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THE CHORRO VALLEY TRAIL
FROM CAL POLY TO CUESTA COLLEGE

by

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Chapter 1
Introduction
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1. Introduction

This document is the result of research and investigation into the Chorro Valley Trail connection between Morro Bay and San Luis Obispo, specifically regarding the design of the trail's connection with the Cal Poly Campus. This chapter introduces the Cal Poly to Cuesta College campus trail connector’s role in completing the California Coastal Trail (CCT) and Chorro Valley Trail (CVT) and summarizes the work that has been accomplished regarding the CVT project and other CCT connections throughout San Luis Obispo County.

Document Overview

The purpose of this document is to investigate the section of trail connecting the Cuesta and Cal Poly campuses, as proposed by the Chorro Valley Trail Study, using research, case studies and best practices for integrating the path into Cal Poly’s future growth. In order to make an informed design proposal for the Cal Poly to Cuesta College connector, research on the CCT and CVT, as proposed by the SLO County Parks & Recreation Department, is necessary in ensuring the following Design Proposal (Chapter 6) abides by their overall goals and standards.

California Coastal Trail

The CCT seeks to provide a continuous, 1,200 mile long interconnected trail system along the coastline of California, passing through 15 counties including the County of San Luis Obispo. Its purpose is to encourage appreciation for the coast’s natural resources and promote non-motorized transportation. The CCT caters to a variety of non-motorized trail users, including but not limited to pedestrians, cyclists, runners, and equestrians. The trail takes on many forms and is not necessarily always in the form of a separated paved path, and ranges from informal footpaths, paved sidewalks, road shoulder, to separated bicycle paths, crossing a variety of scenic vistas.

Examples of the Coastal Trail in the County of San Luis Obispo include the Pismo Beach Promenade in Pismo Beach, the Pismo to Grover beach boardwalk, and the Harbor walk in Morro Bay. Other segments to be completed include segments between Port San Luis Harbor and Avila Beach and a connection from Avila Beach to Pismo Beach as well as a Morro-Bay to Cayucos Connector.
Chorro Valley Trail
The CVT is a multipurpose trail that will connect the Cities of Morro Bay and San Luis Obispo, with additional connections to the Cuesta and Cal Poly campuses. The multipurpose trail project is supported by San Luis Obispo Council of Governments (SLOCOG), the Cities of Morro Bay and San Luis Obispo, and San Luis Obispo County.

As illustrated by Figure 1.1, the CCT should ideally run along the coastline connecting Montana de Oro State Park to Avila Beach. However, because of the Diablo Canyon Power Plant’s interference with the connection, an alternative route through the Irish Hills is being pursued. Regardless, cyclists tend to favor the Pacific Coast Bike Route along Highway 1 (Figure 1.3) where the CVT route is proposed.

As a small segment of a larger regional route and state-sized trail system, the Design Proposal was prepared using CVT most feasible alignments, many of which place the trail along Highway 1, overlapping the Pacific Coast Bike Route.

Project Goals
The goals of this document align with the larger CVT goals, the SLO County Parks & Recreation element, SLO County Bike Plan, SLO County Agricultural Element, SLOCOG Regional Trail Plan, and Cal Poly Master Plan Update.

The Chorro Valley Trail - From Cal Poly to Cuesta College Project Goals are as follows:

- Provide an accessible scenic bike route accessible to a variety of trail users
- Provide a safe route for non-motorized transportation between the Cuesta College and Cal Poly campuses
- Encourage the use of non-motorized transportation to foster a healthy community
- Complete the California Coastal Trail in San Luis Obispo County
- Recommend the type and location of support facilities along the trail (parking area, restrooms, maps, signage, signage, etc.)
- Provide non-motorized access to scenic views and natural resources

Figure 1.3: Map of the CCT in San Luis Obispo County. http://californiacostaltrail.info/cms/pages/trail/done.html
List of Terms

- **Class I path**: Provides a completely separate right-of-way for the use of bicycles and pedestrians with minimal cross-flow traffic.

- **Class II path**: Provides striping for one-way travel on a street or highway.

- **Class III path**: Provides for shared use between bicycles and vehicle traffic or pedestrians

Figure 1.4: Example of a Class I bicycle and pedestrian path. https://upload.wikimedia.org/wikipedia/commons/b/bd/Rio_Hondo_at_Rosemead.jpg

Figure 1.5: Class II path example. http://la.streetsblog.org/wp-content/uploads/sites/2/2014/05/TEMPLE-CITY-6-14May18.jpg

Figure 1.6: Class III path example. https://bikeable.files.wordpress.com/2010/10/dsc012501.jpg
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Chapter 2
Implementing the Chorro Valley Trail Study
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2. Implementing the Chorro Valley Trail Study

This chapter gives an overview of SLOCOG’s Chorro Valley Trail Study, identifying goals most relevant to this document and outlining preliminary design guidelines and anticipated conflicts related to both the Cuesta College and Cal Poly campuses.

