20TH STREET PEDESTRIAN/BICYCLE OVERCROSSING FEASIBILITY STUDY/ PROJECT STUDY REPORT EQUIVALENT

SR-99 Corridor Bikeway Facility Phase 5 (Bikeway 99)

December 2017

Prepared For:

City of Chico
Public Works - Engineering
411 Main Street
Chico, CA 95927

Prepared By:

Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630

PROJECT TEAM
SR99 Bikeway Feasibility Study

NAME	PROJECT ROLE	AFFILIATION
Brendan Ottoboni	Public Works Director (Eng)	City of Chico
Noel Carvalho	City Project Manager	City of Chico
Wyatt West	Assistant Engineer – Eng	City of Chico
Tracy Bettencourt	Regulatory and Grants Manager	City of Chico
Richard Liptak	Consultant Project Manager	Dokken Engineering
Rob Burns	Bridge Project Engineer	Dokken Engineering
Namat Hosseinion	Environmental Planner	Dokken Engineering
Jamie Formico	Right of Way	Dokken Engineering
Trin Campos	Civil Project Engineer	Bennett Engineering
Carlton Allen	Civil Design Engineer	Bennett Engineering
Shane Cummings	Geotechnical Engineer	Holdrege & Kull, an NV5 Company
Don MacDonald	Bridge & Wall Architect	MacDonald Architects
Loren Chilson	Traffic	Traffic Works
Nima Kabirinassab	Regional Planning Liaison & Intergovernmental Review Coordinator	Caltrans District 3

Table of Contents

List of Figures

List of Tables

Appendix

1.0 EXECUTIVE SUMMARY

The City of Chico 2030 General Plan, adopted by the City Council in April 2011 and amended March 2017, contains numerous goals and policies relating to the provision of multi-modal transportation facilities throughout the City to provide other modes, such as bicyclists and pedestrians, viable alternatives to vehicle travel, reduce greenhouse gas emissions, and increase the sustainability and health of the community. This policy document is supported by various implementing documents, including the 2012 Chico Urban Area Bicycle Plan and the City of Chico 2020 Climate Action Plan, both adopted by the City Council in November 2012. The General Plan and Bike Plan both demonstrate that the community of Chico values the Complete Streets concept that includes investment in a network of bicycle and pedestrian facilities. This is particularly important where physical barriers, such as busy roads (i.e., 20th Street), creeks, freeways, etc., can be overcome to further encourage bicycling and walking; thus, providing bikeway users with safe, direct and convenient paths of travel. Completion of Phase 5 of the SR-99 Corridor Bikeway Facility (Bikeway 99) implements the community's vision by closing the gap in infrastructure that currently separates the northern and southern sections of the nearly 7-mile long Bikeway 99.

The purpose of this Feasibility Study is to present viable alignment alternatives for Phase 5 of Bikeway 99, which includes crossing the congested 20th Street Corridor. To provide a comprehensive study of possible alternatives, seven alignments were studied. Each alignment alternative begins in the northwest corner of the Chico Mall parking lot and ends at the south end of Business Lane, transitioning into the soon to be constructed Phase 4 of the Bikeway 99. Alignment alternatives studied include:

- Four (4) Overcrossing Alignment Alternatives
- Two (2) At-Grade Crossing Alignment Alternatives
- One (1) Undercrossing Alignment Alternative

During the development of this Feasibility Study, the City hosted three community workshops to present existing conditions, constraints, opportunities, and potential alternatives to the community. The Project Team also met one-on-one with 18 business representatives within the project vicinity to discuss the various alternatives and potential impacts and benefits to their businesses. A project website (www.bikeway99.com) was developed to display community workshop locations and times, tracked the study's progress, provided an overview of past workshops for those unable to attend, and provided an electronic comment submittal form.

Safety, increased ridership and an improved user experience were common project objectives heavily reinforced by community input. The two architectural concepts the community thought best fit the environment were the "Mountain Valley" concept and the "Tree City" concept. The recommended alignment is best suited to meet these objectives. The recommended alternative alignment is Overcrossing Alternative 2, shown in Figure 1-1.

FIGURE 1-1: RECOMMENDED ALIGNMENT ALTERNATIVE

To assist in the development of a project that reflects the history, culture, and overall atmosphere of the City of Chico, a Project Architect was included on the Project Team to work with the community to develop three architectural concepts for the 20th Street Pedestrian Overcrossing. The "Tree City" architectural bridge concept was chosen as a public favorite. A rendering of this architectural bridge concept is shown in Figure 1-2.

