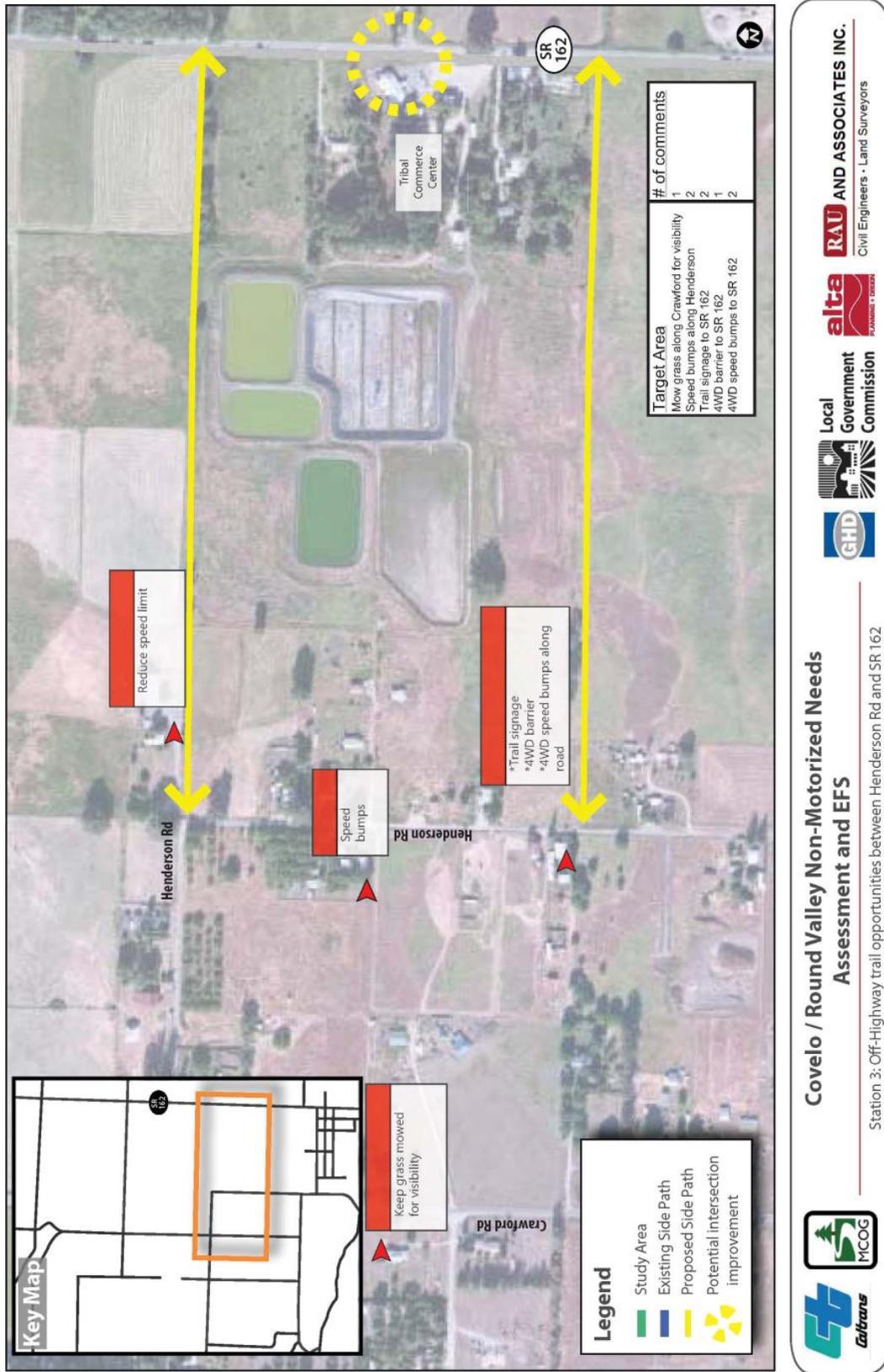
Station 3: Off-Highway Trails between Henderson Rd and SR 162

Local Government Commission

ALTA
PLANNING + DESIGN

RAU AND ASSOCIATES INC.
Civil Engineers - Land Surveyors

Figure A 6 Off-Highway Trails Between Henderson Road and SR 162



Covelo / Round Valley Non-Motorized Needs Assessment and EFS

Station 3: Off-Highway trail opportunities between Henderson Rd and SR 162



Figure A7 Off-Highway trail opportunities between Henderson Road and SR 162

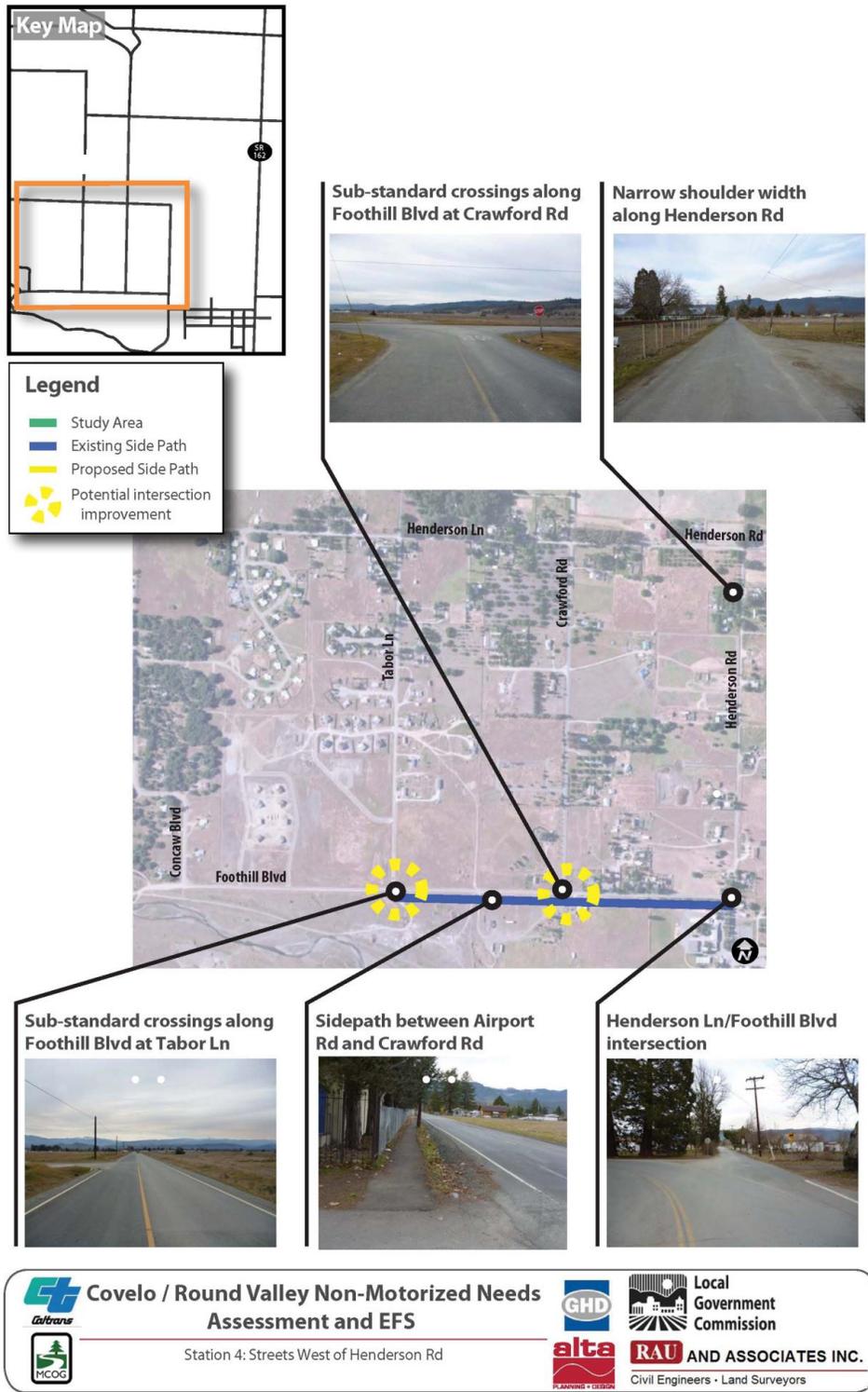
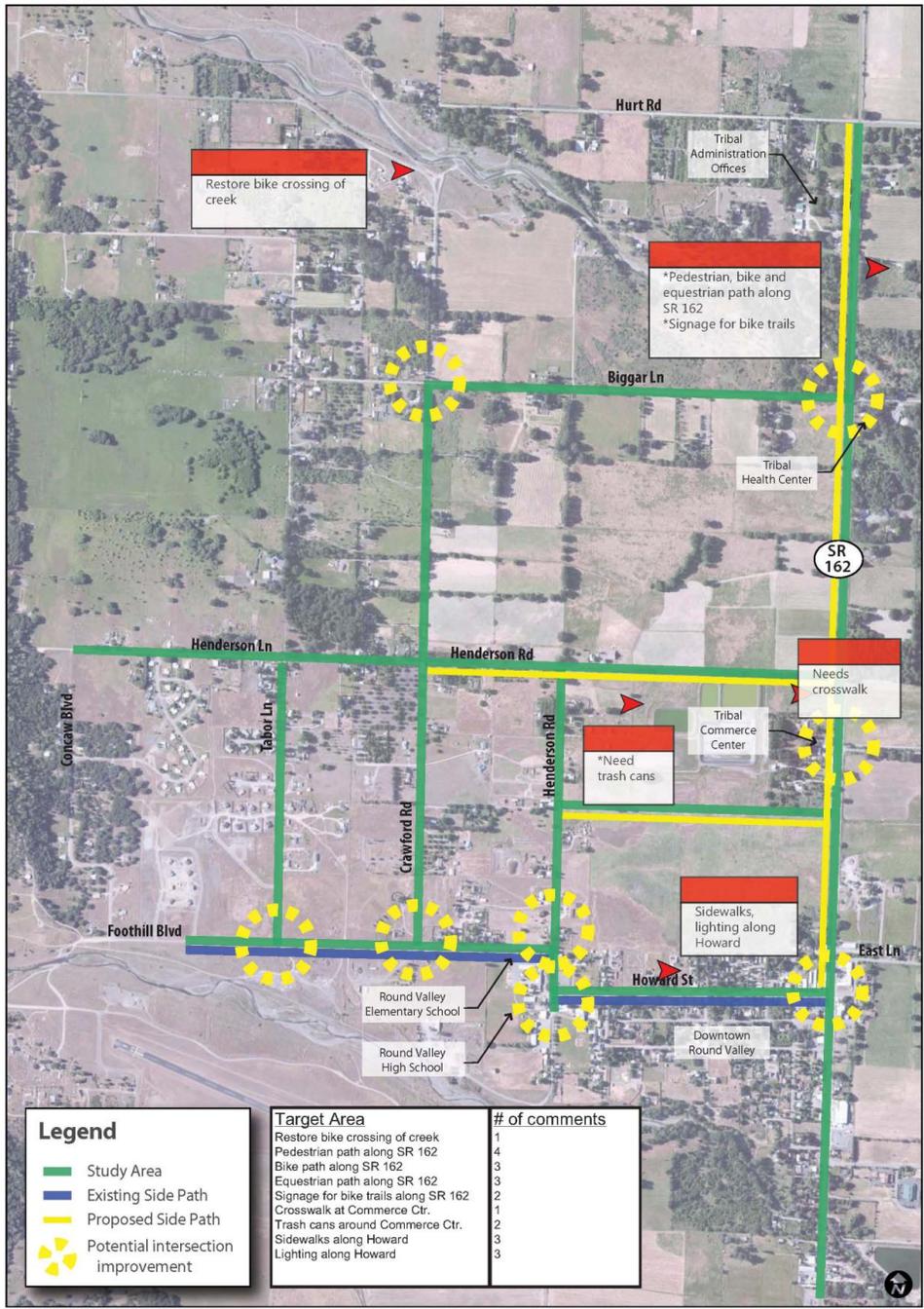


Figure A8 Streets West of Henderson Road

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study



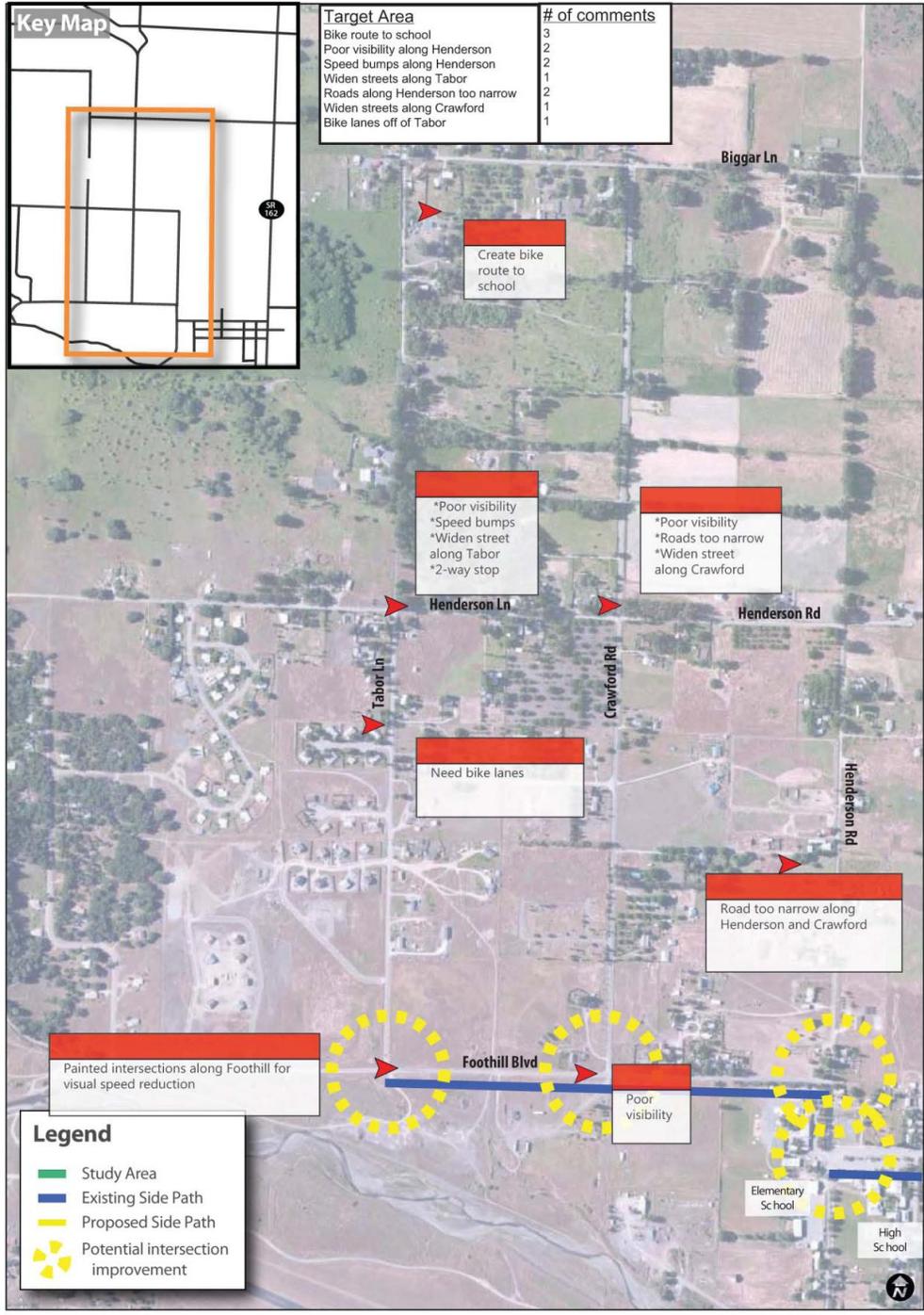

Covelo / Round Valley Non-Motorized Needs Assessment and EFS




 Station 5: The "Big Picture" and Implementation & Management
 

 Civil Engineers • Land Surveyors

Figure A9 The "Big Picture" and Implementation & Management




Covelo / Round Valley Non-Motorized Needs Assessment and EFS




 Station 4: Streets West of Henderson Rd
 


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Figure A10 Streets West of Henderson Road

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

Bikeway Types



Pedestrian Accomodations



Crossing Treatments



Traffic Calming



Pedestrian Signals



Pedestrian Amenities

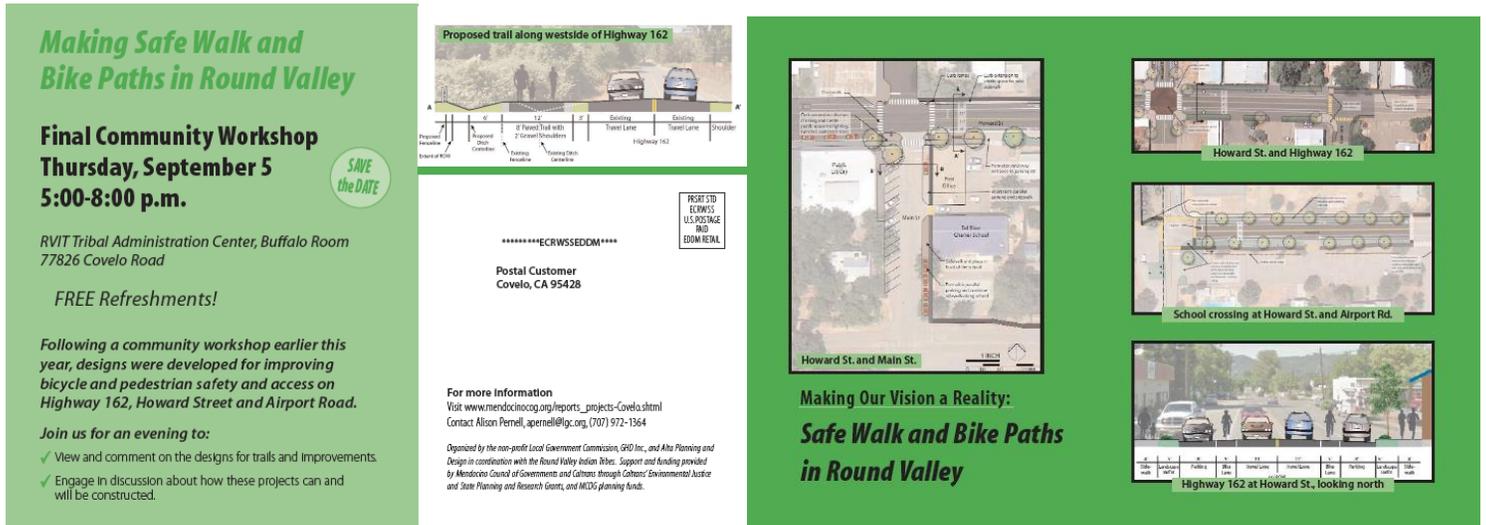


	Covelo / Round Valley Non-Motorized Needs Assessment and EFS Design Toolkit		
		PLANNING • DESIGN	Civil Engineers • Land Surveyors

Figure A11 Design Toolkit

3.3 Community Workshop #2

The second and final community workshop was held September 5, 2013 at the Round Valley Indian Tribes' Buffalo Room. Approximately 30 people were in attendance to review revised design concepts and discuss project implementation. Food was provided by the Round Valley Indian Tribes.