The Chorro Valley Trail Study

SLOCOG received funding from a Federal Scenic Byway Grant to complete the Chorro Valley Trail Study, assessing the feasibility of a multipurpose trail connecting the Cities of Morro Bay and San Luis Obispo. The document is a long range planning study identifying environmental, cultural, and other constraints as well as a preliminary trail alignment, initial design, and a vision for future trail construction. Information gathered from Cal Poly Professor, Eugene Jud and students in his CE 572 course helped lay the foundation for the study and the trail's preliminary routes as described in the Chorro Valley Trail Study document.

Trail alignments proposed by the Chorro Valley Trail Study were determined feasible through the use of community outreach, primarily through meetings with landowners along Highway 1, as well as a preliminary environmental assessment and analysis of existing conflicts and road conditions. The CVT, as proposed in the Chorro Valley Trail Study, has the support of SLO County Bike Advisory Committee, the County Trails Committee, and the SLO City Bike Advisory Committee. The Chorro Valley Trail Study identifies the Cal Poly Campus to Cuesta College connection as a priority section to implement.

Common Goals

The following Chorro Valley Trail Study goals were found to be especially relevant to the Cal Poly to Cuesta College connection and were considered when developing the Design Proposal.

- Design an aesthetically pleasing bikeway with scenic views of landscapes characteristic of San Luis Obispo County
- Maintain and enhance scenic view-sheds along the trail corridor
- Provide a separated bicycle path near Highway 1 whenever a parallel local road is not available.
- Provide support facilities for trail users: parking/staging areas,
restrooms, maps and signs for information, guidance and environmental education
• Promote public awareness of natural and cultural resources by installing educational materials on the corridor
• Integrate community concerns into project design and trail construction through public outreach and involvement
• Construct all Class I, II, and III bikeways in accordance with the current California Manual of Uniform Traffic Control Devices (MUTCD), Chapter 1000 of the Highway Design Manual, and the California Streets and Highway Code, Sections 890.8 and 891
• Provide trail fencing where necessary to discourage trespass onto neighboring land

**Design Guidelines & Identified Conflicts**
The Chorro Valley Trail Study specifies design guidelines for the CVT’s width, materials, etc., as well as identifies opportunities and constraints related to bicycle / vehicle conflicts.

**The CVT & Cal Poly**
The Chorro Valley Trail Study includes multiple feasible trail alignments entering San Luis Obispo by way of Highway 1 and Cal Poly’s campus. Figure 2.3 illustrates what was found to be the most feasible connection with Cal Poly considering existing infrastructure, environmental impacts, land acquisition, etc., specified in the Study. The Study’s alignment connects to Cal Poly’s campus at Mt. Bishop Rd. continuing to Highland Dr. as a shared roadway and bicycle boulevard. The Study identifies specific intersections in need of improvement, including improvements at the Mt. Bishop Rd. / Highland Dr. and Mt. Bishop Rd. / Stenner Creek intersections (circled in red in Figure 2.3) as well as improvements to nearby sidewalk and pedestrian crossings. The Design Proposal addresses these concerns, providing conflict resolution at the Mt. Bishop Rd. / Highland Dr., Mt. Bishop Rd. / Unnamed Cal Poly Road, and Mt. Bishop Rd. / Stenner Creek Rd. intersections on Cal Poly’s campus.

As the Cal Poly to Cuesta College connection is part of the CVT, the Chorro Valley Trail Study dictates its trail route and design. The Design Proposal follows the Study’s recommendations closely, only diverting from its recommendations to either better fit the future growth of Cal Poly’s campus or to improve the safety of bicycles and pedestrians.

The Chorro Valley Trail Study considers the use of the Stenner Creek path facilities located on Figure 2.3 for the path’s integration into campus and has identified it as a Class I alternative to the shared bike boulevard proposed on Mt. Bishop Rd. However, the Design Proposal recommends...
Figure 2.3: Chorro Valley Trail Study Cal Poly Connection Design Guidelines & Most Feasible Alignment (Highlighted in green)
Figure 2.4: Chorro Valley Trail Study CA Men’s Colony Section Design Guidelines & Most Feasible Alignment (Highlighted in green)
the use of Mt. Bishop Rd. for the trail’s future continuation south along Brizzolara Creek to meet Santa Rosa St., as proposed in Cal Poly’s Master Plan Update (Figure 2.2).

**The CVT & CA Men’s Colony Section**

Traveling from the Cal Poly campus, the CVT passes the California Men’s Colony and continues north to connect to Cuesta College. The Chorro Valley Trail Study identifies one intersection conflict along the most feasible route, as identified in Figure 2.4. As stated previously concerning conflicts on Cal Poly’s campus, the Design Proposal described later in this document seeks to solve this conflict through intersection improvements.