FIGURE 1-2: RECOMMENDED ARCHITECTURAL CONCEPT "TREE CITY"

20TH STREET PEDESTRIAN/BICYCLE OVERCROSSING FEASIBILITY STUDY

Phase 5 will provide a direct, separated bicycle/pedestrian only facility over 20th Street, which currently acts as a physical barrier to bikeway users. Once complete, Bikeway 99 will provide a more direct alternative transportation and recreational path from Eaton Road to the Skyway (approximately 7 miles), consistent with the goals and policies of the City's General Plan and Bike Plan. For a complete overview of Bikeway 99, see Figure 1-3 on the following page.

Upon Chico City Council's approval of the Feasibility Study and selection of a preferred alternative, City staff will apply for Cycle 4 of the Active Transportation Program (ATP)to fund the project. The project milestone schedule is summarized in the table below.

Milestone	Start Date	End Date
Feasibility Study	2016	2017
PSR-PDS	2018	2018
PA&ED	2018	2019
PS&E and Right of Way	2019	2021
Construction	Spring 2022	

The project costs for the recommended alternative are:

Project Study Report	$50,000
Caltrans Review	$50,000
Project Report/Environmental Document	$350,000
Design (PS&E)	$1,425,000
Right of Way	$2,220,000
Construction (2022)	$9,500,000
Construction Management	$1,140,000
Total Project Costs (Rounded)	**$14,700,000**