A post card mailer showed some of the proposed design concepts and was mailed to every address in Round Valley to promote the second workshop

Outreach for the September 5 workshop included:

- A post card mailer sent to every address and PO Box in Covelo/Round Valley;
- Announcements on KYBU and KZYX Radio stations;
- Emails to all project contacts and participants from the February, 28 workshop;
- Additional grass-roots outreach through the Round Valley Indian Health Center;
- Social media posts;
- Distribution at the Round Valley Library;
- Posting a workshop announcement to Round Valley News online (a Yahoo Group); and
- Posting of the post card to community bulletin boards.

During the final workshop, the consultant team provided a project update since the first community workshop in February. After public input was gathered in February, design concepts were developed and revisions requested by the Technical Advisory Group, Round Valley Tribal Council, and Caltrans. Additionally, field checks revealed that design concepts required modification at Airport Road at Foothill Drive, and SR 162 south of Mill Creek, at the entrance to the Tribal Commerce Center, and along SR 162 in downtown Covelo. In response to final designs and pending construction of a fueling station at the Tribal Commerce Center, the consultant team modified the trail design at this location. The revised design concepts presented at the September 5 community workshop also incorporated other minor suggestions from Tribal Council including driveway re-alignment at the Casino and driveway consolidation at the Tribal Administration Center.

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study



Community members visited “Design Tables” and provided feedback on the design concepts.

Following an overview of the revised design concepts and cost estimates, workshop participants visited four stations to review and comment on details of the designs. The stations were:

1. Highway 162 and Trails,
2. Howard Street and the schools,
3. Streets West of Henderson, and
4. The “Big Picture” table (overview, funding, implementation).

Stations included maps of the design concepts and were staffed by MCOG, Mendocino County Department of Public Health and Transportation, Caltrans, and the consultant team. Workshop participants asked questions and provided comments about the effectiveness of and support for the concepts. Overall, there was broad support for the proposed pedestrian and bicycle improvements. However, at Station 3 (Streets West of Henderson), there was concern about pedestrian safety in the proposed crosswalks at Airport Road and Foothill Drive. Several suggestions were made to improve safety at this challenging corner.

The evening wrapped up with a moderated discussion about the who’s, when’s, where’s and how’s of project implementation. Randy Anderson (Alta Planning and Design), Phil Dow (MCOG), and Rex Jackman (Caltrans) shared some of the ways that improvements to pedestrian and bicycle facilities are

typically funded and constructed. Vice-President Joe Dukepoo (Round Valley Indian Tribes) emphasized the strong level of support for these projects by the Tribal Council.

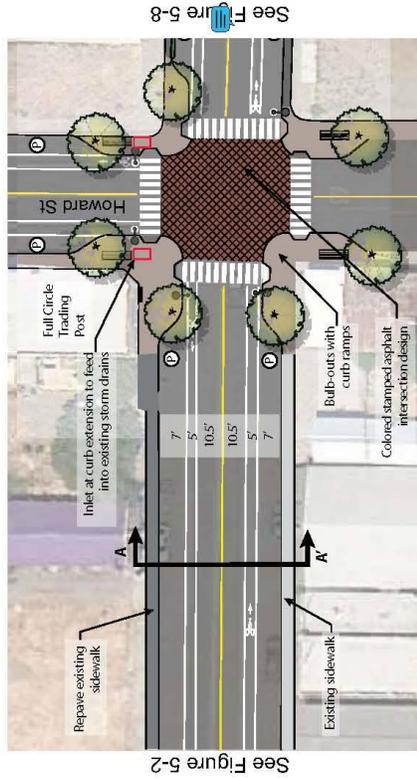
Post-workshop, design concepts underwent final revisions; they appear in this report.

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

3.4 Community Workshop #2 Documentation

The following maps include community input given during second workshop.



See Figure 5-2

See Figure 5-8

BENJAMIN WALDO
Sticky Note
Yes to full design

BENJAMIN WALDO
Sticky Note
This section has new businesses; many people walking

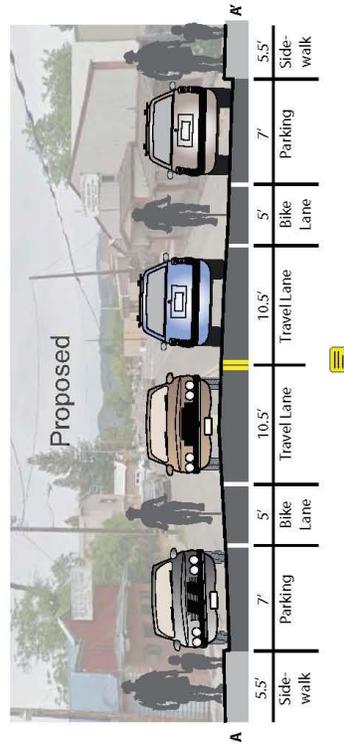
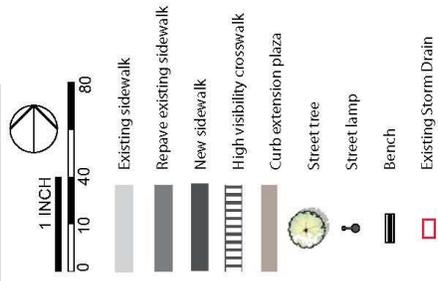


Figure X-1: State Route 162 - Howard Intersection

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

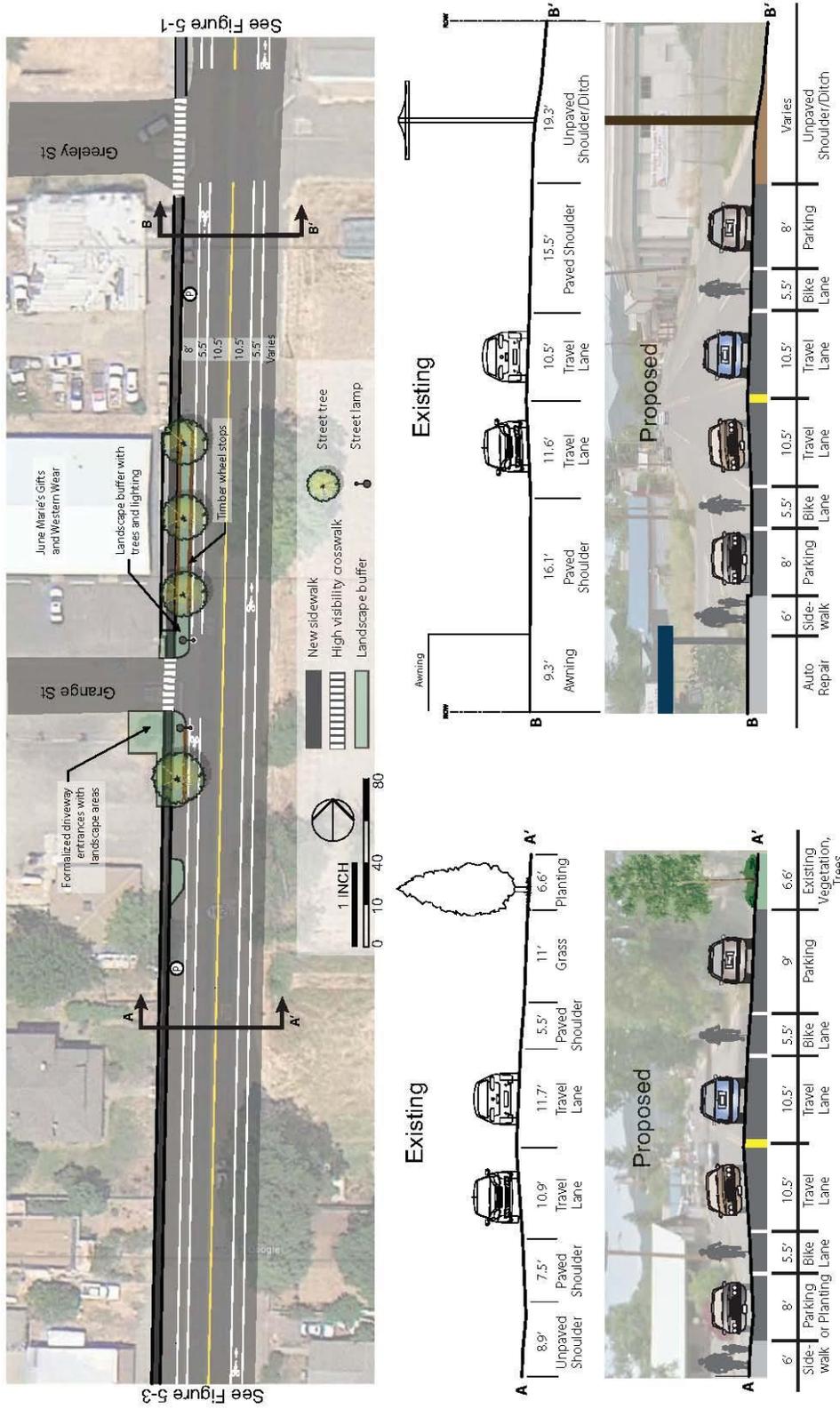


Figure X-2: State Route 162 - Greeley and Grange Streets

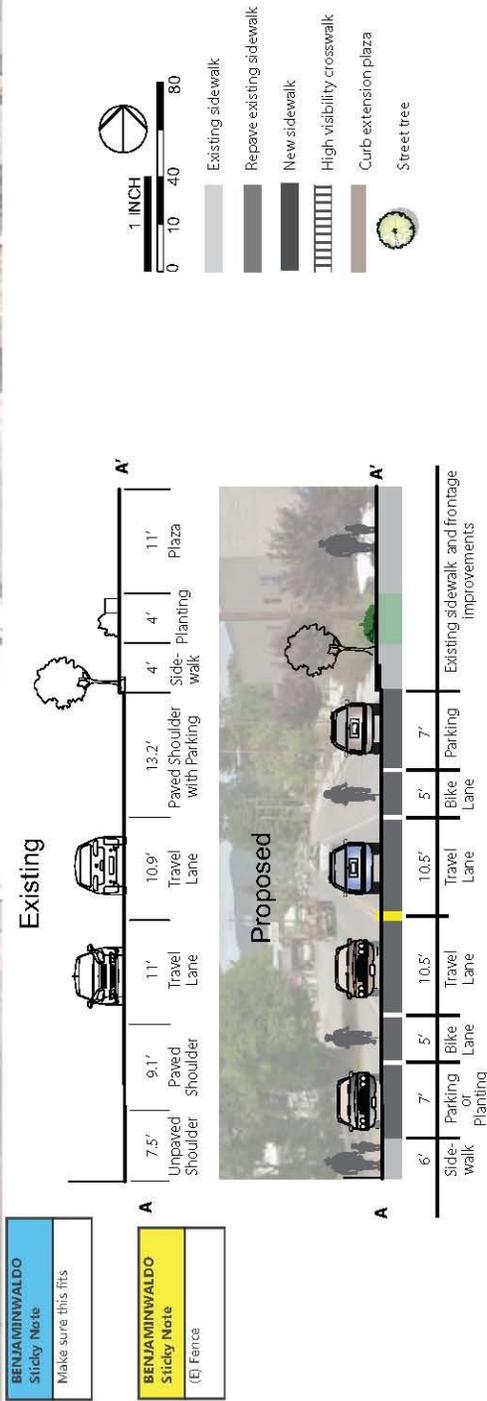
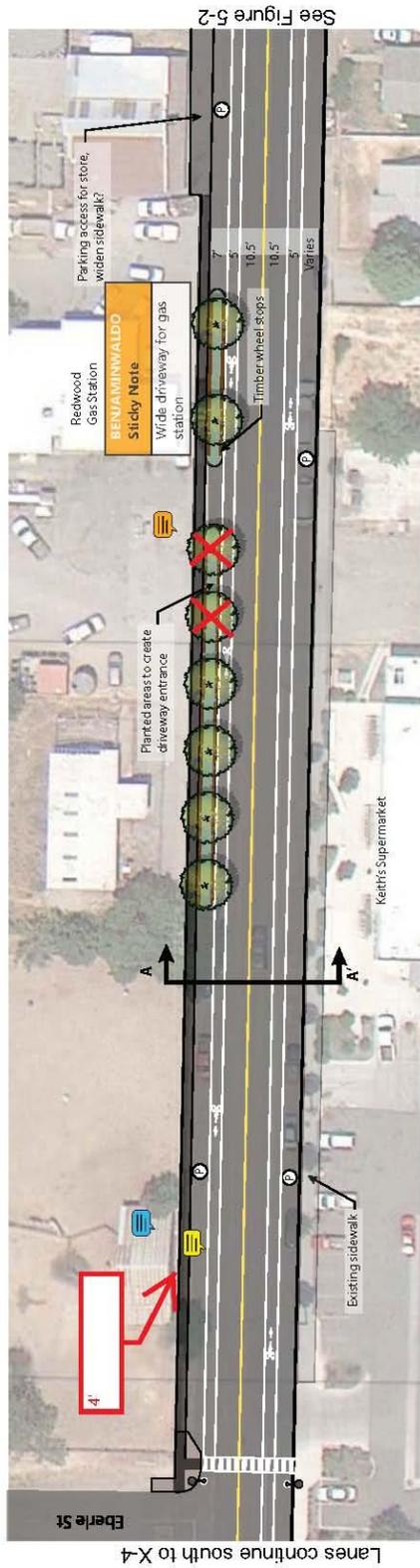