**The CVT & Cuesta College**

The Chorro Valley Trail Study’s most feasible alignment places the CVT on the Cuesta College campus at the Highway 1 / Hollister Rd and Highway 1 / Education Dr. intersections. As illustrated by Figure 2.5, the Study calls for improvements at both intersections. As the CVT crosses Highway 1 at Hollister Rd., the Design Proposal suggests improvements for that intersection specifically. The Study does not call for drastic improvements to the Cuesta College campus as there are already existing sidewalks and striping providing internal access.
Figure 2.5: Chorro Valley Trail Study Cuesta Connection Design Guidelines & Most Feasible Alignment (Highlighted in green)
Chapter 3
Case Studies
3. Case Studies

This chapter includes three case studies and related best practices that were found to be relevant to the Cal Poly to Cuesta College connection. The following case studies are included specifically to provide ideas and direction for solving anticipated conflicts with bicycles, pedestrians, and vehicles.

**East Coast Greenway**

<table>
<thead>
<tr>
<th>Location</th>
<th>Canada to Key West, FL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>3,000 miles</td>
</tr>
<tr>
<td>Trail Type / Materials</td>
<td>Varies</td>
</tr>
</tbody>
</table>

The East Coast Greenway (ECG) is a 2,900 mile long multi use trail connecting Calais, Maine, at the Canadian border, to Key West, Florida. Along with an additional 2,000 miles of alternative routes, the ECG offers signage, maps, and guides to help tourists navigate the route and explore urbanized and historical corridors. The trail is very diverse, ranging from off road, rural segments made of gravel, to central city, paved sections.

The ECG is similar to the CCT in many ways. Specifically, the portion of the ECG passing through New Jersey stretches 90 miles between Pennsylvania and New York connecting urban centers as well as rural and suburban communities. Currently, 54% of the trail is on traffic free paths with the remaining segments alternate between park paths and on-road sections. The trail is continually being improved upon as new traffic free paths are still being completed with the ultimate goal of becoming completely traffic free to provide a safe route for bikers, families, children, and more.

There are six informational kiosks on the New Jersey portion of the ECG, all installed by volunteers. The East Coast Greenway Alliance (ECGA) has worked hard to ensure the trail is navigable by installing wayfinding signs and creating a biking and walking guide for the New Jersey portion.

**Lessons Learned**

What makes this similar to the CVT project is its diverse scenery and creative connections. The CVT is expected to travel through an urban center, university campus, rural stretches, and end in a small coastal
The Chorro Valley Trail - From Cal Poly to Cuesta College

community. The trail’s diversity is expected to attract a diverse group of users and will call for creative ways to keep the trail interesting including bike and pedestrian facilities, signage, and safety measures as described in the Design Proposal.

UC Davis

<table>
<thead>
<tr>
<th>Location</th>
<th>UC Davis Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Unknown</td>
</tr>
<tr>
<td>Trail Type / Materials</td>
<td>Varies</td>
</tr>
</tbody>
</table>

UC Davis has taken great efforts in the past forty years to make bicycling a way of life on campus. As a result, the campus is now known for being one of the most bicycle friendly university campuses in California.

Campus transportation infrastructure has seamlessly integrated bicyclist safety needs and amenities with the following improvements:

• The addition of safety lighting at the pedestrian and bicyclist scale (not just for vehicles).
• A round-about intersection to ease the flow of pedestrians and bicyclists in a heavy traffic area.

The Chorro Valley Trail connection to Cal Poly’s campus can take ideas from these examples of bicycle infrastructure on the UC Davis campus to more fluidly bring bicyclists from the trail onto campus. Figure 5 illustrates one possibility of the key intersection of the trail and campus, identified later in this document.

Lessons Learned

UC Davis models an excellent example of prioritizing the safety of
bicycles and pedestrians on a university campus. The CVT can gain ideas for reducing pedestrian/bicycle/vehicle conflicts through the UC Davis campus’ bicycle infrastructure illustrated in Figures 3.7-8. Figure 3.5 illustrates pedestrian scaled lighting, later mentioned in the Design Proposal for the Mt. Bishop Rd. portion of the trail.

Figure 3.6: City of Davis Bike Map. http://taps.ucdavis.edu/sites/taps.ucdavis.edu/files/attachments/bikemap.pdf

Figure 3.7: UC Davis bicycle intersection. http://ucdavis-magazine.ucdavis.edu/issues/win08/graphics/logo_bikecircle_large.jpg

Figure 3.8: Davis bike intersection. http://www.davisenterprise.com/files/2014/03/0306Holmes1w-1024x682.jpg
UCSD’s Bicycle & Pedestrian Master Planning Study (UCSD BPMPS)

<table>
<thead>
<tr>
<th>Location</th>
<th>UCSD Campus, Gillman Dr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Approximately 0.6 miles</td>
</tr>
<tr>
<td>Trail Type / Materials</td>
<td>Class II bike lane</td>
</tr>
</tbody>
</table>

UCSD’s Bicycle & Pedestrian Master Planning Study, adopted in 2012, promotes a safe, convenient, and efficient environment for bicyclists and pedestrians while setting a vision for bicycle and pedestrian circulation. The goal of the Study is to create a seamless connection between the University’s campus and surrounding city by integrating it into the City of San Diego’s Bicycle Master Plan Update and encouraging bicycle and pedestrian commutes to the campus. The BPMPS seeks to provide improved safety through education and training programs and assesses the University’s needs and outlines five priority projects to be completed.