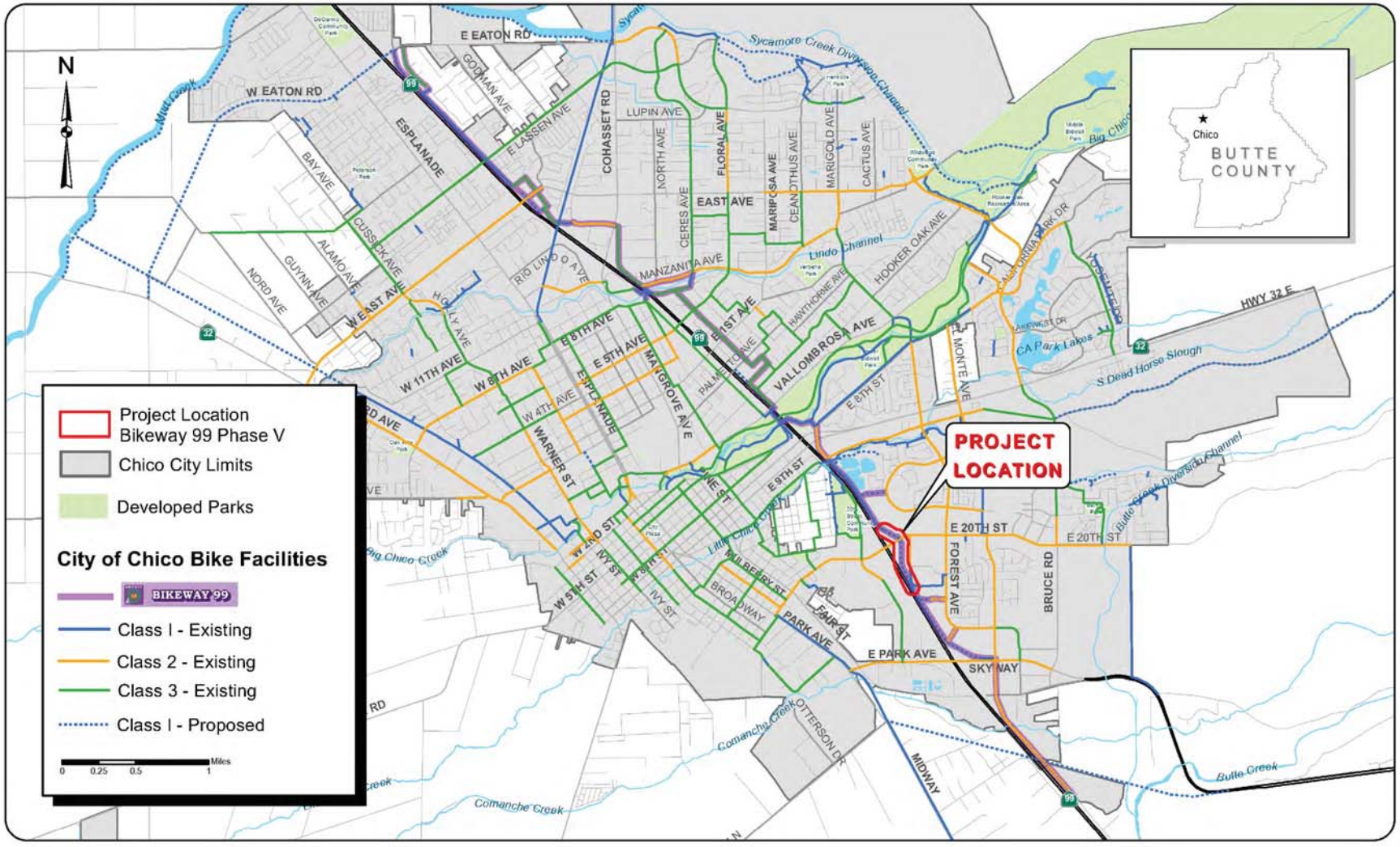


FIGURE 1-3 BIKEWAY 99 OVERVIEW

2.0 CURRENT SETTINGS

2.1 Introduction and Background

The City of Chico was founded in 1860 by General John Bidwell and incorporated in 1872. It has grown to over 33 square miles with a population of 92,464 (January 2016) in the incorporated area, and a greater urbanized area population of approximately 100,000. Chico is located in the Northern Sacramento Valley of California, 90 miles north of Sacramento on State Route 99 (SR-99), in Butte County, east of Interstate 5 (I-5).

Chico is known as a well-managed city that values quality infrastructure and services, and maintains a special sense of community and small-town living as it has developed into a vibrant regional center for business, recreation, and cultural activities. There are many recreational opportunities in and around Chico. Bidwell Park is one of the largest municipally owned parks in the nation (3,670 acres), is the focal point of the City's park system, and offers numerous paths for biking, hiking and equestrian use.

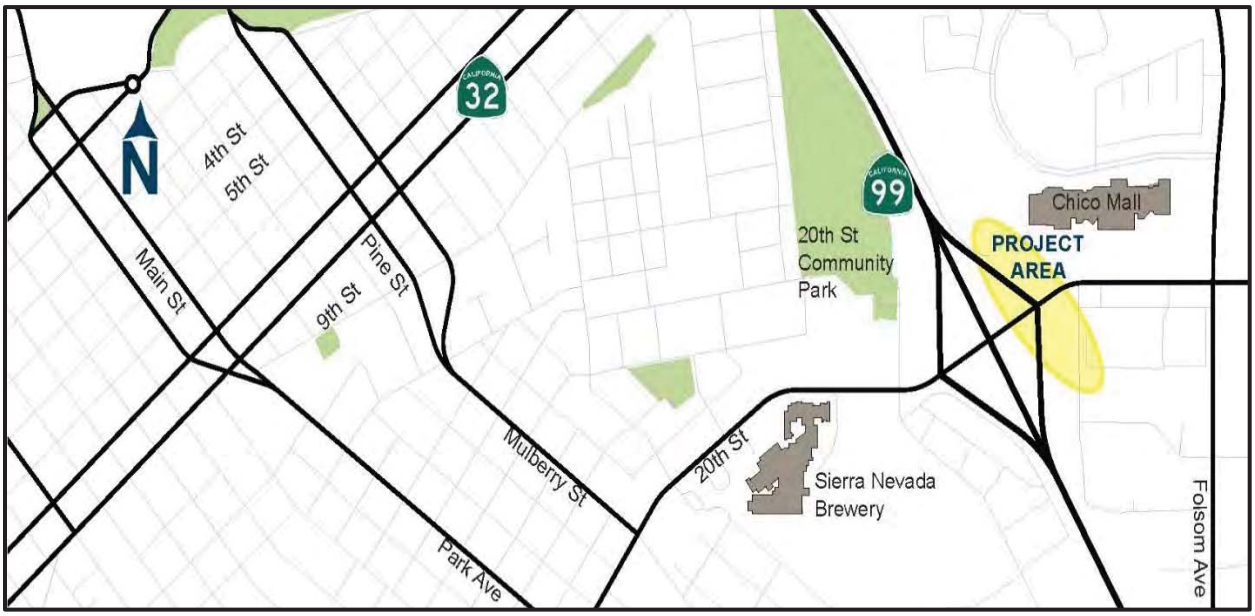


FIGURE 2-1: PROJECT LOCATION

2.1.1 Bikeway 99 Facility

Bikeway 99 is a regional facility that runs north and south along the SR-99 corridor, generally parallel to SR-99. The corridor is approximately 7 miles long and spans between Chico's north and south city limits. The Bikeway is to be a combination of Class I and Class II/III facilities. This is 2.8 miles of Class I trails, and 1.5 and 2.4 miles of Class II and III trails, respectively. The bikeway facilities begin at Eaton Road on the north side of Chico, and runs south ending near the Skyway. The facility has been divided down into five phases. Phases 1, 2, and 3 are constructed. Phase 4 is in the Plans, Specifications and Estimate (PS&E) phase with construction expected in 2018. This Feasibility Study discusses the practicality of various alternatives and recommends a preferred alternative for Phase 5, which includes a link across 20th Street.