Figure X-3: State Route 162 - Keith's Supermarket

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

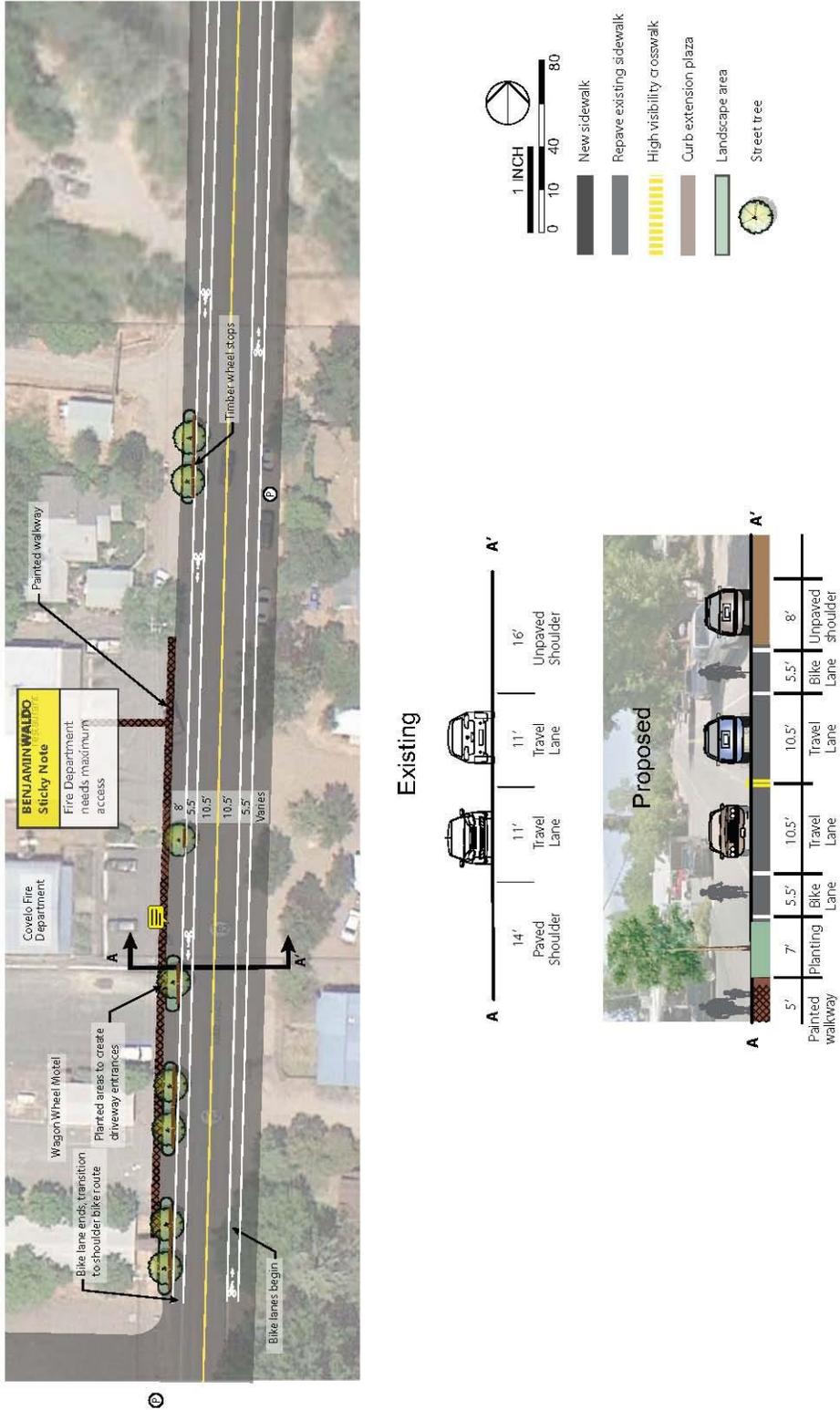


Figure X-4: State Route 162 - South

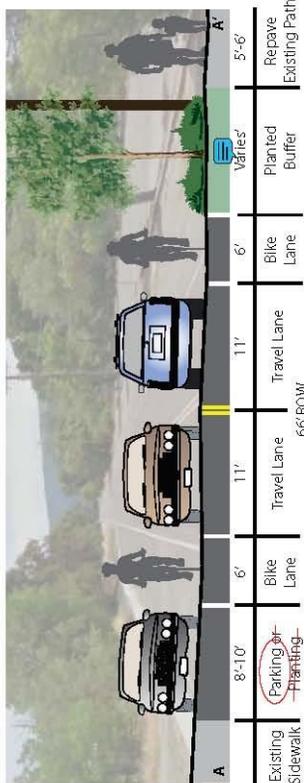
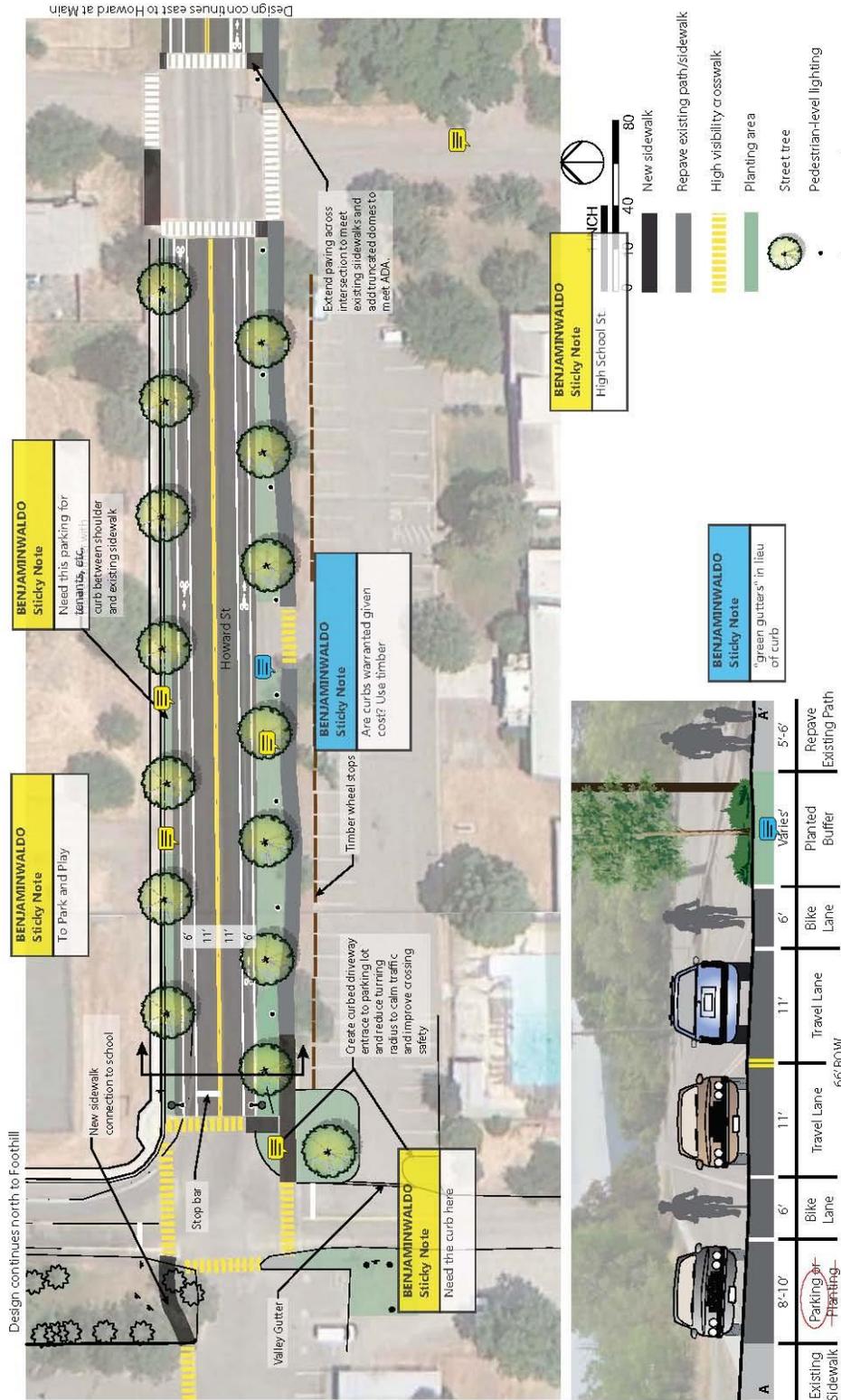


Figure X-5: Howard Street at Airport Road

Covelo/Round Valley Non-motorized Transportation Plan

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

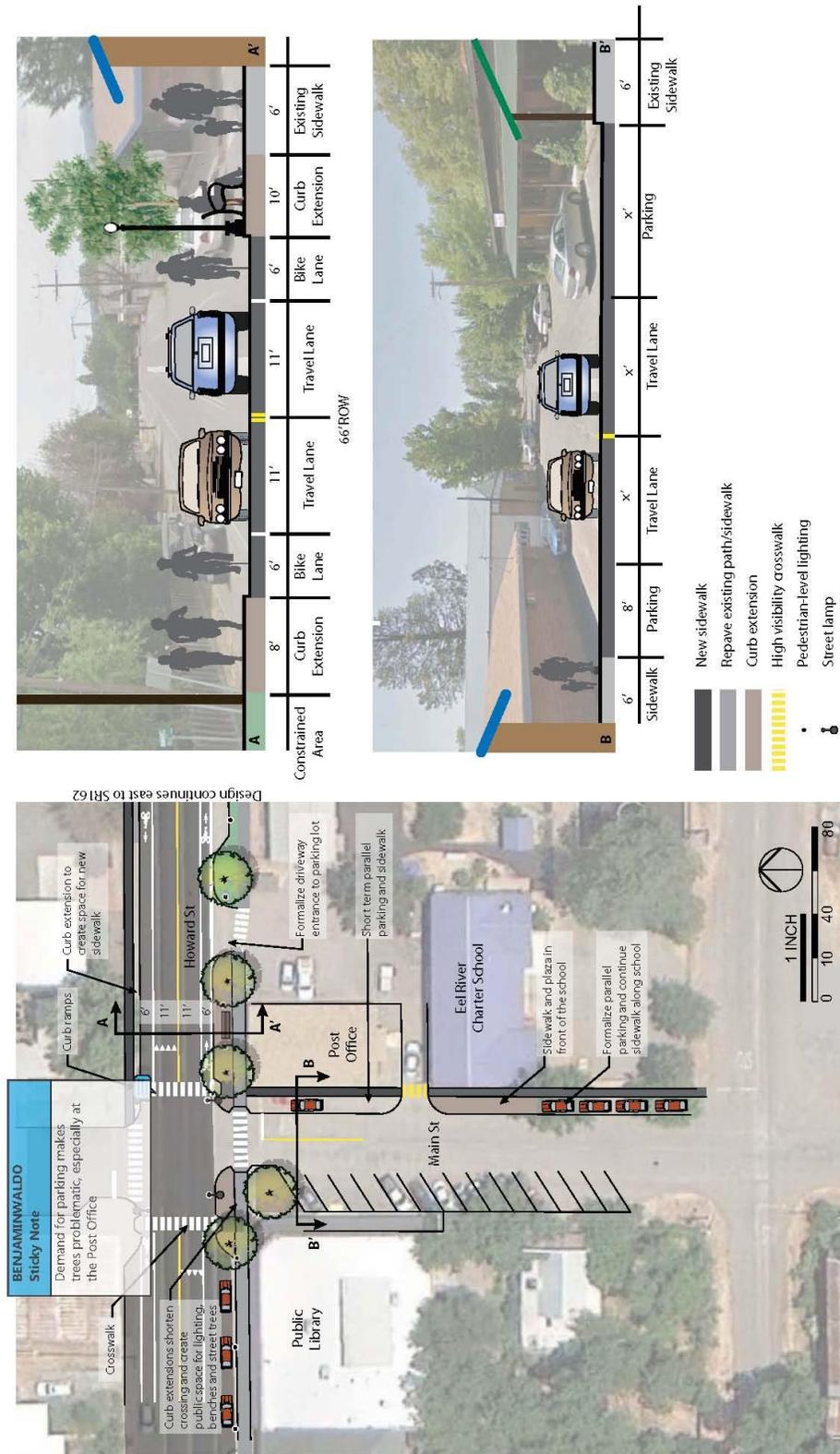


Figure X-6: Howard Street at Main Street

Summary of Public Outreach and Engagement

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

ROUND VALLEY INDIAN TRIBES *A Sovereign Nation of Confederated Tribes*

TRIBAL COUNCIL OFFICE
POST OFFICE BOX 448
COVELO, CALIFORNIA 95428
PHONE: 707-983-6126
FAX: 707-983-6128



LOCATION: ON STATE HWY 162
ONE MILE NORTH OF COVELO
IN ROUND VALLEY
TRIBAL TERRITORY SINCE TIME BEGAN

ROUND VALLEY RESERVATION ESTABLISHED 1856

December 4, 2013

Mr. Tom Origer
Tom Origer & Associates
P.O. Box 1531
Rohnert Park, CA 94927

RE: Covelo/Round Valley Non-Motorized Needs Assessment Project

Dear Mr. Origer,

Thank you for your email of 23 October 2013 referring to the Cultural Resources Surveys for the Round Valley Environmental Justice Project initiating consultation for Robert Holmlund, GHD for the above referenced undertaking.

The Round Valley Indian Tribes understands the National Historic Preservation Act of 1966 and its implementing regulation at 36 CFR Part 800 requires that before any federal agency project or any federally-funded or federally-licensed project is undertaken, the head of the lead federal agency must take into account the effect of that undertaking on any resource that is included in or eligible for inclusion in the National Register of Historic Places (NRHP).

Within the APE, there were numerous historic properties previously identified:

CA-MEN-191,
CA-MEN-192,
CA-MEN-193,
CA-MEN-194,
CA-MEN-1167,
CA-MEN-1168,
CA-MEN-1180, and
P-28-0002823

Though all of these sites may not be well-developed or incorrectly placed on the location map, it is believed that they all, under California Register of Historical Resources (CR) Criterion 4, have yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation; so they are determined eligible for listing in the CR and NRHP.

Round Valley Non-Motorized Needs Assessment 2013

Therefore, we concur with the following treatment recommendations:

- a) Ground-disturbing activities should be avoided in the site area,
- b) in the case that avoidance is not possible, a treatment plan be should be prepared and implemented, and
- c) the use of a local, tribal monitor with knowledge of the area.

There is also a high possibility that buried archaeological deposits could be present in the area and that accidental discoveries could occur. Following CEQA guidelines, if archaeological remains are uncovered, work at the site of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5).

Thank you for considering historic properties in your planning process and I look forward to continuing consultation on this project. If you have any questions, please contact me at 707-983-6351.

Sincerely,



Deborah Hutt
Tribal Historic Preservation Office
Round Valley Indian Tribes
77826 Covelo Road
Covelo, CA 95428
(707) 983-6351 Office
(707) 983-6128 Fax
thpo@rvit.org

Round Valley Non-Motorized Needs Assessment 2013

Appendix B. Trail Implementation Challenges and Solutions

Covelo/Round Valley Non-Motorized Needs Assessment & Engineered Feasibility Study

January 8, 2014



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1. Trail Implementation Challenges and Solutions

This document discusses general challenges and solutions for establishing a trail system, focusing on proposed trails outside of the public road right of way, while encompassing considerations for any part of the Round Valley trail system. It provides considerations for the location and design of the proposed trails, and in plans for their operation, management and maintenance. This chapter also discusses the challenges and options for acquiring the right of access for a trail on private property, or on other public property that is not designated for trail/bike/pedestrian use. Finally, this chapter discusses challenges and solutions related to agricultural and environmental resources.

The best practice to minimize potential legal actions is to manage the trail in a coordinated program that identifies safety issues and addresses them efficiently.

A number of pertinent challenges were raised at the TAG and community meetings, and others discussed below are typically raised in conjunction with proposed trails. Specific concerns include:

Adequate Public Safety. The trail facilities must be designed and maintained to meet standards and best practices for protecting the users, avoiding conflict with motor vehicle traffic, and avoiding impact on adjacent property.

Security and Emergency Response. Requirements and arrangements for medical, police, and fire services should also be resolved.

Liability. Public entities and private non-profit landowners may incur liability if trail user injuries occur on trails they own or manage. There are laws and statutes in place that provide broad liability protection for trails, and arrangements that can further protect against liability.

Private Property Security and Loss of Privacy. It is anticipated that parts of the trail will be located near to private properties, or on them, with permission. Neighbor concerns associated with siting a trail near their properties typically include privacy, security, and liability.

Adequate Operation and Maintenance. Well-maintained trails minimize user safety issues and impacts on adjacent properties. The trail will require maintenance to address deterioration due to weather or general use. The trail will require patrol and maintenance to prevent and address potential problems such as damage to signs, litter, graffiti, travel at unsafe speeds, mismanaged pets, or unauthorized motor vehicles on the trail. Maintenance and management activities will require staff, equipment, and the associated funding.

1.1 Public Safety and Functionality

The objective of the trail improvements is to create safer conditions for bicyclists and pedestrians, and other users in some cases. To fully achieve this, the trail facilities must be located and designed to meet standards and best practices for bicycle and pedestrian facilities, and accommodating other users where applicable, such as equestrians, ATVs, and maintenance vehicles. Meeting these standards and guidelines not only helps to assure the safety of trail users; it improve the functionality and enjoyment of the trail, and is a legal requirement in the case of ADA compliance, and for facilities in the state right of way and/or receiving state or federal funding. Resolving trail location and design is particularly important at street crossings, driveway crossings, and at “pinch points” where

the trail runs parallel to the roadway in close proximity. The chapter on Design Standards and Guidelines details the standards, guidelines and best practices, which will be reflected in the specific trail project designs developed for this Study.

1.2 Private Property and Liability

1.2.1 Challenges

Potential impacts to private property and the potential for private and public landowner liability are often raised as issues in response to proposed trails; particularly potential off-right-of-way trails. Specific challenges that are often mentioned include:

- Trespassing. Trail users may trespass on adjoining private property, and if they sustained injuries, create liability for the property owner.
- Liability. Trail users might be injured by activities undertaken by the landowner (e.g., accidental exposure to agricultural spraying or pesticide use), or other activities permitted on private property near the trail.
- Loss of Privacy. Trail implementation may result in loss of privacy for adjacent landowners.
- Property Security. Introduction of a trail may result in theft of private property and/or equipment or contamination of crops.
- Vandalism and Litter. Vandalism concerns include graffiti, littering, and damage or theft of nearby property.