The “Gilman Drive Bicycle Lane Connection” project was found to be relevant to the Cal Poly to Cuesta College connection. Gilman Dr. is the University’s most traveled roadway, used by pedestrians, vehicles, bicycles, and commercial vehicles entering and exiting campus. Problems associated with the location included:

- Gap in the bicycle facility network
- Pedestrians crossing the street outside of the marked crosswalk
- Excessive vehicle speeds
- Unsafe conditions for bicyclists and pedestrians

To address these problems, the project proposed the following improvements to Gilman Dr.:
- Extending the existing Class II bike lane by narrowing the median and travel lanes between Osler Lane and Villa La Jolla Drive.

To the Gilman Dr. / Myers Dr. intersection:
- Adding a traffic signal
- Squaring-up the intersection with curb extensions
- Directing pedestrians to the crosswalk by installing a median barrier with plantings.
Lessons Learned

Gilman Dr. is a low speed, busy roadway, serving a variety of users. Cal Poly’s Mt. Bishop Rd. is similar. With Master Plan Update improvements, the road will host pedestrians and bicyclists traveling to the residential neighborhood, CVT trail users, and vehicles traveling to nearby agricultural and outlying campus facilities. With Mt. Bishop Rd.’s increase in traffic, the roadway will require infrastructural improvements to increase the safety of all users. These improvements to Mt. Bishop Rd. are discussed in more detail in the Design Proposal.

The Gilman Dr. project applies simple road infrastructural improvements that reduce vehicle dominance and protect bicyclists and pedestrians. The Design Proposal can apply similar principles by prioritizing CVT users and adapting the roadway’s use for the Cal Poly Master Plan Update’s future uses.
Chapter 4
Guiding Documents
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This chapter identifies relevant documents guiding the design of the Chorro Valley Trail and Cal Poly to Cuesta College Connection, namely the County’s Open Space Plan, comprised of the Conservation & Open Space, Agricultural, and Parks & Recreation Elements. Relevant policies in the tables below were analyzed and incorporated into the [insert document title] Design Proposal. The Chorro Valley Trail Study and existing Cal Poly Master Plan Update documents are not included in this analysis as they are analyzed in their own respective chapters (Chapters 2 & 5).

SLOCOG Regional Transportation Plan (RTP) | Adopted 2014

The RTP sets a vision for SLO County’s transportation system for the next twenty years, striving to further improve our quality of life and promote sustainability while meeting our future mobility needs. The Design Proposal abides by the goals of SLOCOG RTP’s Active Transportation chapter, by providing an easily accessible, multi-use trail linking the Cuesta and Cal Poly campuses. Although the CVT is supported by the RTP, and included in its list of active transportation projects (Figure 4.2), the Design Proposal specifically helps implement the RTP’s following policies:

<table>
<thead>
<tr>
<th>Table 4.1: RTP Relevant Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT 1</td>
</tr>
<tr>
<td>AT 2</td>
</tr>
<tr>
<td>AT 10</td>
</tr>
</tbody>
</table>

Although this document mentions the CVT, it does not directly impact the design of the Cal Poly to Cuesta College connection.
The Chorro Valley Trail - From Cal Poly to Cuesta College

Figure 4.2: RTP Active Transportation Projects in San Luis Obispo Map

Active Transportation Projects: San Luis Obispo

Proposed Project Type

- Class I (bike paths)
- Class II (bike lanes)

Existing Bikeways

- Class I
- Multi-Use Trail
- Class II
- Class III

Sharrow
Bicycle Boulevard
Recreational Route
Pacific Coast Bike Route

Date updated: May 25, 2015

Figure 4.2: RTP Active Transportation Projects in San Luis Obispo Map
SLO County Agricultural Element | Adopted 2010

The Agricultural Element addresses agricultural issues by addressing the protection of natural resources and open space as well as agricultural needs, minimizing impacts to agriculture. The Design Proposal supports the following policies of the Agricultural Element:

<table>
<thead>
<tr>
<th>Table 4.2: Agricultural Element Relevant Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGP 25</td>
</tr>
<tr>
<td>AGP 26</td>
</tr>
<tr>
<td>AGP 32</td>
</tr>
</tbody>
</table>

The Design Proposal abides by these policies focused on protecting open space resources. AGP 25, 26, and 32 are implemented through the CEQA review process and therefore have no direct impact on this document. However, the Design Proposal closely abides by the Chorro Valley Trail Study’s recommended routes which were chosen with sensitive habitat and agricultural lands in mind. AGP 32 is implemented through the County Parks & Recreation Element discussed below.