2.1.2 East 20th Street Circulation Study

The East 20th Street Circulation Study was prepared in 2011 to evaluate long-term roadway alternatives. The study included an analysis of 10 intersections along the corridor, including three intersections directly within the vicinity of the Phase 5 Bikeway SR-99 Project (NB Off-Ramp and SB On-Ramp intersection, Business Lane intersection and the Chico Mall intersection).

Currently, along the 20th Street corridor, traffic conditions are within an acceptable level since most vehicles pass through the intersections without stopping, and traffic does not get backed up to the previous intersection. However, due to future growth east of the project area, traffic is expected to increase in the coming decades, and existing traffic conditions will worsen to longer wait times for drivers, more congested streets all along the corridor, and less desirable biking experience if nothing is done to improve traffic flow.

To mitigate this future growth and traffic congestion, an alternative to install roundabouts at multiple intersections to improve traffic flow during peak hours was included in this study. The benefits of roundabouts are a decreased number of vehicular collisions, decreased fuel consumption, less electricity usage, and less delay times. The roundabouts included in this study have been considered in the development of the alternatives presented this Feasibility Study.

2.2 Community Outreach

With a strong biking community and 18 businesses in the project vicinity, a major community outreach program was developed and implemented by the Project Team. The goal of this outreach effort was to engage the community early and to understand their needs and desires for the project so that the Project Team develops a project that will be championed by the community. This outreach included community workshops, one-on-one meetings with business representatives, as well as a website and a social media campaign.

2.2.1 Project Stakeholders

To provide comprehensive community outreach, the Project Team identified the following key project stakeholders:

TABLE 2-1: PROJECT STAKEHOLDERS

ORGANIZATION	DESCRIPTION/ MISSION STATEMENT	ROLE IN PROJECT
CITY OF CHICO INC. 1872	To protect and enhance our community's quality of life for present and future generations.	• CEQA Lead Agency
BCAG BUTTE COUNTY ASSOCIATION OF GOVERNMENTS	To prepare all state and federally required transportation plans and programs that are necessary for securing transportation funding for highways, streets and roads, transit, bike and pedestrian facilities, and other transportation modes.	• Funding support

ORGANIZATION	DESCRIPTION/ MISSION STATEMENT	ROLE IN PROJECT
Caltrans	Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.	• Project will impact right of way • Project Oversight • NEPA Lead Agency
CHICO VELO CYCLING CLUB	To encourage and promote safe bicycling through education and advocacy throughout Chico and Butte County.	• Supporter of project • Bikeway user
Butte County Air Quality Management District	To protect the people and the environment of Butte County from the harmful effects of air pollution.	• Supporter of project
Butte-Glenn Community College District	Butte College provides quality education, services, and workforce training to students who aspire to become productive members of a diverse, sustainable, and global society.	• Supporter of project • Bikeway user
California State University Chico	To assist students in their search for knowledge and understanding and to prepare them with the attitudes, skills and habits of lifelong learning in order to assume responsibility in a democratic community and to be useful members of a global society.	• Supporter of project • Bikeway user
B-Line Butte Regional Transit	Butte County's regional transit system	• Supporter of project • Phase 5 provides increased connectivity to transit system.
Mechoopda Indian Tribe of Chico Rancheria, California	Representing and informing the public on the history and culture of the Mechoopda Indian Tribe	• Element of Chico's culture to be incorporated into project.
Bidwell Park	Municipal park located in Chico	• Element of Chico's culture to be incorporated into project.
ChicoChamber	Voice of Chico businesses	• See Section 2.2.4 for a comprehensive list of businesses in the project area.
Downtown Chico Business Association	The Downtown Chico Business Association is a non-profit organization dedicated to enhancing and maintaining Downtown Chico as a vital and thriving retail and cultural center.	• Supporter of project • Bikeway user.

2.2.2 Community Workshops

The City hosted three community workshops to present existing conditions, constraints, opportunities and potential alternatives to the public during the preparation of the Feasibility Study. Workshop notification flyers were mailed to businesses and residents within a ¼ mile of the project site.