1.2.2 Potential Solutions

All public facilities require a careful effort to plan and manage trail use and minimize the potential for problems and exposure to liability. The best practice to accomplish this is to manage the trail in a coordinated program of planning, design, operation and maintenance that anticipates impact or liability issues, addresses them in advance, and remedies them efficiently if they should arise. The section on Operation and Maintenance provides specific details on planning and response measures. The section on Laws and Statutes describes the substantial legal and liability protections afforded to private landowners and public entities by existing laws, statutes, policies and insurance options.

Trail Location and Design

Careful siting of the trail with buffer zones, supplemented by existing or planned vegetation, combined with appropriate fencing and signage, and a program for public information, maintenance and management can help protect the privacy and security of the adjacent land owners. Appropriate trail design can avoid impacts from trespassing. While crime or vandalism have not proven to be a common problem along most multi-use paths, fencing is still considered a prudent feature. The type, height and maintenance responsibility of the fencing will be dependent on the specific setting, needs and preference. The installation of fences along the trail is also an integral part of the defense against liability, as it prevents trail users from making attractive nuisance claims. An attractive nuisance claim hinges on the tacit “invitation” of children onto a property by a “nuisance”, such as livestock, that is attractive to children.¹ The construction of a fence, which bars children from entry and warns against nuisance, is a

¹ McEowen, Roger A. “Recreational Use of Private Lands: Associated Legal Issues and Concerns” (The National Agricultural Law Center, 2003).

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defensible precaution against attractive nuisance claims. The installation of a fence clearly demarcates the boundary between private or other off-limits land and the trail facility.

Public Information and Communication

Good public information and communication, especially with trail neighbors, can also help avoid and address trespassing and other security and liability issues. Printed, posted and on-line maps and information help to “get the word out” regarding rules, off-limits areas, and the fact that keeping the trail open may depend on public cooperation. Signs posted along the trail by the management agency asking trail users to respect private property and ‘no trespassing’ signs posted by the trail managers and property owners can help deter trespassing. Additionally, as discussed under Operation and Maintenance, regular patrols, whether by security or volunteer groups can deter crime and trespassing. Finally, staff or docent walks and talks can educate trail users about agriculture and related challenges and encourage cooperation from trail users.

The Record on Trail Issues

Criminal activity is not likely to occur along a path that is well planned, designed, operated, maintained and used. While concerns about liability are understandable, studies show that neither public nor private landowners have experienced significant liability losses from trail development. The Rails-to-Trails Conservancy surveyed management agencies overseeing 372 trails throughout the United States for their 1998 report titled “Rail-Trails and Safe Communities.” This effort documents the level of crime on trails and identifies mitigation measures used by trail designers and managers to minimize the potential for crime. More specifically, the objectives of the study were to: 1) document the levels of crime on urban, suburban and rural rail-trails with current statistics and comprehensive data, 2) examine trail management strategies that can mitigate crime and improve trail safety, and 3) put crime on trails in perspective. The results from the study indicate that rail-trails (including trails created from abandoned rail lines and trails along active rail lines) are safe places, and that liability issues were virtually non-existent. Correspondence from law enforcement agencies consistently reported that rail-trails do not encourage crime. To the contrary, many agencies found that heavy trail usage is a crime deterrent in areas that were isolated prior to implementation of the trail. The study also found that trail managers often utilize design and maintenance strategies to reduce the potential for crime². Several other studies of trail impacts on neighborhood quality and crime conclude that trails have a negligible effect on crime (the most common infringements include illegal motorized use of the trail, litter and unleashed pets) and that neighbors to the trail are either satisfied or neutral on this issue once the trail is in operation³.

Liability Protections

As sovereign entities, local governments and Tribes are protected by additional limitations or liability for injuries occurring on government-owned property. For private or other public landowners, liability protection beyond that

² Rails-to-Trails Conservancy. (1998). Rail-Trails and Safe Communities: The Experience of 372 Trails.

³ American Trails. (2000). Trail Effects on Neighborhoods: Home Value, Safety, Quality of Life. Eling, Tim. (2006). Crime, Property Values, Trail Opposition & Liability Issues. Murphy, Michelle Miller. (1992). The Impact of the Brush Creek Trail on Property Values and Crime; Santa Rosa, CA.

provided by the statutes and insurance described below can be afforded by transference of trail ownership to a trail owning/managing agency. Private landowners who grant/sell a public easement to a public entity for a trail or whose property is located adjacent to a public trail are not at risk as long as they abstain from “willful and wanton misconduct” against trespassers, such as recklessly or intentionally creating a hazard. As an alternative to a trail easement, a private landowner could potentially transfer fee ownership of the property containing the public trail to a public entity (subject to property subdivision regulations). This and other mechanisms for granting access and transferring liability are discussed in the section on Property Access.

1.3 Liability Laws and Statutes

This section addresses existing laws and statutes and insurance strategies that address liability and protect trail managers and adjoining and underlying landowners.

1.3.1 Protections Provided to Private Landowners

According to ordinary principles of negligence law, landowners are, in general, liable for injuries sustained by others on their property (Cal. Civ. Code § 1714 (a)). However, the public statutes listed below provide broad protection to private landowners who allow the public to use their land for recreational purposes:

- California Recreational Use Statute (California RUS) (Cal.Civ.Code § 846)
- California Recreational Trails Act (Cal.Pub.Res.Code § 5070 et seq.)

Table BI-1 provides a summary of the legal protections relevant to recreational trails available public entities, private landowners and adjacent landowners.

Table B1-1: Legal Protections Associated with Trails

Type of Protection	Entity Protected		
	Public Entity	Private Landowner of property containing a trail segment	Adjacent Landowner to property containing a trail segment
Tort Claims Act	Yes	No	No
California Recreational Use Statute	Some ¹	Yes	No
California Recreational Trails Act	No	Yes	Yes
Insurance	Yes	Yes	Yes

¹ Cal. Civ. Code § 846.1 allows a public entity to present a claim for reasonable attorney’s fees in certain circumstances.

California Recreational Use Statute

The California Recreational Use Statute (RUS) protects private landowners who allow the public to use their land for recreational purposes (provided they do not charge a fee). A person injured on land made available to the public for recreational use must prove that the landowner deliberately intended to harm him or her. The California RUS is intended to limit landowners’ liability to encourage them to make their land available for public recreation.

As specified in the California RUS, a recreational purpose includes such activities as fishing, hunting, camping, water sports, hiking, spelunking, sport parachuting, riding, including animal riding, snowmobiling, and all other types of vehicular riding, rock collecting, sightseeing, picnicking, nature study, nature contacting, recreational gardening, gleanng, hang gliding, winter sports and viewing or enjoying historical, archaeological, scenic, natural or scientific sites. For statutory protection to apply, the injured party must have entered the land for recreational purposes. If the party who was injured entered the land for purposes other than recreational, the statute’s protection will not apply.

There are three circumstances for which the California RUS does not apply. Statutory immunity will not apply if the landowner commits a willful or malicious failure to warn or guard against dangerous condition, charges a fee to use their property or extends an express invitation to the injured party to use their property. As long as landowners do not engage in any of these three circumstances, they may be confident they will not be held responsible for an injury sustained by others on their property who entered for a recreational purpose.

In addition to placing limits on liability, the California RUS allows landowners or others with an interest in real property to present a claim for reasonable attorney’s fees (within limits) in certain circumstances. Landowners who have given permission to the public to enter their land pursuant to an agreement with a public or nonprofit agency for purposes of recreational trail use may present a claim for reasonable attorney’s fees when a civil action is

brought against them by a person who alleges to have sustained an injury or property damage while on their land (Cal. Civ. Code § 846.1).

California Recreational Trails Act

The 1974 California Recreational Trails Act aimed to “encourage hiking, horseback riding, and bicycling as important contributions to the health and welfare of the state’s population” (Cal. Pub. Res. Code § 5070.5). The State has recognized 26 different trail corridors as part of the Recreational Trail Act.

The Recreational Trails Act provides liability protection for landowners adjacent to trails designated as part of the California Recreation Trail system as follows:

“No adjoining property owner is liable for any actions of any type resulting from, or caused by, trail users trespassing on adjoining property, and no adjoining property owner is liable for any actions of any type started on, or taking place within, the boundaries of the trail arising out of the activities of other parties” (Cal. Pub. Res. Code §5075.4).

1.3.2 Protections Provided to Public Entities

In California, the following laws and statutes apply to public entities:

- California Tort Claims Act (Cal.Gov’t Code §810-996.6 et seq.)
- California Recreational Use Statute (RUS) (Cal.Civ.Code §846.1)

A public agency could hold an easement over the trail to take responsibility for the trail; thus these protections are relevant to an underlying property owner.

California Tort Claims Act

California’s Tort Claims Act provides public entities and their employees broad immunity from lawsuits similar to the protections provided by the California RUS. The Tort Claims Act provides that public entities cannot be sued under common law or generally applicable principles of tort law or negligence (e.g., Cal. Civ. Code §1714). In order for a public entity to be held liable for an injury, the injury must have been caused by a dangerous condition of their property (Gov. Code §835). A dangerous condition is defined as “a condition of property that creates substantial (as distinguished from minor, trivial or insignificant) risk of injury when such property or adjacent property is used with due care in a manner in which it is reasonably foreseeable that it will be used” (Gov. Code §830).

The California Tort Claims Act protects public entities, public employees and persons granting a public easement to a public entity from liability for an injury caused by a minor hazard associated with the condition of a trail (paved or unpaved) and some unpaved roads. The trail or unpaved road must be used for access to recreational or scenic areas, fishing, hunting, camping, hiking, riding (including animal and all types of vehicular riding) and water sports. In order for this statute to apply, the public entity must “reasonably attempt to provide adequate warnings” of the existence of any condition along a paved trail that constitutes a hazard to health or safety (Gov. Code §831.4). Warnings are not required along unpaved trails or roads.

The California Tort Claims Act includes specific protections for hazardous recreational activities (Gov. Code §831.7). The Act states that public entities and public employees are generally not liable to any person who

While landowners have a duty to exercise reasonable care on their premises to avoid unreasonable risk or harm to others on adjacent properties, state-enacted Recreational Use Statutes potentially offset some or all of a local jurisdiction’s or landowner’s increased liability associated with a trail.

participates in a hazardous recreational activity conducted on their property. As defined by the Act, hazardous recreational activities include animal riding, boating, biking on unpaved surfaces, windsurfing and water contact activities under certain conditions. In order for the statute to limit liability, public entities or their employees must guard or warn of known dangerous conditions and properly construct and maintain facilities. Liability is not limited if the public entity is paid a specific fee (that is, fees other than general park admission fees, vehicle entry or parking fees or group use permit fees) for granting permission to engage in a hazardous recreation activity on their land.

California Recreational Use Statute

The California RUS provides limited liability protection for public entities. Under California RUS, a public entity can present a claim for reasonable attorney's fees in certain circumstances. In order to receive reimbursement for attorney's fees incurred in a civil action, one of the following must occur: the court must dismiss the civil action, the plaintiff must dismiss the civil action without any payment from the public entity or the public entity must prevail in the civil action (Cal. Civ. Code §846.1). The California Tort Claims Act provides additional liability protections for public entities managing recreational trails.

1.3.3 Insurance

Though existing laws and statutes may protect against a successful lawsuit, these safeguards do not prohibit a liability suit from being filed. For this reason, private landowners and public entities should maintain some level of general liability insurance that can be used for defending against such suits.

The person or entity responsible for maintaining the trail is most vulnerable to a lawsuit should an injury occur. Most trails are owned and operated by a public entity. In such cases, the responsible entity most often is self-insured or covered by an umbrella insurance policy that protects agency activities and facilities. Other trails are owned by non-governmental organizations. In this case, the organization should purchase a comprehensive liability insurance policy. In addition to liability insurance, non-governmental organization may wish to carry workman's compensation insurance if they have any employees and volunteer workers, and insurance to protect any equipment the group may own from vandalism, theft, or fire.

1.4 Operation and Maintenance

Successful and sustainable trail operation, maintenance, and promoting responsible usage, can be achieved by a number of techniques available to trail managers to ensure safety, functionality, protect private property and guard against trespass, vandalism and lawsuits.

1.4.1 Challenges

Funding and human resources for initial and ongoing operation, management, and maintenance of a trail, and any other public facility tends to be an even greater challenge than finding the means for construction. It is anticipated that Caltrans or Mendocino County will be responsible for operation and maintenance of bike, pedestrian or trail improvements within its respective right of way, but these agencies do not necessarily have the funds, staff, and organizational plans and arrangements to accomplish this. Additionally, who will be responsible for maintenance

and operation of trail systems on private or Tribal land needs to be resolved. Clearly the Tribe has jurisdiction over their lands and would be the logical operator; however, they may require assistance. Most trail-owning agencies depend on a combination of staff, volunteers, local law enforcement, partnering entities and/or landowners to identify and address operations and maintenance issues.

1.4.2 Solutions

Prevention of unsafe conditions is the best approach to maintaining public safety. A policy and practice for trail maintenance and use management is perhaps the best defense a trail manager has to protect public safety and guard against undue injury-related lawsuits. Implementation of a user education program and responsive maintenance and management will be paramount in creating safe trail conditions. Posting trail rules and the reasoning behind them is an effective way to reinforce safe behavior. Peer pressure to abide by the rules is key to successful trail operation and maintenance.

Possible operation and maintenance strategies to improve public safety and mitigate liability include:

- **Implementation of a Safety Program.** The trail management partners should implement a safety program that includes systematic risk management assessment, cooperative design review for proposed improvements, and coordinated accident and crime reporting and response. In addition to managers, planners, designers and engineers, Tribal police, county sheriff and fire/rescue and field maintenance personnel should be consulted in the design and review process.
- **Implementation of an Emergency Response Protocol.** The management entities should implement an emergency response protocol working with law enforcement, EMS agencies, and fire and rescue departments that includes mapping of trail and open space access points, design of trails and access roads (to accommodate loads up to 6.5 tons), an “address system” such as mile markers to identify locations and, where appropriate, 911 emergency phones in remote areas.
- **Operations and Maintenance (O&M) Plan.** Partners responsible for implementation of any specific trail plan should develop an O&M Plan; a schedule of maintenance and management tasks and responsible parties, along with associated costs. Funds and resources for the O & M Plan should be specifically committed, and ideally funded through an endowment that guarantees they will be available in the long term.
- **Implementation of a User Education Program.** The management partners should implement a user education program reaching out to key user groups, such as communities, groups and clubs, to teach safe trail behavior and conflict prevention.
- **Conducting Routine Trail Inspections.** The management partners should routinely inspect for safety hazards, defective structures, missing safety signs, etc. A key part of this oversight is maintaining contacts with neighboring property owners, residents and businesses, and being responsive to their concerns. A



A policy and practice for trail maintenance and use management is perhaps the best defense a trail manager has to protect public safety and guard against undue injury-related lawsuits.

properly trained and coordinated volunteer trail patrol/docent staff is used by many regional and local trail agencies to supplement the work of limited paid staff on inspections and routine contacts.

- **Posting and Enforcing Safe Trail Behavior.** The management partners should post and enforce safe user behavior and pathway speed limits (in congested and high risk areas). Again, trained and coordinated volunteers can be key to success in providing information and enforcement.
- **Regular Trail Patrol and Maintenance.** The trail will require maintenance to address deterioration due to weather or general use. Patrol and maintenance will be required to prevent and address potential problems such as damage to signs, litter, and graffiti; travel at unsafe speeds; mismanaged pets; or unauthorized motor vehicles on the trail. The management partners should trim trees, bushes, tall grasses, etc. to address clearance, fire safety and sight distance issues. Control of litter and maintenance of the trail surface, signs, fences and gates are regularly required. Maintenance and management activities will require staff, equipment, and the associated funding. Each trail segment or project should have a specific operation and maintenance plan that identifies tasks, responsible parties, sources of funding and support. Volunteers can play a big role in trail monitoring and maintenance, provided there is overall on-going oversight and coordination.

1.5 Property Access

1.5.1 Challenges

A significant challenge to trail planning and implementation is obtaining land or permission to use land to build the trail through private areas, or other public land that is not open for public access. This section discusses mechanisms whereby trail access could be legally acquired or granted. The sponsors of the Study do not support the use of eminent domain; and would work only through willing-seller options to gain property access.

1.5.2 Potential Solutions

Lead agencies or organizations seeking to implement a trail on private land or another agency's land have several options to gain access to the portion of the property needed for the trail. These options include trail dedications, fee purchase, easement, license, memoranda of understanding, bargain sale and donation. They offer a range of conditions for control of the land and assumed liability.