SLO County Conservation & Open Space Element | Adopted 2010

The Conservation and Open Space Element emphasizes the protection and management of natural resources and its integration into land use planning processes. The policies in the table below were found to either impact the design or be supported by the Design Proposal:

<table>
<thead>
<tr>
<th>Table 4.3: Conservation &amp; Open Space Element Relevant Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Quality Policies</strong></td>
</tr>
<tr>
<td>AQ 1.2</td>
</tr>
<tr>
<td>AQ 1.5</td>
</tr>
<tr>
<td>AQ 1.6</td>
</tr>
<tr>
<td>AQ 1.7</td>
</tr>
<tr>
<td><strong>Biological Resources Policies</strong></td>
</tr>
<tr>
<td>BR 1.7</td>
</tr>
<tr>
<td>BR 5.1</td>
</tr>
<tr>
<td><strong>Open Space Policies</strong></td>
</tr>
<tr>
<td>OS 2.9</td>
</tr>
<tr>
<td>OS 3.1</td>
</tr>
<tr>
<td><strong>Visual Resources Policies</strong></td>
</tr>
<tr>
<td>VR 8.2</td>
</tr>
</tbody>
</table>
The creation of the CVT supports air quality policies by providing an alternative transportation route between the Cities of Morro Bay and San Luis Obispo, thereby decreasing the need for vehicle travel and reducing vehicle miles traveled. The biological resources policies are specifically implemented through the CEQA process later on in the development of the CVT and Cal Poly to Cuesta College connection. However, as stated before, the CVT Study addresses these concerns and dictates the most feasible route based on environmental concerns. The CVT and Design Proposal help to implement policy OS 2.9 by creating a recreational use on public lands. OS 3.1 is implemented through the CVT Study and Design Proposal’s proposed educational signage, promoting alternative transportation and educating trail users of the surrounding environment. VR 8.2 is implemented through proposed signage as well.

**SLO County Parks & Recreation Element | Adopted 2006**

The Parks & Recreation Element contains goals and policies to acquire, develop, and maintain parkland areas for passive and active recreation, and natural areas for passive recreation while protecting sensitive resources. The Cal Poly to Cuesta College connection is defined in the Parks & Recreation Element as a linear park, being narrow and long in configuration and providing recreational areas such as rest areas, picnic areas, or scenic overlooks. The CVT Study has proposed trail design in accordance with the SLO County Parks & Recreation Element's Appendix B which dictates trail design standards for pedestrian, bike, horse, and multi-use trails, signage, and trail amenities applicable to facilities on properties within the County’s jurisdiction. The Design Proposal therefore also abides by its standards for all sections on County lands.

**SLO County Bikeways Plan | Adopted 2010**

The Bikeways Plan was prepared by San Luis Obispo County to identify and prioritize bikeway facilities throughout the unincorporated area of the County. These facilities include bike lanes, routes, parking, connections with public transportation, educational programs, and funding. The Plan provides an entire bicycle network with design guidelines, maps, safety analysis, and signage and pavement markings according to the Caltrans Highway Design Manual (HDM) & California Manual on Uniform Traffic Control Devices (MUTCD). As the SLO County Parks & Recreation Element supersedes the County Bikeways Plan, the Bikeways Plan does not directly dictate the design of the Cal Poly to Cuesta College connection.
Chapter 5
Cal Poly Master Plan Update
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5. Cal Poly Master Plan Update

This chapter addresses how the Cal Poly Master Plan impacts the Cal Poly to Cuesta College connection, including the Master Plan Update currently underway. It dictates the trail’s design objectives by looking at how the current Cal Poly Master Plan regulates trails on campus and what we know of the Master Plan Update’s goals related to the trail.

The Cal Poly Master Plan is the guiding document for how the campus will grow within the next twenty years. It dictates land use, addresses academic program demand, physical and environmental constraints and opportunities, and the capitol and operating budget required to support its future enrollment. The Master Plan sets the locations, sizes, and types of land use, facility and circulation systems necessary to support the University’s expected future growth. The University began the two-year updating process in late 2014 and has developed concept maps to be used as the basis for the new Master Plan text.

Because the Cal Poly Master Plan Update is well underway and the addition of the CVT and Cal Poly to Cuesta College connections into the plan is unlikely, the preliminary design of the trail will closely follow the anticipated growth of the Cal Poly campus, as dictated by the Master Plan Update concept maps and currently released documents, to encourage its integration in the future. A primary goal of the Design Proposal is to accurately align the SLOCOG proposed route with Cal Poly’s future transportation infrastructure.

Figure 5.1: Master Plan Update Process as of Spring 2015.
The Existing Cal Poly Master Plan
The Design Proposal supports the following existing Master Plan principles:

<table>
<thead>
<tr>
<th>Sector Area</th>
<th>Master Plan Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circulation</td>
<td>Alternative transportation: a multi-faceted approach to alternative transportation should help foster a cultural shift from auto-dependency.</td>
</tr>
<tr>
<td></td>
<td>Vehicle trip reduction: traffic congestion can be reduced by car-pooling, alternative transportation and technology-mediated working, instruction, and other activities.</td>
</tr>
<tr>
<td></td>
<td>Access to campus: coordinate access to campus with city, county and other transit providers.</td>
</tr>
<tr>
<td></td>
<td>Bicycle friendly: increase bike use through safe and effective connections, an on-campus bike system, and bike parking and storage; service roads can be used for bike routes.</td>
</tr>
<tr>
<td></td>
<td>Compatibility of circulation systems: reduce conflicts among pedestrians, bikes and motorized vehicles</td>
</tr>
<tr>
<td></td>
<td>Safety: the circulation system in all modes must be safe.</td>
</tr>
<tr>
<td>Alternative</td>
<td>Convenience: work to make alternative transportation increasingly convenient.</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
</tr>
</tbody>
</table>

The Cal Poly segment of the trail does not fit into the existing Master Plan’s zoning maps. There are no specific guidelines for bike paths on the University’s campus. However, the Design Proposal conforms to Master Plan Update maps and documents that are currently released to the public.

Future Circulation
The Design Proposal complies with the Master Plan Update’s Refined Circulation Plan (Figure 5.2), proposing a Class II bike path on Mt. Bishop Rd., discussed in detail later in the Design Proposal.
Figure 5.2: Cal Poly Refined Circulation Plan
Figure 5.3: Cal Poly Refined Land Use Plan
Design Influences
The Cal Poly Master Plan Update has impacted the development of the Design Proposal to include the following preliminary design and analysis ideas:

- Making the trail to be more pedestrian accessible the closer it gets to campus, and allowing it to be more bicycle oriented the further it travels from campus.
- Incorporate bike route wayfinding signage on campus to promote use of the trail.
- Identify key intersections where bicycle and pedestrian safety infrastructure will be necessary and provide solutions to identified conflicts.
- Connect the trail to campus at an appropriate intersection, for the use of both Cal Poly students as well as the San Luis Obispo community and touring cyclists.
- Provide bicycle amenities at key entry points.

Land Use Plan
The Design Proposal complies with the Master Plan Update’s Refined Land Use Plan (Figure 5.3) and was developed with the intention of supporting the new land uses. The Design Proposal recommends multiple bicycle and pedestrian amenity locations on the University’s campus, discussed in detail in the Design Proposal. The location of amenities has been chosen to compliment the use of future recreation fields and the proposed residential neighborhood at the north end of Mt. Bishop Rd.

Conclusion
As the Cal Poly Master Plan Update will dictate the University’s future land uses and growth it is important to integrate its goals into the Design Proposal to allow for easy integration of the CVT.
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Chapter 6
Design Proposal
6. Design Proposal

This chapter contains the final design proposal of the CVT from Cal Poly to Cuesta College, including final route selection, key intersection conflict solutions, and proposed trail designs and amenities.

The CVT from Cal Poly to Cuesta College is an approximately 4.75 mile multi-use trail maximizing bicycle and pedestrian safety and activity between the Cal Poly and Cuesta College campuses abiding by the San Luis Obispo community’s goals and overarching documents described in Chapter 4. This proposal abides by the CVT Study’s design and operating guidelines and follows the Study’s most feasible alignment illustrated in Figures 2.3-5 unless otherwise stated. Any diversions from the Study’s recommendations were made to better integrate the trail into Cal Poly’s future growth or to ensure increased bicycle and pedestrian safety.

This section of the CVT passes through lands under Cal Poly, Camp San Luis Obispo, County of San Luis Obispo, and Cuesta College ownership, and therefore incorporates multiple design guideline documents. These include the NACTO Urban Bikeway Design Guidelines, the State Highway Design Manual, and the County Parks & Recreation Element.
**Cal Poly Connection**

The CVT connection with the Cal Poly campus is proposed through Mt. Bishop Rd. by Stenner Creek Rd, as dictated by the Chorro Valley Trail Study's Alignment A (Appendix A). Utilizing Mt. Bishop Rd. encourages use of the path by the Master Plan Update's proposed residential neighborhood placed at the northern end of Mt. Bishop Rd. (Figure 5.3). The path serves as a safe pedestrian connection between future housing and the campus core as well as a path for cyclists, runners, and CVT users entering and exiting San Luis Obispo.

At the southern end of Mt. Bishop Rd., the path intersects Highland Dr. and is expected to continue south along Brizzolora Creek as illustrated in Figure 6.3.