Lead agencies seeking to implement a trail on another property owners land typically have four options in gaining access to the property needed for the trail:

1. *Fee Purchase*
2. *Easement*
3. *License*
4. *Memorandum of Understanding*

Fee Purchase

Public agencies may purchase a parcel of land (fee title) for a trail. Fee purchase of the land gives the buyer clear title to the property. It provides the simplest, and sometimes the most feasible approach toward acquiring access to land. Trail and greenway lands are often marginally developable and unsuitable for most development activity. The liability of these lands from a real estate tax perspective creates an opportunity for some developers to reduce their tax burden by selling or deeding the property to an agency for a trail.

Some agencies or nonprofits, particularly land trusts, will purchase a parcel of land to retain conservation and trail easement, and then sell it to provide parties for compatible uses – usually agriculture.

Easement

Easements provide the general public with the right to use a specific parcel of property, usually through a defined corridor. Easements come in variety of forms that all involve the landowner's willingness to allow the use of a portion of their property and/or forego development rights for an agreed upon timeframe. Under most circumstances, landowners relinquish liability and management of that portion of the property and the public agency purchases the right to construct and maintain the trail on the property or a portion of the property. Easements are a more affordable option than fee purchase. They typically “run with the land,” meaning the easement stands regardless of a change in ownership.

As part of a development permitting process, an agency may require developers to dedicate an easement for recreational trails and parks. Dedications may be included as conditions of approval of the development.

Bargain Sale

A property owner may sell property or an easement at a price less than the appraised fair market value of the land or easement. Sometimes the seller can derive the same benefits as if the property were donated. Bargain sales are attractive to sellers when the seller wants cash for the property, the seller paid a low cash price and thus is not liable for high capital gains tax, and/or the seller has fairly high current income and could benefit from a donation of the property as an income tax deduction. The lost capital gain, which is the appraised value less the sales price, is taken as a tax deduction.

License

A license is usually a fixed-term agreement that provides limited rights to the licensee for use of the property. Typically, these are employed in situations when the property cannot be sold (e.g. a publicly-owned, active electrical utility corridor), or the owner wants to retain use of and everyday control over the property. The trail management authority obtains permission to build and operate a trail; however, it will have little control over the property and may be subject to some stringent requirements that complicate trail development and operation. As with easement agreements, property owners would want a license agreement to address issues on their side. Through cooperative negotiation issues such as access for maintenance, trail management, and future improvements or modifications of the trail can be addressed.

Memoranda of Understanding

Memoranda of Understanding (MOU) are agreements between multiple entities to delegate trail management and/or maintenance duties. MOUs are legally binding on the agreeing entities to carry out their duties in good faith. Entities involved in these agreements may include public, private, non-profit or any other interested party. One such example is a public utilities commission entering into a MOU with a local jurisdiction to develop a trail along the utility corridor as was done by the San Francisco Public Utilities Commission and the County of San Mateo.

Donation

Donations typically include full transfer of property to an agency or non-profit for a specific use or purpose that may be simple or complicated by extensive conditions. Financial incentives in the form of tax credits are available

in most cases. The receiving entity agrees to receive title to a parcel of land or easement at virtually no cost. In most cases, the donor is eligible to receive federal and state deductions on personal income, as describe under bargain sales. In addition, property owners may be able to avoid inheritance taxes, capital gains taxes, and recurring property taxes.

1.6 Agriculture and Other Land Use Conflicts

1.6.1 Challenges

Another challenge to property access for a trail is potential conflict with current land use or activity. Some land uses and features may be constraints for trail location, such as adjacent residences, agricultural operations, and industrial or public works facilities that could present a hazard.

Careful land use study is critical as part of trail alignment planning to identify conflict areas and avoid conflicts through trail alignment, design or operation. An early step should be contact and coordination with the land owners to understand all the facilities and activities that may be constraints for the trail.

A concern often raised in relation to trails in rural areas is potential impact on agriculture. Specific issues often raised include:

- Impact on farm operations
- Theft or vandalism
- Loss of farm land
- Liability related to spraying and trespassing
- Spread of invasive species or pathogens

Trails and agriculture can coexist, as demonstrated throughout Europe and in many parts of the United States, but this requires understanding and responding to farming operations and methods to reduce or mitigate impacts, and actions to address and ally the specific concerns of farmers.

1.6.2 Potential Solutions

The alignment of a trail at the edge of productive agricultural land can result in several desirable outcomes. First, the trail or open space provides a buffer between the agricultural operation and more densely populated residential areas. This buffer can help to reduce edge conflicts by ensuring residential areas and productive agricultural lands do not share a common fence line. Secondly, the presence of the trail along agricultural acreage provides educational opportunities for non-farming residents who may otherwise have limited understanding or appreciation of agricultural operations. This exposure to agricultural production may facilitate community and political support for agricultural land preservation or productivity initiatives, as residents realize the important role



Trails and agriculture can coexist, but this requires an understanding of farming operations and methods to reduce or mitigate impacts.

agriculture plays in their lives and in the life of their community. Finally, allowing the construction of a trail on agricultural land may present a financial opportunity for the landowner through compensation and/or tax deductions for the donation, below market sale, market rate sale of land, or an easement.

Impact on Farm Operations

Trail location, design, operation and management can support safe and considerate trail use practices and provide a diminished risk of injury, reducing the risk of liability claims. Some of the most significant features of a trail are inherent in the alignment itself. The distance a trail is set back from crops takes into account typical farm practices. For example, providing room for farm equipment to maneuver without nearing the trail reduces potential conflicts between trail users and farming practices.

Dogs on trails near cattle and other livestock may impact operations. Trail design and regulations can be used to mitigate potential problems. For example, dogs should be required to be on leash at all times so they do not chase cattle. Special fencing separating the trail from the livestock can also improve the situation. Though access for dogs is extremely popular, there may be locations where dogs must be prohibited on the trail.

Theft and Vandalism

The theft of produce is a significant concern of the agricultural community. Like other security issues, this problem is not directly related to trail use, and “daylighting” the area with significant public use could actually reduce theft. To reinforce efforts to prevent theft, trail managing agencies have provided fencing, signage reflecting laws and penalties, public information and trail patrol.

A study done by the Rails to Trails Conservancy found rural trails have incidents of crime at much lower rates per population than suburban and urban trails.⁴ In fact, trails can provide additional “eyes” for the agricultural community and can be regarded as an improvement because they bring local community members and families to the area. In many areas of the United States and around the world, trails peacefully coexist with agriculture without significant issues.

Loss of Farm Land

Agricultural land is an important part of the Round Valley region. Agriculture is important to the local economy and supplies crops for California and the United States. The project sponsors do not support taking agricultural lands out of production. Trail access does not require a significant amount of land, and often can be incorporated into boundary and border areas where there is minimal impact on usable agricultural land. Also, the purchase of a portion of land or an easement can provide vital cash to an agricultural owner that would otherwise not be available without ceasing agricultural operations.

Spraying

Typical farming practices such as spraying that may conflict with trail access can be addressed in several ways. First, trail users may be provided with adequate warning about the risks they are assuming. For example, in order to prevent nuisance claims triggered by the spraying of pesticides, warning signs and a spraying schedule may be posted at trailheads and along the trail to notify trail users of the risks associated with trail use. Case law

⁴ Rails to Trails Conservancy, “Rail- Trails and Safe Communities,” 1998.

pertaining to the RUS includes a finding that warning signs are sufficient to show the absence of willful or malicious conduct on part of the land owner.⁵ Sonoma County Regional Parks Department manages the 13 mile West County Trail adjacent to vineyards and did not receive complaints about conflicts between trail users and vineyard owners who sprayed grapes.⁶

Additionally, trails can be closed during periods of spraying and during other agricultural operations. This can be part of an easement or other access arrangement or solely due to operations. In some cases, this is accomplished by gates and signs controlled by the farmer.

Spread of Invasive Species

Many habitats in California have become dominated by non-native species. Many of these non-native species are known as “invasive” species, so-named because they rapidly colonize new areas and cause harm to the native species, agricultural crops or livestock that are present. Some species are deliberately introduced because they are thought to have value for wildlife, horticulture, or agriculture; others are accidentally transferred by vehicles and landscaping equipments. Trails can become avenues of introduction and spread when invasive species, whether seeds or insects, are carried in or on animals, vehicles, bicycle tires, shoes, boats, commercial goods, produce or clothing of trail users.

Each county’s Department of Agriculture works with local agencies and park districts to manage invasive species. In addition to weed seeds and insects, agricultural representatives are concerned about pathogens that can be carried into the fields from the outside. In addition to the potential direct impacts, farmers need to be able to assure their buyers that the growing conditions of their fields are safe from outside contaminants.

Spread of invasive species along trails can be mitigated in the following ways:

- Further research and coordination with the Farm Bureaus, County Agriculture Committees, and agricultural advisory agencies should be undertaken as an early part of detailed trail planning to identify specific issues and potential solutions, including conditions where trails may not be compatible with agriculture, or are feasible only under specific controlled conditions.
- Trails should be kept clear of invasive species and known infected areas should be monitored and maintained.
- Equipment, such as mowers, should be cleaned before leaving the immediate area to prevent spread of any invasive species. This includes water equipment as well as there is the potential for transfer of aquatic organisms on boats, jet skis and other watercraft.
- Train maintenance staff and volunteers to recognize invasive species.
- Vehicles, such as trail maintenance, Caltrans, and PG&E trucks, should be cleaned before leaving the immediate area.
- Encourage collaboration with the public to help identify invasive species. Organizations such as native plant societies or the Sierra Club may help with identification.

⁵ California Recreational Trail Use Statute and Liability Handbook (Bay Area Ridge Trail Council, 1998).

⁶ Sonoma County Draft Outdoor Recreation Plan 2003 Appendix 6.

- Educational signage should be used to inform trail users of both native and invasive species. An aware public can help identify potential problem areas. Additionally, the signage can add agricultural value to the trail.

1.7 Environmental Resources

1.7.1 Challenges

Round Valley includes natural and cultural resources that may constrain trail siting and alignment. Natural resources include natural habitat, special status and protected status species, unique and protected landforms, significant trees, designated wildlife and habitat protection areas and mitigation sites. Cultural resources include historic buildings and structures, historic districts, historic sites, culturally sacred sites, prehistoric and historic archaeological sites, and other prehistoric and historic objects and artifacts. Scenic resources may also fall into this category.

While some trail projects can include benefits to natural resources, it is important to balance trail use with preservation.

Natural and cultural resources can be a significant constraint to planning and implementing a trail. Environmental review for trail projects is required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). These require projects be analyzed for potential impacts to cultural and historic resources. The requirements include a review by the State Historic Preservation Office (SHPO) for any known significant historic artifacts. The process may also involve obtaining a number of permits from resource management agencies including the California Department of Fish and Wildlife, the California Water Resources Control Board, the U.S. Army Corps of Engineers (where waterways are affected), the U.S. Fish and Wildlife Service (often through consultation with the Army Corps of Engineers).

The development of a trail system can have adverse impacts on natural resources. Examples include temporary or short term disturbances to the foraging behavior of wildlife and longer term, less predictable changes to the overall ecological health of critical habitat and native ecosystems.

Trails are often sited near wetlands, riparian, and other biological rich habitats. When people and their pets stray from trails, native plant habitat can be trampled or picked, soils can be compacted, and conditions can be created that favor non-native weeds and other invasive species. Habitat or vegetation that has been modified or removed during the building of a trail may no longer be available for wildlife and create conditions more prone to flooding, erosion, and wildfire.



Natural features, such as Mill Creek, can present challenges for trail planning and implementation.

The introduction of invasive, non-native plants and animals, as discussed in the Agricultural Resources section, is also a threat to natural resources. The harm is generally caused because the invasive species take over the habitat, significantly reducing the diversity of species present and significantly reducing or eliminating the presence of

native species. Some invasive non-native plant species are actually damaging to native wildlife that attempt to feed on or otherwise use the plants.

Trail construction and use could directly or indirectly impact cultural resources. New facilities and changes in land use that affect use patterns or intensify use could impact resources that are important to the entire Delta and beyond through overuse or during construction or maintenance. When a resource is subsurface, it is possible that construction work could damage the resource before crews are aware that the resource is present.

Numerous federal and state agencies oversee natural and cultural resource protection. Coordination with all applicable federal and state agencies will be necessary to ensure that the environmental protections each agency oversees are met.

1.7.2 Potential Solutions

Trail projects will be subject to environmental review, as required by the California Environmental Quality Act (CEQA) and, where federal jurisdiction is involved, the National Environmental Policy Act (NEPA). Environmental review includes assessment of potential impacts to biological, cultural, and historic resources, including review by the State Historic Preservation Office (SHPO) for any known significant historic artifacts. Where feasible, CEQA and NEPA require mitigation of any potentially significant impact to a less than significant level. The trail planning process may also require issuance of permits from resource management agencies including the California Department of Fish and Wildlife, the California Water Resources Control Board, the U.S. Army Corps of Engineers (where waterways are affected), and the U.S. Fish and Wildlife Service (often through consultation with the Army Corps of Engineers).

When planning and designing a trail system, several techniques can be employed to avoid or largely mitigate potential negative impacts on natural and cultural resources. Methods such as ecological restoration and promoting public awareness help to compensate for negative effects, while improving natural and cultural landscapes.

Natural resource conservation relies on an understanding and mapping of the locations and extent of geographic constraints and sensitive and critical biological habitats. Areas with known constraints can then be protected through avoidance or by applying conservation policies and standards to development that may otherwise result in significant adverse effects. Coupling trail projects in environmentally sensitive areas with mitigation efforts can help to offset negative impacts to natural resources. Mitigation measures include habitat restoration, erosion control, debris removal, and water quality enhancements. For example, in the Lake Tahoe Basin, new trail segments include drainage systems to divert sediment from the lake. A new trail in Marin County will include removal of a railroad trestle contaminated with creosote from a wetland. In addition, new trail projects are often combined with the acquisition of land or easements, which also serve to protect natural resources.

While some trail projects include benefits to natural resources, it is important to balance trail use with preservation. Early trail planning should identify and consider areas that have significant environmental constraints. Using GIS to map natural resources, including streams, rivers, floodplains, Streamside Management Areas, and National Wetland Inventory wetlands, aids in the identification of environmentally sensitive areas. Additional resources include the U.S. Fish and Wildlife Service's Endangered Species Program and the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDDB).

The California Historical Resources Inventory System (CHRIS) is an important data source for cultural resource location identification. The Northwest Information Center at Sonoma State University maintains these records for Mendocino County.

Once the locations of cultural resources are identified, or if the trail is being studied through an area that has not been previously disturbed, a consulting archeologist should be hired to determine their significance or cultural importance. Based on the locations and significance of cultural resources, the trail alignment should be charted to avoid negative impacts on these areas. Although avoidance is the preferred option, mitigation should be considered in cases with alignment constraints. Mitigation techniques for impacts on cultural resources are purposely left undefined by state agencies. If it is determined that cultural resources will be adversely impacted, it is often imperative to involve the affected parties directly and solicit their input. Native Americans could have specific cultural or spiritual concerns which cannot be addressed through a standardized environmental evaluation process.

Provided negative impacts are avoided or mitigated, trail projects can also be complementary to cultural resource areas, trails can create awareness of the importance of these areas, as well as foster public stewardship. This can be achieved by providing public access to similar sites, enriched with interpretive signage and kiosks explaining the cultural and historic significance of the area.

Appendix C: Improvement Cost Estimates

January 8, 2014



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Appendix C: Improvements Cost Estimates

This Appendix presents the detailed planning-level cost estimates prepared for the recommended improvements, including planning, design, construction, and other anticipated implementation costs. These cost estimates required numerous assumptions about the methods of construction and associated requirements. The estimate and assumptions reflect the experience of the consultant team with other similar projects.

These estimates are based upon conceptual designs and are to be used for planning purposes only. The scope of each segment estimate is defined by station points or by distances from intersections as detailed in each estimate's table.

Table C- 1 presents the unit costs for the various trail, staging area, and drainage crossing improvements that were used to create the preliminary cost estimates.

The summary (Table C- 2) and detailed segment estimates (Table C-3 through Table C-) include cost “placeholders” for each stage of project implementation, based on factors of the construction cost, including:

- Construction overhead (costs the contract typically includes over and above the individual work items – calculated as a percentage of the total project cost):
 - Mobilization – 5%
 - General conditions, bonds, and insurance – 2%
 - Erosion control, including all BMPs, SWPPP and reporting – 5%
 - Traffic control – 10%
- Implementation:
 - Survey, technical studies (such as geotechnical or hazardous waste investigations) and design (including preliminary and final plans, cost estimates, and specifications/bid forms) – 20%
 - Environmental analysis and documentation and related permits (percentage varies per segment based upon existing conditions and scope of proposed changes) – 5% to 10%
 - Mitigation (percentage varies per segment based upon existing conditions and scope of proposed changes) – 2-3%
 - Construction engineering – 15%

A contingency for the level of accuracy of the estimate is included at 20% of all items.

If small improvement projects are undertaken separately, the costs may potentially increase significantly from the design, administration, and construction cost factors in the estimates. In any case, actual costs for the projects can only be determined following development of more complete and detailed base information and definition of the specific improvements for design, environmental review and permitting, and construction.