As previously discussed, the Chorro Valley Trail Study calls for a Class III shared bike lane for the Mt. Bishop Rd. section of the CVT. However, this proposal recommends road improvements and Class II bicycle lanes in both directions due to an expected increase in traffic from the Master Plan Update's residential neighborhood, recreational fields, and other new facilities in Figure 5.3. Additional factors considered in this decision include road slope, width, and vehicle visibility (Figure 6.2). Since Mt. Bishop Rd. ranges in elevation, a Class II lane was recommended as bicycles will most likely be traveling significantly slower than vehicle traffic on uphill sections. Given the slope variation and narrow road width, a Class II path was determined the safest trail option for bicyclists.

**Cuesta College Connection**

As indicated by the Chorro Valley Trail Study, the trail connects to the Cuesta College campus by the two intersections on Highway 1 at Hollister Ave. and Education Dr. Anticipated bicycle / vehicle conflicts will depend on the final route decided by the SLO County Parks & Recreation department. This proposal follows the Chorro Valley Trail Study's most feasible alignment which enters Cuesta College at Hollister Ave., discussed further on in this chapter.
Trail Segments

Trail Segment 1

<table>
<thead>
<tr>
<th>Trail Segment 1 Specifications</th>
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</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
</tr>
<tr>
<td><strong>Trail Type</strong></td>
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<tr>
<td><strong>Trail Users</strong></td>
</tr>
<tr>
<td><strong>Additional Features</strong></td>
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Mt. Bishop Rd. currently has 12 foot lane widths and a large dirt shoulder on its East side facing the agricultural fields. With the Master Plan Update’s proposed facilities, vehicle and pedestrian traffic on this section of Mt. Bishop Rd. is expected to increase. This calls for roadway improvements, including:

- Vehicle lane narrowing to lower vehicle speeds
- Sidewalks on both sides of the roadway
- Class II bike lanes in both directions
- Pedestrian scale & street lighting

Figure 6.3: Trail Segment 1, cross-section A location.

Figure 6.4: Existing section of Mt. Bishop Rd. with discontinued sidewalk.

Figure 6.5: Existing section of Mt. Bishop Rd. with no delineation between road and parking lot, illustrating a conflict for bicyclists.

Figure 6.6: Existing Trail Segment 1; Cross-section A.

Figure 6.7: Proposed Trail Segment 1; Cross-section A.
**Trail Segment 2**

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<th>Trail Segment 2 Specifications</th>
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<td>Length</td>
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<td>Trail Type</td>
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<td>Trail Users</td>
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Trail Segment 2 stretches between Intersections 2 & 3, and currently consists of two 12 foot vehicle lanes, sporadically placed sidewalk, and dirt shoulders ranging from one to four feet in width as illustrated in Figure 6.8.

Figures 6.11 illustrates proposed improvements including:
- Continuing Trail Section 1’s Class II bike lanes in both directions
- Five foot sidewalk on one side of the roadway. This proposal recommends the south side to follow existing sidewalk infrastructure.

![Figure 6.8: Existing section of Mt. Bishop Rd. with no stable shoulder.](image)

![Figure 6.10: Existing Trail Segment 2; Cross-section B.](image)

![Figure 6.11: Proposed Trail Segment 2; Cross-section B.](image)
From Intersection 2, the CVT will travel through the Master Plan Update’s residential neighborhood. Depending on the neighborhood’s infrastructure, the trail at this point may become Class II or III until exiting the neighborhood and becoming a Class I path along Stener Creek.

The Chorro Valley Trail Study recommends a Class I path located on or adjacent to existing farm roads within Cal Poly lands, to be shared with farm vehicles occasionally. To prevent a conflict between trail users and farm vehicles, the Study suggests providing an additional parallel trail or path. Figure 6.13 below illustrates one option providing a 20 foot right-of-way consisting of a 12 foot wide two-way cycle track, four foot paved buffer area, and a two foot graded clearance on both sides of the trail. The four foot paved buffer area serves as an extra space allowing for both bicycles and farm vehicles to pass in the same direction momentarily.
Trail Segment 4

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Trail Segment 4 consists of a Class I trail placed on an old railroad grade, running adjacent to Highway 1. Figure 6.15 illustrates the proposed right-of-way and lane widths. Although this section of the CVT may not attract many pedestrians as is, there is potential for additional trails leading into El Chorro Regional Park and other County lands. The proposed trail design allows for flexibility and a wider range of users in the future.

This segment of the CVT also requires the construction of a bridge over Kern Ave. and Chorro Creek. To appease security concerns, the overpass needs to be fully enclosed with security fencing. The Chorro Valley Trail Study addresses fencing design in its Design and Operating Guidelines (Chapter 3).
Trail Segment 5

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Trail Segment 5 consists of a Class I bike path running between Highway 1 and Romauldo Rd. on the Cuesta College campus. This segment of the CVT is not expected to attract many pedestrians aside from the occasional Cuesta College student or staff member. Therefore this segment considers its primary use to be bicycling, and pedestrian use to be secondary. The path has a 20 foot right-of-way, two six foot bicycle lanes, and a four foot shoulder on each side, as pictured in Figure 6.15.