The estimates include right-of-way acquisition, where necessary for the trail alignment. This would be strictly on a willing seller basis. The estimates include an approximate area of right-of-way required, and a “placeholder” cost of \$2.00 per square foot for acquisition, which reflects the acquisition cost estimate from the recent Caltrans SR 162 Improvements PSR. Actual right-of-way costs would be subject to negotiation. Right-of-way acquisition costs are not estimated for trails occupying Tribal land, as the Tribes have made these trails a priority project of their own. It is assumed that an easement would be granted by the Tribes to a public agency to formalize the trail as a public facility, as discussed in Chapter 6, Implementation Steps.

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Table C- 1 Unit Costs

Item & Assumptions	Unit	Unit Cost
Mobilization - maximum of 5% of total bid price	ALLOW	5.00%
General Conditions, Bonds and Insurance	ALLOW	2.00%
Erosion Control - includes all BMPs, SWPPP and Supply QSP	ALLOW	5.00%
Traffic Control	ALLOW	10.00%
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.		
Sawcut pavement	LF	\$5.00
Remove AC pavement	SF	\$0.25
Remove concrete pavement	SF	\$0.25
Remove Fence	LF	\$10.00
Earthwork		
Clearing and Grubbing	SF	\$0.25
Excavation and Grading	CY	\$18.00
Embankment, Import Borrow	CY	\$30.00
Soil for new landscape areas	CY	\$10.00
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail		
Construct curb & gutter	LF	\$24.00
Construct AC curb	LF	\$12.00
Construct 4" PCC sidewalk - 6' wide	SF	\$8.00
Construct AC Path - 5' to 10' wide	Ton	\$150.00
Construct new inlet to existing storm drain	EA	\$2,000.00
Aggregate Base and Shoulder Rock	CY	\$50.00
Curb Ramp with truncated dome surface	EA	\$1,400.00
Decorative pavers for curb extensions	SF	\$15.00
Colored stamped asphalt or concrete	SF	\$15.00
Planting		
24" box trees with root barriers, tree grates, and irrigation	EA	\$2,200.00
15 gallon trees with protective posts and root barriers - to be "adopted"	EA	\$1,600.00
1 gallon shrub w/groundcover planting	SF	\$2.50
Irrigation meter/connection, backflow, and controller	EA	\$15,000.00
Site Furnishings		
Benches (bench, footings)	EA	\$1,000.00
Pedestrian Light Type 1 (streetlamp style, placed near intersections)	EA	\$6,000.00
Pedestrian Light Type 2 (along AC path on Howard)	EA	\$2,000.00
Chainlink Fence - 4' vinyl coated	LF	\$25.00
Timber barrier/wheel stop 8'x8"x8"	EA	\$50.00
R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	LF	\$20.00
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.		
High visibility crosswalk	EA	\$1,750.00
Repaint stop bars and markings	LS	\$1,000.00
Painted pedestrian walkway - per 30' with associated signage	EA	\$1,060.00
Bike lane striping and signage	MI	\$10,000.00
HAWK/RRFB	EA	\$4,000.00

Table C- 2: Segment Summaries
COVELO/ROUND VALLEY NON-MOTORIZED TRANSPORTATION PLAN
TOTAL COSTS FOR EACH PROJECT AREA
 PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013
 REVIEWED BY: RA - Alta PREPARED BY: JP - Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

Description		Totals
Howard at 162	Construction	\$502,000
Survey, design, environmental, admin and contingency	67.5%	\$338,850
	Total	\$841,000
162 at Greely	Construction	\$91,000
Survey, design, environmental, admin and contingency	67.5%	\$61,425
	Total	\$153,000
162 at Eberle	Construction	\$104,000
Survey, design, environmental, admin and contingency	67.5%	\$70,200
	Total	\$175,000
Southern SR162	Construction	\$102,000
Survey, design, environmental, admin and contingency	67.5%	\$68,850
	Total	\$171,000
Howard at Main	Construction	\$446,000
Survey, design, environmental, admin and contingency	67.5%	\$301,050
	Total	\$748,000
Howard Street at Airport Road	Construction	\$466,000
Survey, design, environmental, admin and contingency	67.5%	\$314,550
	Total	\$781,000
Foothill Boulevard	Construction	\$178,000
Survey, design, environmental, admin and contingency	67.5%	\$120,150
	Total	\$299,000
SR 126 - North of Howard Street Intersection to East Lane	Construction	\$107,787
Survey, design, environmental, admin and contingency	67.5%	\$72,756
Right-of-Way	0	\$0
	Total	\$181,000
East - West Trail	Construction	\$124,275
Survey, design, environmental, admin and contingency	68%	\$83,886
Right-of-Way	0	\$0
	Total	\$209,000
SR 162 - East Lane to Cultural Performance Grounds - 4 Sub-segments - Station 0+00 to 20+15		
SR 162 - East Lane to Cultural Performance Grounds - Sub-segment 1 of 4 - Station 0+00 to 1+61 (161FT)	Construction	\$23,058
Survey, design, environmental, admin and contingency	60%	\$13,835
Right-of-Way	3,250	\$6,500
	Total	\$44,000
SR 162 - East Lane to Cultural Performance Grounds - Sub-segment 2 of 4 - Station 1+61 to 3+08 (147FT)	Construction	\$28,487
Survey, design, environmental, admin and contingency	63%	\$17,804
Right-of-Way	3,650	\$7,300
	Total	\$54,000
SR 162 - East Lane to Cultural Performance Grounds - Sub-segment 3 of 4 - Station 3+08 - 13+73 (1065FT)	Construction	\$134,435
Survey, design, environmental, admin and contingency	68%	\$90,744
Right-of-Way	0	\$0
	Total	\$226,000
SR 162 - East Lane to Cultural Performance Grounds - Sub-segment 4 of 4 - Station 13+73 to 20+15 (642FT)	Construction	\$134,640
Survey, design, environmental, admin and contingency	68%	\$90,882
Right-of-Way	0	\$0
	Total	\$226,000
SR 162 - East Lane to Cultural Performance Grounds - Total Segment - Station 0+00 to 20+15		\$550,000
Includes allowance for right-of-way acquisition	\$13,800	
SR 162 - Cultural Performance Grounds to Biggar Lane - Station 20+15 to 53+28 (3269FT)	Construction	\$445,368
Survey, design, environmental, admin and contingency	68%	\$300,624
Right-of-Way	14,685	\$29,370
	Total	\$776,000

Description		Totals
SR 162 - Biggar Lane to Hurt Road - 5 Sub-segments - Station 53+28 to 79+81		
SR 162 - Biggar Lane to Hurt Road - Sub-segment 1 of 5 - Station 53+28 to 56+86 (358FT)	Construction	\$57,799
Survey, design, environmental, admin and contingency	68%	\$39,014
Right-of-Way	0	\$0
	Total	\$97,000
SR 162 - Biggar Lane to Hurt Road - Sub-segment 2 of 5 - Station 56+86 to 60+07 (321 FT)	Construction	\$303,779
Survey, design, environmental, admin and contingency	68%	\$205,051
Right-of-Way	5,476	\$10,952
	Total	\$520,000
SR 162 - Biggar Lane to Hurt Road - Sub-segment 3 of 5 - Station 60+07 to 66+67 (660 FT)	Construction	\$106,298
Survey, design, environmental, admin and contingency	68%	\$71,751
Right-of-Way	0	\$0
	Total	\$179,000
SR 162 - Biggar Lane to Hurt Road - Sub-segment 4 of 5 - Station 66+67 to 71+71 (504 FT)	Construction	\$71,549
Survey, design, environmental, admin and contingency	68%	\$48,296
Right-of-Way	0	\$0
	Total	\$120,000
SR 162 - Biggar Lane to Hurt Road - Sub-segment 5 of 5 - Station 71+88 to 79+81 (793 FT)	Construction	\$102,090
Survey, design, environmental, admin and contingency	68%	\$68,910
Right-of-Way	18,752	\$37,504
	Total	\$209,000
SR 162 - Biggar Lane to Hurt Road - Total Segment - Station 53+28 to 79+81		\$1,125,000
Includes allowance for right-of-way acquisition	\$48,456	
Total for all segments		\$5,228,000

Table C- 3: State Route 162 - Howard Intersection

Including curb extensions at the north end of intersection and improvements 290' south of intersection

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP - Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$12,269.86	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$4,907.94	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$12,269.86	
4	Traffic Control	1	LS	10.00%	\$24,539.72	
	Sub-total					\$53,987.39
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	889	LF	\$5.00	\$4,445.00	
5.2	Remove AC pavement	6118	SF	\$0.25	\$1,529.50	
5.3	Remove concrete pavement	2221	SF	\$0.25	\$555.25	
	Sub-total					\$6,529.75
6	Earthwork					
6.1	Clearing and Grubbing	5,055	SF	\$0.25	\$1,263.75	
6.2	Excavation and Grading	124.8148	CY	\$18.00	\$2,246.67	
6.3	Embankment, Import Borrow	0	CY	\$30.00	\$0.00	
6.4	Soil for new landscape areas	94	CY	\$10.00	\$936.11	
	Sub-total					\$4,446.53
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	848	LF	\$24.00	\$20,352.00	
7.2	Construct AC curb	0	LF	\$12.00	\$0.00	
7.3	Construct 4" PCC sidewalk	2450	SF	\$8.00	\$19,600.00	
7.4	Construct AC Path - 5' to 10' wide	0	Ton	\$150.00	\$0.00	
7.5	Construct new inlet to existing storm drain	2	EA	\$2,000.00	\$4,000.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	8	EA	\$1,400.00	\$11,200.00	
7.8	Curb extension with decorative pavers	4540	SF	\$15.00	\$68,100.00	
7.9	Colored stamped asphalt or concrete	2605	SF	\$15.00	\$39,075.00	
	Sub-total					\$162,377.00
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	7	EA	\$2,200.00	\$15,400.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	0	EA	\$1,600.00	\$0.00	
8.3	1 gallon shrub w/goundcover planting	0	SF	\$2.50	\$0.00	
8.4	Irrigation meter/connection, backflow, and controller	1	EA	\$15,000.00	\$15,000.00	
	Sub-total					\$30,400.00
9	Site Furnishings					
9.1	Benches (bench, footings)	4	EA	\$1,000.00	\$4,000.00	

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	5	EA	\$6,000.00	\$30,000.00		
9.3	Pedestrian light Type 2 (along AC path on Howard)	0	EA	\$2,000.00	\$0.00		
9.4	Chain link fence - 4' vinyl coated	0	LF	\$25.00	\$0.00		
9.5	Timber barrier/wheel stop 8'x8"x8"	0	EA	\$50.00	\$0.00		
	Sub-total					\$34,000.00	
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.						
10.1	High visibility crosswalk	4	EA	\$1,750.00	\$7,000.00		
10.2	Repaint stop bars and markings	0	LS	\$1,000.00	\$0.00		
10.3	Painted pedestrian walkway - per 30' with associated signage	0	EA	\$1,060.00	\$0.00		
10.4	Bike lane striping and signage	0.06	MI	\$10,000.00	\$643.94		
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00		
	Sub-total					\$7,643.94	
					SUBTOTAL	\$299,384.60	
					CONTINGENCY	20.0%	\$59,876.92
					SURVEYING	5.0%	\$14,969.23
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0%	\$44,907.69
					ENVIRONMENTAL PERMITTING	10.0%	\$29,938.46
					MITIGATION	2.5%	\$7,484.62
					CONSTRUCTION ENGINEERING	15.0%	\$44,907.69
					TOTAL		\$502,000.00

Table C- 4: State Route 162 - State Route 162 - Greeley and Grange Streets

From Greeley/SR 162 intersection extending 600' south

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP - Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$2,203.89	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$881.55	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$2,203.89	
4	Traffic Control	1	LS	10.00%	\$4,407.77	
	Sub-total					\$9,697.10
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	1154	LF	\$5.00	\$5,770.00	
5.2	Remove AC pavement	4015	SF	\$0.25	\$1,003.75	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$6,773.75
6	Earthwork					
6.1	Clearing and Grubbing	5,016	SF	\$0.25	\$1,254.00	
6.2	Excavation and Grading	46	CY	\$18.00	\$828.00	
6.3	Embankment, Import Borrow	12	CY	\$30.00	\$364.08	
6.4	Soil for new landscape areas	35	CY	\$10.00	\$345.00	
	Sub-total					\$2,791.08
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	183	LF	\$24.00	\$4,392.00	
7.2	Construct AC curb	75	LF	\$12.00	\$900.00	
7.3	Construct 4" PCC sidewalk	0	SF	\$8.00	\$0.00	
7.4	Construct AC Path - 5' to 10' wide	72.815 6	Ton	\$150.00	\$10,922.34	
7.5	Construct new inlet to existing storm drain	1	EA	\$2,000.00	\$2,000.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	0	EA	\$1,400.00	\$0.00	
7.8	Curb extension with decorative pavers	0	SF	\$15.00	\$0.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$18,264.34
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	0	EA	\$2,200.00	\$0.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	3	EA	\$1,600.00	\$4,800.00	
8.3	1 gallon shrub w/goundcover planting	1,868	SF	\$2.50	\$4,670.00	
8.4	Irrigation meter/connection, backflow, and controller	0	EA	\$15,000.00	\$0.00	
	Sub-total					\$9,470.00

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
9	Site Furnishings					
9.1	Benches (bench, footings)	0	EA	\$1,000.00	\$0.00	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	0	EA	\$6,000.00	\$0.00	
9.3	Pedestrian light Type 2 (along AC path on Howard)	0	EA	\$2,000.00	\$0.00	
9.4	Chain link fence - 4' vinyl coated	0	LF	\$25.00	\$0.00	
9.5	Timber barrier/wheel stop 8'x8"x8"	1	EA	\$50.00	\$50.00	
	Sub-total					\$50.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	2	EA	\$1,750.00	\$3,500.00	
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00	
10.3	Painted pedestrian walkway - per 30' with associated signage	1	EA	\$1,060.00	\$1,060.00	
10.4	Bike lane striping and signage	0.12	MI	\$10,000.00	\$1,168.56	
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00	
	Sub-total					\$6,728.56
					SUBTOTAL	\$53,774.83
					CONTINGENCY	20.0% \$10,754.97
					SURVEYING	5.0% \$2,688.74
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0% \$8,066.22
					ENVIRONMENTAL PERMITTING	10.0% \$5,377.48
					MITIGATION	2.5% \$1,344.37
					CONSTRUCTION ENGINEERING	15.0% \$8,066.22
					TOTAL	\$91,000.00

Table C- 5: State Route 162 - Redwood Market to Eberle Street

from Eberle Street extending 610' north

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP – Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$2,541.09	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$1,016.43	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$2,541.09	
4	Traffic Control	1	LS	10.00%	\$5,082.17	
	Sub-total					\$11,180.78
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	186	LF	\$5.00	\$930.00	
5.2	Remove AC pavement	736	SF	\$0.25	\$184.00	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$1,114.00
6	Earthwork					
6.1	Clearing and Grubbing	3,055	SF	\$0.25	\$763.75	
6.2	Excavation and Grading	17	CY	\$18.00	\$306.00	
6.3	Embankment, Import Borrow	9	CY	\$30.00	\$283.19	
6.4	Soil for new landscape areas	13	CY	\$10.00	\$127.50	
	Sub-total					\$1,480.44
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	106	LF	\$24.00	\$2,544.00	
7.2	Construct AC curb	64	LF	\$12.00	\$768.00	
7.3	Construct 4" PCC sidewalk	636	SF	\$8.00	\$5,088.00	
7.4	Construct AC Path - 5' to 10' wide	56.6371	Ton	\$150.00	\$8,495.57	
7.5	Construct new inlet to existing storm drain	0	EA	\$2,000.00	\$0.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	2	EA	\$1,400.00	\$2,800.00	
7.8	Curb extension with decorative pavers	130	SF	\$15.00	\$1,950.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$21,695.57
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	0	EA	\$2,200.00	\$0.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	4	EA	\$1,600.00	\$6,400.00	
8.3	1 gallon shrub w/goundcover planting	666	SF	\$2.50	\$1,665.00	
8.4	Irrigation meter/connection, backflow, and controller	0	EA	\$15,000.00	\$0.00	
	Sub-total					\$8,065.00

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL	
9	Site Furnishings						
9.1	Benches (bench, footings)	0	EA	\$1,000.00	\$0.00		
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	1	EA	\$6,000.00	\$6,000.00		
9.3	Pedestrian light Type 2 (along AC path on Howard)	0	EA	\$2,000.00	\$0.00		
9.4	Chain link fence - 4' vinyl coated	0	LF	\$25.00	\$0.00		
9.5	Timber barrier/wheel stop 8'x8"x8"	0	EA	\$50.00	\$0.00		
	Sub-total					\$6,000.00	
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.						
10.1	High visibility crosswalk	1	EA	\$1,750.00	\$1,750.00		
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00		
10.3	Painted pedestrian walkway - per 30' with associated signage	8	EA	\$1,060.00	\$8,480.00		
10.4	Bike lane striping and signage	0.12	MI	\$10,000.00	\$1,236.74		
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00		
	Sub-total					\$12,466.74	
					SUBTOTAL	\$62,002.53	
					CONTINGENCY	20.0%	\$12,400.51
					SURVEYING	5.0%	\$3,100.13
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0%	\$9,300.38
					ENVIRONMENTAL PERMITTING	10.0%	\$6,200.25
					MITIGATION	2.5%	\$1,550.06
					CONSTRUCTION ENGINEERING	15.0%	\$9,300.38
					TOTAL		\$104,000.00