Continuing Segments

Heading North from Segment 5, the Chorro Valley Trail Study recommends continuing on Walter Creek Rd. onto Cal Poly lands, staying on the West side of Highway 1 until the CVT ends on South Bay Blvd. in Morro Bay and integrates into an existing Class II bike lane.
Trail Intersections

Intersection 1: Mt. Bishop Rd & Highland Dr.
Problem:
- Fast vehicle traffic on Highland Dr. driving onto Cal Poly’s campus
- No existing pedestrian crosswalk (will be more of a problem if the trail is extended across Highland Dr.)
- No existing pedestrian scaled lighting
- Difficult for bicyclists to turn left from Mt. Bishop Rd onto Highland Dr.

Proposed Improvements:
- Raised crosswalk to slow traffic on Highland Dr. (Figure 6.20)
- Bicycle turn lane and striping to increase bicycle visibility (Figure 6.21)
Intersection 2: Mt. Bishop Rd & Master Plan Update Rd
The intersection of Mt. Bishop Rd and the Unnamed Rd pictured in Figure 6.23, is the existing intersection. The Master Plan Update proposes a road intersecting the two existing roads from the East.

Problem:
• No existing intersection signal (not an immediate problem without the construction of the Master Plan Update road)
• No existing bike lane or sidewalk
• Will have three roads intersecting

Proposed Improvements:
• Create a small roundabout intersection with bicycle and pedestrian infrastructure. (Figure 6.24)
• Provide pedestrian and bicycle infrastructure at intersection. (Figure 6.25)
Intersection 3: Mt. Bishop Rd & Stenner Creek Rd

Problem:
- No existing bike lane or sidewalk
- No existing pedestrian crossing

Proposed Improvements:
- Provide striping to increase bicycle visibility. (Figure 6.27)
- Provide sidewalk and crosswalk for pedestrians. (Figure 6.29)
- Create a four-way stop intersection (with the addition of the Master Plan Update’s residential neighborhood). (Figure 6.27)
Intersection 4: Colony Dr & Santa Cruz Rd

Problem:
- No existing bicycle infrastructure at intersection
- Class I path might need to change to Class II or III upon approaching the intersection.
- Need to delineate Class I path crossing the intersection.

Proposed Improvements:
- Create a four-way stop intersection. (Figure 6.32)
- Class I striping across the intersection. (Figure 6.31)
Intersection 5: Highway 1 & Hollister Ave

Problem:
- High vehicle speeds on Highway 1
- No crosswalk on west side of intersection
- Existing intersection infrastructure allows for signalized bicycle and pedestrian crossing, however crossing improvements are needed.

Proposed Improvements:
- Painted bicycle and pedestrian crossing between Dairy Creek Rd. and Hollister Ave. (Figure 6.36)
- CVT users will use existing traffic light infrastructure to cross Dairy Creek Rd. and Highway 1.

Figure 6.34: Intersection 5. Google Earth Image of Existing HWY 1 & Hollister Ave. Intersection; CVT location in green.

Figure 6.35: Proposed Intersection 5.

Figure 6.36: Two-way cycle track striping in an intersection. http://edmontonbikes.ca/uploads/post/cyclist-death/IMGP0039-1024x768.jpg
Intersection 6: Walter Creek Rd. & Education Dr.

Problem:
- No existing bicycle or pedestrian crossing

Proposed Improvements:
- Include crossing markings for the CVT. (Figure 6.40)
- Provide stop or yield signage. (Figure 6.39)
Amenities

The CVT will be used by a variety of user types and therefore will adapt to respectful users along the route. Pedestrians are more likely to use the path closer to the Cal Poly campus. Therefore, this portion of the trail is designed with multiple trail surfaces, a wider right-of-way, and provides more facilities and amenities. There are two proposed locations for trail amenities on Cal Poly’s campus that are to be integrated into Cal Poly’s future development as the Master Plan is implemented.

The provision of a free parking area along the CVT is unlikely as it would be difficult to monitor or distinguish CVT users from those using surrounding areas and wanting to park for free. Restroom and parking facilities are already offered at the Regional Park and Cal Poly and Cuesta College campuses.

Figure 6.42: Location of amenities from Cal Poly to Cuesta College.
Location 1: Mt. Bishop Rd.
- Pedestrian oriented amenities including an outdoor exercise station, water fountain, and benches near the Master Plan’s new recreation fields.
- This portion of the trail should also include pedestrian-scale lighting to improve visibility and safety at night.
- Bike parking.

Location 2: Residential Neighborhood
- Amenities are integrated into the Cal Poly Master Plan Update’s Residential Neighborhood on the north end of Mt. Bishop Rd. Amenities include bike parking, bike lockers, and a bike repair station.

Location 3: El Chorro Regional Park
- Informational signage for surrounding locations.
- Directional signage.
- Opportunity to integrate CVT into Regional Park.
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Bibliography


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Appendix B
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