Table C- 6: Southern State Road 162 Commercial Area

Extending 640' north of south side of Wagon Wheel Motel property

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP – Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$2,487.67	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$995.07	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$2,487.67	
4	Traffic Control	1	LS	10.00%	\$4,975.35	
	Sub-total					\$10,945.76
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	408	LF	\$5.00	\$2,040.00	
5.2	Remove AC pavement	1150	SF	\$0.25	\$287.50	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$2,327.50
6	Earthwork					
6.1	Clearing and Grubbing	1,150	SF	\$0.25	\$287.50	
6.2	Excavation and Grading	29	CY	\$18.00	\$522.00	
6.3	Embankment, Import Borrow	0	CY	\$30.00	\$0.00	
6.4	Soil for new landscape areas	22	CY	\$10.00	\$217.50	
	Sub-total					\$1,027.00
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	173	LF	\$24.00	\$4,152.00	
7.2	Construct AC curb	250	LF	\$12.00	\$3,000.00	
7.3	Construct 4" PCC sidewalk	1038	SF	\$8.00	\$8,304.00	
7.4	Construct AC Path - 5' to 10' wide	0	Ton	\$150.00	\$0.00	
7.5	Construct new inlet to existing storm drain	0	EA	\$2,000.00	\$0.00	
7.6	Aggregate base and shoulder Rock	0	CY	\$50.00	\$0.00	
7.7	Curb Ramp with truncated dome surface	0	EA	\$1,400.00	\$0.00	
7.8	Curb extension with decorative pavers	0	SF	\$15.00	\$0.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$15,456.00
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	0	EA	\$2,200.00	\$0.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	8	EA	\$1,600.00	\$12,800.00	
8.3	1 gallon shrub w/goundcover planting	1,150	SF	\$2.50	\$2,875.00	
8.4	Irrigation meter/connection, backflow, and controller	0	EA	\$15,000.00	\$0.00	

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
	Sub-total					\$15,675.00
9	Site Furnishings					
9.1	Benches (bench, footings)	0	EA	\$1,000.00	\$0.00	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	0	EA	\$6,000.00	\$0.00	
9.3	Pedestrian light Type 2 (along AC path on Howard)	0	EA	\$2,000.00	\$0.00	
9.4	Chain link fence - 4' vinyl coated	0	LF	\$25.00	\$0.00	
9.5	Timber barrier/wheel stop 8'x8"x8"	0	EA	\$50.00	\$0.00	
	Sub-total					\$0.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	0	EA	\$1,750.00	\$0.00	
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00	
10.3	Painted pedestrian walkway - per 30' with associated signage	11	EA	\$1,060.00	\$11,660.00	
10.4	Bike lane striping and signage	0.26	MI	\$10,000.00	\$2,607.95	
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00	
	Sub-total					\$15,267.95
					SUBTOTAL	\$60,699.21
					CONTINGENCY	20.0% \$12,139.84
					SURVEYING	5.0% \$3,034.96
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0% \$9,104.88
					ENVIRONMENTAL PERMITTING	10.0% \$6,069.92
					MITIGATION	2.5% \$1,517.48
					CONSTRUCTION ENGINEERING	15.0% \$9,104.88
					TOTAL	\$102,000.00

Table C- 7: Howard Street at Main Street

Intersection of Howard Street and extending 200' south on Main St. and 220' east on Howard to SR 162 intersection

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP – Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$10,910.56	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$4,364.23	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$10,910.56	
4	Traffic Control	1	LS	10.00%	\$21,821.13	
	Sub-total					\$48,006.48
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	1313	LF	\$5.00	\$6,565.00	
5.2	Remove AC pavement	5103	SF	\$0.25	\$1,275.75	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$7,840.75
6	Earthwork					
6.1	Clearing and Grubbing	5,726	SF	\$0.25	\$1,431.50	
6.2	Excavation and Grading	0	CY	\$18.00	\$0.00	
6.3	Embankment, Import Borrow	0	CY	\$30.00	\$0.00	
6.4	Soil for new landscape areas	0	CY	\$10.00	\$0.00	
	Sub-total					\$1,431.50
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	1376	LF	\$24.00	\$33,024.00	
7.2	Construct AC curb	0	LF	\$12.00	\$0.00	
7.3	Construct 4" PCC sidewalk	5900	SF	\$8.00	\$47,200.00	
7.4	Construct AC Path - 5' to 10' wide	0	Ton	\$150.00	\$0.00	
7.5	Construct new inlet to existing storm drain	0	EA	\$2,000.00	\$0.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	20	EA	\$1,400.00	\$28,000.00	
7.8	Curb extension with decorative pavers	2277	SF	\$15.00	\$34,155.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$142,429.00
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	3	EA	\$2,200.00	\$6,600.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	1	EA	\$1,600.00	\$1,600.00	
8.3	1 gallon shrub w/groundcover planting	0	SF	\$2.50	\$0.00	
8.4	Irrigation meter/connection, backflow, and controller	1	EA	\$15,000.00	\$15,000.00	
	Sub-total					\$23,200.00

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
9	Site Furnishings					
9.1	Benches (bench, footings)	1	EA	\$1,000.00	\$1,000.00	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	4	EA	\$6,000.00	\$24,000.00	
9.3	Pedestrian light Type 2 (along AC path on Howard)	3	EA	\$2,000.00	\$6,000.00	
9.4	Chain link fence - 4' vinyl coated	0	LF	\$25.00	\$0.00	
9.5	Timber barrier/wheel stop 8'x8"x8"	8	EA	\$50.00	\$400.00	
	Sub-total					\$31,400.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	5	EA	\$1,750.00	\$8,750.00	
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00	
10.3	Painted pedestrian walkway - per 30' with associated signage	1	EA	\$1,060.00	\$1,060.00	
10.4	Bike lane striping and signage	0.11	MI	\$10,000.00	\$1,100.00	
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00	
	Sub-total					\$11,910.00
					SUBTOTAL	\$266,217.73
					CONTINGENCY	20.0% \$53,243.55
					SURVEYING	5.0% \$13,310.89
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0% \$39,932.66
					ENVIRONMENTAL PERMITTING	10.0% \$26,621.77
					MITIGATION	2.5% \$6,655.44
					CONSTRUCTION ENGINEERING	15.0% \$39,932.66
					TOTAL	\$446,000.00

Table C- 8: Howard Street at Airport Road

From intersection of Howard Street and Airport Road extending 2190' east on Howard and 300' north on Airport
 PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: RA - Alta PREPARED BY: JP – Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$11,400.57	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$4,560.23	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$11,400.57	
4	Traffic Control	1	LS	10.00%	\$22,801.14	
	Sub-total					\$50,162.51
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	541	LF	\$5.00	\$2,705.00	
5.2	Remove AC pavement	13060	SF	\$0.25	\$3,265.00	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$5,970.00
6	Earthwork					
6.1	Clearing and Grubbing	24,702	SF	\$0.25	\$6,175.50	
6.2	Excavation and Grading	231	CY	\$18.00	\$4,158.00	
6.3	Embankment, Import Borrow	56	CY	\$30.00	\$1,669.23	
6.4	Soil for new landscape areas	173	CY	\$10.00	\$1,732.50	
	Sub-total					\$13,735.23
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	199	LF	\$24.00	\$4,776.00	
7.2	Construct AC curb	1130	LF	\$12.00	\$13,560.00	
7.3	Construct 4" PCC sidewalk	655	SF	\$8.00	\$5,240.00	
7.4	Construct AC Path - 5' to 10' wide	333.8452	Ton	\$150.00	\$50,076.78	
7.5	Construct new inlet to existing storm drain	0	EA	\$2,000.00	\$0.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	6	EA	\$1,400.00	\$8,400.00	
7.8	Curb extension with decorative pavers	0	SF	\$15.00	\$0.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$82,102.78
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	0	EA	\$2,200.00	\$0.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	13	EA	\$1,600.00	\$20,800.00	
8.3	1 gallon shrub w/groundcover planting	6,855	SF	\$2.50	\$17,137.50	
8.4	Irrigation meter/connection, backflow, and controller	0	EA	\$15,000.00	\$0.00	

Sub-total						\$37,937.50
	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
9	Site Furnishings					
9.1	Benches (bench, footings)	0	EA	\$1,000.00	\$0.00	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	2	EA	\$6,000.00	\$12,000.00	
9.3	Pedestrian light Type 2 (along AC path on Howard)	21	EA	\$2,000.00	\$42,000.00	
9.4	Chain link fence - 4' vinyl coated	282	LF	\$25.00	\$7,050.00	
9.5	Timber barrier/wheel stop 8'x8"x8"	0	EA	\$50.00	\$0.00	
	Sub-total					\$61,050.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	12	EA	\$1,750.00	\$21,000.00	
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00	
10.3	Painted pedestrian walkway - per 30' with associated signage	0	EA	\$1,060.00	\$0.00	
10.4	Bike lane striping and signage	0.52	MI	\$10,000.00	\$5,215.91	
10.6	HAWK/RRFB	0.00	EA	\$4,000.00	\$0.00	
	Sub-total					\$27,215.91
					SUBTOTAL	\$278,173.93
					CONTINGENCY	20.0% \$55,634.79
					SURVEYING	5.0% \$13,908.70
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0% \$41,726.09
					ENVIRONMENTAL PERMITTING	10.0% \$27,817.39
					MITIGATION	2.5% \$6,954.35
					CONSTRUCTION ENGINEERING	15.0% \$41,726.09
					TOTAL	\$466,000.00

Table C- 9: Foothill Boulevard

Intersection of Foothill Blvd. and Airport Road, and extending 2590' west to Tabor Lane
 PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013
 REVIEWED BY: RA - Alta PREPARED BY: JP - Alta

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$4,344.05	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$1,737.62	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$4,344.05	
4	Traffic Control	1	LS	10.00%	\$8,688.10	
	Sub-total					\$19,113.83
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	0	LF	\$5.00	\$0.00	
5.2	Remove AC pavement	0	SF	\$0.25	\$0.00	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
	Sub-total					\$0.00
6	Earthwork					
6.1	Clearing and Grubbing	15,961	SF	\$0.25	\$3,990.25	
6.2	Excavation and Grading	0	CY	\$18.00	\$0.00	
6.3	Embankment, Import Borrow	66	CY	\$30.00	\$1,971.18	
6.4	Soil for new landscape areas	0	CY	\$10.00	\$0.00	
	Sub-total					\$5,961.43
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	0	LF	\$24.00	\$0.00	
7.2	Construct AC curb	0	LF	\$12.00	\$0.00	
7.3	Construct 4" PCC sidewalk	0	SF	\$8.00	\$0.00	
7.4	Construct AC Path - 5' to 10' wide	394.2367	Ton	\$150.00	\$59,135.51	
7.5	Construct new inlet to existing storm drain	0	EA	\$2,000.00	\$0.00	
7.6	Aggregate base and shoulder Rock	1	CY	\$50.00	\$50.00	
7.7	Curb Ramp with truncated dome surface	0	EA	\$1,400.00	\$0.00	
7.8	Curb extension with decorative pavers	0	SF	\$15.00	\$0.00	
7.9	Colored stamped asphalt or concrete	0	SF	\$15.00	\$0.00	
	Sub-total					\$59,185.51
8	Planting					
8.1	24" box trees with root barriers, tree grates, and irrigation	0	EA	\$2,200.00	\$0.00	
8.2	15 gallon trees with protective posts and root barriers, irrigation???	0	EA	\$1,600.00	\$0.00	
8.3	1 gallon shrub w/goundcover planting	0	SF	\$2.50	\$0.00	
8.4	Irrigation meter/connection, backflow, and controller	0	EA	\$15,000.00	\$0.00	
	Sub-total					\$0.00

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
9	Site Furnishings					
9.1	Benches (bench, footings)	0	EA	\$1,000.00	\$0.00	
9.2	Pedestrian light Type 1 (streetlamp style, placed near intersections)	0	EA	\$6,000.00	\$0.00	
9.3	Pedestrian light Type 2 (along AC path on Howard)	0	EA	\$2,000.00	\$0.00	
9.4	Chain link fence - 4' vinyl coated	113	LF	\$25.00	\$2,825.00	
9.5	Timber barrier/wheel stop 8'x8"x8"	0	EA	\$50.00	\$0.00	
	Sub-total					\$2,825.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	5	EA	\$1,750.00	\$8,750.00	
10.2	Repaint stop bars and markings	1	LS	\$1,000.00	\$1,000.00	
10.3	Painted pedestrian walkway - per 30' with associated signage	0	EA	\$1,060.00	\$0.00	
10.4	Bike lane striping and signage	0.52	MI	\$10,000.00	\$5,159.09	
10.6	HAWK/RRFB	1	EA	\$4,000.00	\$4,000.00	
	Sub-total					\$18,909.09
					SUBTOTAL	\$105,994.86
					CONTINGENCY	20.0% \$21,198.97
					SURVEYING	5.0% \$5,299.74
					PLANS, SPECIFICATIONS AND ENGINEERING	15.0% \$15,899.23
					ENVIRONMENTAL PERMITTING	10.0% \$10,599.49
					MITIGATION	2.5% \$2,649.87
					CONSTRUCTION ENGINEERING	15.0% \$15,899.23
					TOTAL	\$178,000.00

**Table C-10: HWY 162 - East Lane to Cultural Performance Grounds Driveway
Estimate 1 of 4 Sta 0+00 - 1+61**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$944.99	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$378.00	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$944.99	
4	Traffic Control	1	LS	10.00%	\$1,889.98	
	Sub-total					\$4,157.95
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	52	LF	\$5.00	\$260.00	
5.2	Remove AC pavement	328	SF	\$0.25	\$82.00	
5.5	Relocate Existing Utility Pole	1	EA	\$8,000.00	\$8,000.00	
	Sub-total					\$8,342.00
6	Earthwork					
6.1	Clearing and Grubbing	2,254	SF	\$0.25	\$563.50	
6.2	Excavation and Grading	72	CY	\$18.00	\$1,288.00	
	Sub-total					\$1,851.50
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	32	Ton	\$150.00	\$4,765.60	
7.6	Aggregate Base and Shoulder Rock	56	CY	\$50.00	\$2,790.67	
	Sub-total					\$7,556.27
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.03	MI	\$5,000.00	\$150.00	
10.7	Private Driveway Crossing	1.00	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$1,150.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	3,250	SF	\$2.00	\$6,500.00	
	Sub-total					\$6,500.00
					SUBTOTAL	\$29,557.72
				CONTINGENCY	20%	\$5,911.54
				SURVEYING	5%	\$1,477.89
				PLANS, SPECIFICATIONS AND ENGINEERING	15%	\$4,433.66
				ENVIRONMENTAL PERMITTING	5%	\$2,955.77
				MITIGATION	0%	\$738.94
				CONSTRUCTION ENGINEERING	15%	\$4,433.66
				TOTAL		\$49,600.00

**Table C- 11: HWY 162 - East Lane to Cultural Performance Grounds Driveway
Estimate 2 of 4 - Sta 1+61 - 3+08**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$1,167.49	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$466.99	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$1,167.49	
4	Traffic Control	1	LS	10.00%	\$2,334.97	
	Sub-total					\$5,136.93
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.4	Remove Fence	47	LF	\$10.00	\$470.00	
5.5	Relocate Existing Utility Pole	1	EA	\$8,000.00	\$8,000.00	
	Sub-total					\$8,470.00
6	Earthwork					
6.1	Clearing and Grubbing	2,058	SF	\$0.25	\$514.50	
6.2	Excavation and Grading	65	CY	\$18.00	\$1,176.00	
	Sub-total					\$1,690.50
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	29	Ton	\$150.00	\$4,351.20	
7.6	Aggregate Base and Shoulder Rock	51	CY	\$50.00	\$2,548.00	
7.11	Construct CMP storm drain pipe	40	LF	\$60.00	\$2,400.00	
	Sub-total					\$9,299.20
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	137	LF	\$20.00	\$2,740.00	
	Sub-total					\$2,740.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.03	MI	\$5,000.00	\$150.00	
10.7	Private Driveway Crossing	1.00	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$1,150.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	3,650	SF	\$2.00	\$7,300.00	
	Sub-total					\$7,300.00
					SUBTOTAL	\$35,786.63
				CONTINGENCY	20%	\$7,157.33
				SURVEYING	5%	\$1,789.33
				PLANS, SPECIFICATIONS AND ENGINEERING	15%	\$5,368.00
				ENVIRONMENTAL PERMITTING	5%	\$1,789.33
				MITIGATION	2.5%	\$894.67
				CONSTRUCTION ENGINEERING	15%	\$5,368.00
				TOTAL		\$59,000.00

**Table C- 12: HWY 162 - East Lane to Cultural Performance Grounds Driveway
Estimate 3 of 4 - Sta 3+08 - 13+73**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$5,509.63	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$2,203.85	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$5,509.63	
4	Traffic Control	1	LS	10.00%	\$11,019.25	
	Sub-total					\$24,242.36
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.4	Remove Fence	47	LF	\$10.00	\$470.00	
	Sub-total					\$470.00
6	Earthwork					
6.1	Clearing and Grubbing	16,946	SF	\$0.25	\$4,236.50	
6.2	Excavation and Grading	25	CY	\$18.00	\$458.09	
	Sub-total					\$4,694.59
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	362	Ton	\$150.00	\$54,327.20	
7.6	Aggregate Base and Shoulder Rock	520	CY	\$50.00	\$26,000.74	
7.11	Construct CMP storm drain pipe	40	LF	\$60.00	\$2,400.00	
	Sub-total					\$82,727.94
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	1,065	LF	\$20.00	\$21,300.00	
0	Sub-total					\$21,300.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.20	MI	\$5,000.00	\$1,000.00	
	Sub-total					\$1,000.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	0	SF	\$2.00	\$0.00	
	Sub-total					\$0.00
					SUBTOTAL	\$134,434.89
					CONTINGENCY	20% \$26,886.98
					SURVEYING	5% \$6,721.74
					PLANS, SPECIFICATIONS AND ENGINEERING	15% \$20,165.23
					ENVIRONMENTAL PERMITTING	10% \$13,443.49
					MITIGATION	3% \$3,360.87
					CONSTRUCTION ENGINEERING	15% \$20,165.23
					TOTAL	\$226,000.00

Table C- 13: HWY 162 - East Lane to Cultural Performance Grounds Driveway

Estimate 4 of 4 - Sta 13+73 -- 20+157+01

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$5,518.03	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$2,207.21	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$5,518.03	
4	Traffic Control	1	LS	10.00%	\$11,036.05	
	Sub-total					\$24,279.32
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	540	LF	\$5.00	\$2,700.00	
5.2	Remove AC pavement	3767	SF	\$0.25	\$941.75	
5.5	Relocate Existing Utility Pole	1	EA	\$8,000.00	\$8,000.00	
	Sub-total					\$11,641.75
6	Earthwork					
6.1	Clearing and Grubbing	8,500	SF	\$0.25	\$2,125.00	
6.2	Excavation and Grading	448	CY	\$18.00	\$8,069.87	
	Sub-total					\$10,194.87
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	636	LF	\$24.00	\$15,264.00	
7.3	Construct 4" PCC sidewalk - 6' wide	331	SF	\$8.00	\$2,648.00	
7.4	Construct AC Path - 5' to 10' wide	271	Ton	\$150.00	\$40,708.00	
7.6	Aggregate Base and Shoulder Rock	368	CY	\$50.00	\$18,403.93	
	Sub-total					\$77,023.93
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	3	EA	\$1,750.00	\$5,250.00	
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.25	MI	\$5,000.00	\$1,250.00	
10.8	Public Street Crossing	1.00	EA	\$5,000.00	\$5,000.00	
	Sub-total					\$11,500.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	0	SF	\$2.00	\$0.00	
	Sub-total					\$0.00
					SUBTOTAL	\$134,639.86
					CONTINGENCY	20% \$26,927.97
					SURVEYING	5% \$6,731.99
					PLANS, SPECIFICATIONS AND ENGINEERING	15% \$20,195.98
					ENVIRONMENTAL PERMITTING	10% \$13,463.99
					MITIGATION	3% \$3,366.00
					CONSTRUCTION ENGINEERING	15% \$20,195.98
					TOTAL	\$226,000.00

**Table C- 14: HWY 162 – Cultural Performance Grounds Driveway to Biggar Lane
Estimate 1 of 1 - Sta 20+15 to 53+28**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW – GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$18,252.80	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$7,301.12	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$18,252.80	
4	Traffic Control	1	LS	10.00%	\$36,505.60	
	Sub-total					\$80,312.32
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.4	Remove Fence	2609	LF	\$10.00	\$26,090.00	
5.5	Relocate Existing Utility Pole	8	EA	\$8,000.00	\$64,000.00	
5.7	Remove Existing Storm Drain Culvert	1	EA	\$1,000.00	\$1,000.00	
5.8	Remove and Relocate Existing Roadside Sign	4	EA	\$600.00	\$2,400.00	
	Sub-total					\$93,490.00
6	Earthwork					
6.1	Clearing and Grubbing	47,754	SF	\$0.25	\$11,938.50	
6.2	Excavation and Grading	1,422	CY	\$18.00	\$25,604.49	
6.3	Embankment, Import Borrow	156	CY	\$30.00	\$4,689.16	
	Sub-total					\$42,232.15
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	688	Ton	\$150.00	\$103,141.20	
7.6	Aggregate base and shoulder Rock	1183	CY	\$50.00	\$59,127.63	
7.10	Extend existing storm drain system	4	EA	\$1,000.00	\$4,000.00	
7.11	Construct CMP storm drain pipe	41	LF	\$60.00	\$2,460.00	
7.12	Construct shallow manhole	1	EA	\$5,000.00	\$5,000.00	
	Sub-total					\$173,728.83
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	2,606	LF	\$20.00	\$52,120.00	
0	Sub-total					\$52,120.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I trail striping, signage and bollards	0.50	MI	\$5,000.00	\$2,485.00	
10.7	Private driveway crossing	1	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$3,485.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
11.1	Right-of-Way	14,685	SF	\$2.00	\$29,370.00	
	Sub-total				\$29,370.00*	
					SUBTOTAL	\$445,368.29
					CONTINGENCY	20% \$89,073.66
					SURVEYING	5% \$22,268.41
					PLANS, SPECIFICATIONS AND ENGINEERING	15% \$66,805.24
					ENVIRONMENTAL PERMITTING	10% \$44,536.83
					MITIGATION	3% \$11,134.21
					CONSTRUCTION ENGINEERING	15% \$66,805.24
					TOTAL	\$776,000.00

*Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.

**Table C- 15: HWY 162 – Biggar Lane to Hurt Road
Estimate 1 of 5 - Sta 53+28 - 56+86**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$2,368.79	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$947.52	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$2,368.79	
4	Traffic Control	1	LS	10.00%	\$4,737.59	
	Sub-total					\$10,422.70
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.5	Relocate Existing Utility Pole	1	EA	\$8,000.00	\$8,000.00	
5.7	Remove Existing Storm Drain Culvert	1	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$9,000.00
6	Earthwork					
6.1	Clearing and Grubbing	4,508	SF	\$0.25	\$1,127.00	
6.2	Excavation and Grading	59	CY	\$18.00	\$1,062.60	
6.3	Embankment, Import Borrow	164	CY	\$30.00	\$4,933.76	
	Sub-total					\$7,123.36
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.1	Construct curb & gutter	75	LF	\$24.00	\$1,800.00	
7.4	Construct AC Path - 5' to 10' wide	64	Ton	\$150.00	\$9,531.20	
7.6	Aggregate Base and Shoulder Rock	112	CY	\$50.00	\$5,581.33	
7.11	Construct CMP storm drain pipe	50	LF	\$60.00	\$3,000.00	
	Sub-total					\$19,912.53
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.07	MI	\$5,000.00	\$340.00	
10.7	Private Driveway Crossing	1.00	EA	\$1,000.00	\$1,000.00	
10.8	Public Street Crossing	2.00	EA	\$5,000.00	\$10,000.00	
	Sub-total					\$11,340.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	0	SF	\$2.00	\$0.00	
	Sub-total					\$0.00
					SUBTOTAL	\$57,798.58
					CONTINGENCY	20% \$11,559.72
					SURVEYING	5% \$2,889.93
					PLANS, SPECIFICATIONS AND ENGINEERING	15% \$8,669.79
					ENVIRONMENTAL PERMITTING	10% \$5,779.86
					MITIGATION	3% \$1,444.96
					CONSTRUCTION ENGINEERING	15% \$8,669.79
					TOTAL	\$97,000.00

*Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.

**Table C- 16: HWY 162 – Biggar Lane to Hurt Road
Estimate 2 of 5 - Sta 56+86 - 60+07**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$12,449.95	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$4,979.98	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$12,449.95	
4	Traffic Control	1	LS	10.00%	\$24,899.89	
	Sub-total					\$54,779.76
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.4	Remove Fence	125	LF	\$10.00	\$1,250.00	
5.5	Relocate Existing Utility Pole	2	EA	\$8,000.00	\$16,000.00	
5.7	Remove Existing Storm Drain Culvert	1	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$18,250.00
6	Earthwork					
6.1	Clearing and Grubbing	2,254	SF	\$0.25	\$563.50	
6.2	Excavation and Grading	10	CY	\$18.00	\$174.95	
6.3	Embankment, Import Borrow	448	CY	\$30.00	\$13,429.19	
	Sub-total					\$14,167.64
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	32	Ton	\$150.00	\$4,765.60	
7.6	Aggregate Base and Shoulder Rock	56	CY	\$50.00	\$2,790.67	
7.13	Provide and Install (120'x12") Pre-manufactured steel bridge	1	LS	\$205,000.00	\$205,000.00	
	Sub-total					\$212,556.27
8	Planting					
	Sub-total					\$0.00
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	136	LF	\$20.00	\$2,720.00	
0	Sub-total					\$2,720.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.06	MI	\$5,000.00	\$305.00	
10.7	Private Driveway Crossing	1.00	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$1,305.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	5,476	SF	\$2.00	\$10,952.00	
	Sub-total					\$10,952.00
					SUBTOTAL	\$314,730.67
					CONTINGENCY 20%	\$62,946.13
					SURVEYING 5%	\$15,736.53
					PLANS, SPECIFICATIONS AND ENGINEERING 15%	\$47,209.60
					ENVIRONMENTAL PERMITTING 10%	\$31,473.07
					MITIGATION 3%	\$7,868.27
					CONSTRUCTION ENGINEERING 15%	\$47,209.60
					TOTAL	\$528,000.00

*Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.

**Table C- 17: HWY 162 – Biggar Lane to Hurt Road
Estimate 3 of 5 - Sta 60+07 - 66+67**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$4,356.47	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$1,742.59	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$4,356.47	
4	Traffic Control	1	LS	10.00%	\$8,712.93	
	Sub-total					\$19,168.46
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.4	Remove Fence	660	LF	\$10.00	\$6,600.00	
5.5	Relocate Existing Utility Pole	1	EA	\$8,000.00	\$8,000.00	
	Sub-total					\$14,600.00
6	Earthwork					
6.1	Clearing and Grubbing	10,488	SF	\$0.25	\$2,622.00	
6.2	Excavation and Grading	325	CY	\$18.00	\$5,841.52	
	Sub-total					\$8,463.52
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	223	Ton	\$150.00	\$33,513.60	
7.6	Aggregate Base and Shoulder Rock	321	CY	\$50.00	\$16,062.22	
	Sub-total					\$49,575.82
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	642	LF	\$20.00	\$12,840.00	
0	Sub-total					\$12,840.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.13	MI	\$5,000.00	\$650.00	
10.7	Private Driveway Crossing	1.00	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$1,650.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	0	SF	\$2.00	\$0.00	
	Sub-total					\$0.00
					SUBTOTAL	\$106,297.80
					CONTINGENCY	20% \$21,259.56
					SURVEYING	5% \$5,314.89
					PLANS, SPECIFICATIONS AND ENGINEERING	15% \$15,944.67
					ENVIRONMENTAL PERMITTING	10% \$10,629.78
					MITIGATION	3% \$2,657.44
					CONSTRUCTION ENGINEERING	15% \$15,944.67
					TOTAL	\$179,000.00

*Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.

**Table C- 18: HWY 162 – Biggar Lane to Hurt Road
Estimate 4 of 5 - Sta 66+67 - 71+71**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization - maximum of 5% of total bid price	1	LS	5.00%	\$2,932.34	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$1,172.94	
3	Erosion Control - includes all BMPs, SWPPP and Reporting	1	LS	5.00%	\$2,932.34	
4	Traffic Control	1	LS	10.00%	\$5,864.69	
	Sub-total					\$12,902.31
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.5	Relocate Existing Utility Pole	3	EA	\$8,000.00	\$24,000.00	
5.6	Remove and Relocate Existing Mailbox	1	EA	\$500.00	\$500.00	
	Sub-total					\$24,500.00
6	Earthwork					
6.1	Clearing and Grubbing	7,056	SF	\$0.25	\$1,764.00	
6.2	Excavation and Grading	237	CY	\$18.00	\$4,273.92	
	Sub-total					\$6,037.92
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	99	Ton	\$150.00	\$14,918.40	
7.6	Aggregate Base and Shoulder Rock	175	CY	\$50.00	\$8,736.00	
	Sub-total					\$23,654.40
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.4	Bike lane striping and signage	0.10	MI	\$10,000.00	\$954.55	
10.5	Miscellaneous Class I Trail striping, signage and bollards	0.10	MI	\$5,000.00	\$500.00	
10.7	Private Driveway Crossing	3.00	EA	\$1,000.00	\$3,000.00	
	Sub-total					\$4,454.55
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					
11.1	Right-of-Way	0	SF	\$2.00	\$0.00	
	Sub-total					\$0.00
					SUBTOTAL	\$71,549.18
				CONTINGENCY	20%	\$14,309.84
				SURVEYING	5%	\$3,577.46
				PLANS, SPECIFICATIONS AND ENGINEERING	15%	\$10,732.38
				ENVIRONMENTAL PERMITTING	10%	\$7,154.92
				MITIGATION	3%	\$1,788.73
				CONSTRUCTION ENGINEERING	15%	\$10,732.38
				TOTAL		\$120,000.00

*Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.

**Table C-19: HWY 162 – Biggar Lane to Hurt Road
Estimate 5 of 5 - Sta 71+71 - 79+81**

PLANNING-LEVEL ESTIMATE OF PROBABLE CONSTRUCTION COST - December, 2013

REVIEWED BY: MP - GHD PREPARED BY: JJW - GHD

Note: Estimate based upon conceptual designs and is to be used for planning purposes only.

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
1	Mobilization	1	LS	5.00%	\$4,184.00	
2	General Conditions, Bonds and Insurance	1	LS	2.00%	\$1,673.60	
3	Erosion Control - includes all BMPs, SWPPP and	1	LS	5.00%	\$4,184.00	
4	Traffic Control	1	LS	10.00%	\$8,368.00	
	Sub-total					\$18,409.59
5	Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.					
5.1	Sawcut pavement	0	LF	\$5.00	\$0.00	
5.2	Remove AC pavement	0	SF	\$0.25	\$0.00	
5.3	Remove concrete pavement	0	SF	\$0.25	\$0.00	
5.4	Remove Fence	753	LF	\$10.00	\$7,530.00	
5.5	Relocate Existing Utility Pole	3	EA	\$8,000.00	\$24,000.00	
	Sub-total					\$31,530.00
6	Earthwork					
6.1	Clearing and Grubbing	10,978	SF	\$0.25	\$2,744.50	
6.2	Excavation and Grading	341	CY	\$18.00	\$6,146.71	
	Sub-total					\$8,891.21
7	Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Class I Trail					
7.4	Construct AC Path - 5' to 10' wide	27	Ton	\$150.00	\$3,996.00	
7.6	Aggregate base and shoulder Rock	328	CY	\$50.00	\$16,392.74	
7.11	Construct CMP storm drain pipe	35	LF	\$60.00	\$2,100.00	
	Sub-total					\$22,488.74
9	Site Furnishings					
9.6	R.O.W. fence - 5-Strand Barbed Wire with Mesh (Dog/Sheep exclusion)	776	LF	\$20.00	\$15,520.00	
0	Sub-total					\$15,520.00
10	Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.					
10.1	High visibility crosswalk	2	EA	\$1,750.00	\$3,500.00	
10.5	Miscellaneous Class I trail striping, signage and bollards	0.15	MI	\$5,000.00	\$750.00	
10.7	Private driveway crossing	1.00	EA	\$1,000.00	\$1,000.00	
	Sub-total					\$5,250.00
11	Right-of-Way Acquisition - includes Acquisition, Project Development Permits, Utility Relocation Assistance and Title & Escrow.					

	ITEM & ASSUMPTIONS	QTY	UNIT	UNIT COST	COST	SUB TOTAL
11.1	Right-of-Way	18,752	SF	\$2.00	\$37,504.00	
	Sub-total				\$37,504.00*	
					SUBTOTAL	\$102,089.54
				CONTINGENCY	20%	\$20,417.91
				SURVEYING	5%	\$5,104.48
				PLANS, SPECIFICATIONS AND ENGINEERING	15%	\$15,313.43
				ENVIRONMENTAL PERMITTING	10%	\$10,208.95
				MITIGATION	3%	\$2,552.24
				CONSTRUCTION ENGINEERING	15%	\$15,313.43

***Right-of-way cost is not included in the subtotal used to determine contingencies and allowances; but is included in the Total Cost, based on a "placeholder" assumed acquisition cost of \$2.00 per square foot.**