The Project Team personally contacted business representatives in the surrounding area to inform them of the project. Key members from the community participated in the workshops.

FIGURE 2-2: COMMUNITY WORKSHOP FLYERS

At each workshop, the Project Team outlined the general strategy and potential alternatives for the bikeway; small information stations were set up to speak individually with community members about their concerns and ideas on the project. The four information stations included the following topics:

- **General Information –** Information on all project elements was included at this station.
- **Bike Path –** The path alignment alternatives were featured and displayed at this station. All elements of the path were discussed. The community provided modifications to alignment alternatives and brainstormed additional alignment alternatives to be included in the Feasibility Study.
- **Structure Aesthetics –** Conceptual architectural sketches, photo realistic renderings and scaled models of bridge architectural concepts were displayed at this station. The Project Architect and Structural Engineer also developed concepts live with the community using a design charrette format.
- **Funding Information –** Information on the project funding goals, including securing Federal ATP or CMAQ funds for the project was displayed. This station also included funding information on the previous phases of Bikeway SR-99.

Over the course of the Community Outreach Phase, a total of 75 members of the public provided feedback about their preferred alternative and project elements that was important to them.
A complete list of public feedback is included in the Appendix B.

Community Workshop 1 (December 14, 2016)

Community Workshop 1 was held on Wednesday, December 14th at the City of Chico Municipal Building from 6 p.m. to 8 p.m. At this meeting, the Project Team presented the initial concept of the project along with a list of seven potential alternatives for public consideration.

FIGURE 2-3: STRUCTURE AESTHETICS STATION AT COMMUNITY WORKSHOP 1

Members of the community had the opportunity to discuss their thoughts and express their concerns about the project one-on-one with the Project Team. The Project Team recorded comments from the public on poster boards. Community members also had the opportunity to complete a comment card specifying their preferred alternative and any additional input. Recurring public comments are summarized below, and a complete list of public feedback is included in the Appendix B.

- The surrounding project area is unsafe, due to high traffic levels, and the increased homeless population. Community members worry about their safety when traveling through this area.
- Install security cameras to deter criminal activity.
- Undercrossing tunnel would attract transients and be more susceptible to crime.
- Concerns about safety crossing 20th Street. An at-grade crossing would put bicyclists at risk.
- An overcrossing would be the most direct and efficient route.
- Some business representatives prefer alternatives that pass through Business Lane.

Community Workshop 2 (April 19, 2017)

Community Workshop 2 was held at Oxford Suites, located within the project area, on Wednesday, April 19th from 6 p.m. to 8 p.m. A refined list of project alignments based on feedback from the first community workshop was presented along with three new architectural concepts for overcrossing alternatives. Scaled models of these architectural concepts were displayed to enable the community to envision the proposed project in their community and to better assess alternatives.

FIGURE 2-4: SCALED MODELS OF OVERCROSSING ARCHITECTURAL CONCEPTS

Community members had the opportunity to meet with the Project Team and discuss concerns about the bike path, including measures to provide safety to bicyclists and promote ease of access to the path. Comment cards were distributed to survey community members' preference of proposed architectural concepts, and to gather additional input. Community comments are summarized below, and a complete list of public feedback is listed in the Appendix B.

- The "Tree City" bridge concept is preferred by most of the community members.
- Some expressed concerns on the funding source for the project. They felt local funds should not be used to fund an intricate bridge design.
- An overcrossing is preferred as it is more direct and less dangerous than an at-grade crossing
- An at-grade crossing may adversely affect traffic.
- Members of the public reiterated safety concerns about the surrounding area.
- An intricate bridge design will beautify the area.

Chico Farmer's Market (June 22, 2017)

In the interim between Workshop 2 and Workshop 3, the Project Team set up an information booth at the Chico Farmers Market to build public awareness and promote interest. Members of the Project Team answered questions about the project and gathered feedback from the public in the form of comment cards. Members of the community were invited to attend the final community workshop to gain a thorough understanding of the scope of the project.

FIGURE 2-5: PROJECT BOOTH AT FARMERS MARKET

Community Workshop 3 (July 12, 2017)

Community Workshop 3 was held at the Chico Municipal Building on Wednesday, July 12th from 6 p.m. to 8 p.m. This meeting provided an opportunity for the community to review the recommended alternative based on input from previous workshops. Community feedback showed strong support for the preferred alignment (Overcrossing Alternative 2).

FIGURE 2-6: COMMUNITY WORKSHOP 3 PRESENTATION

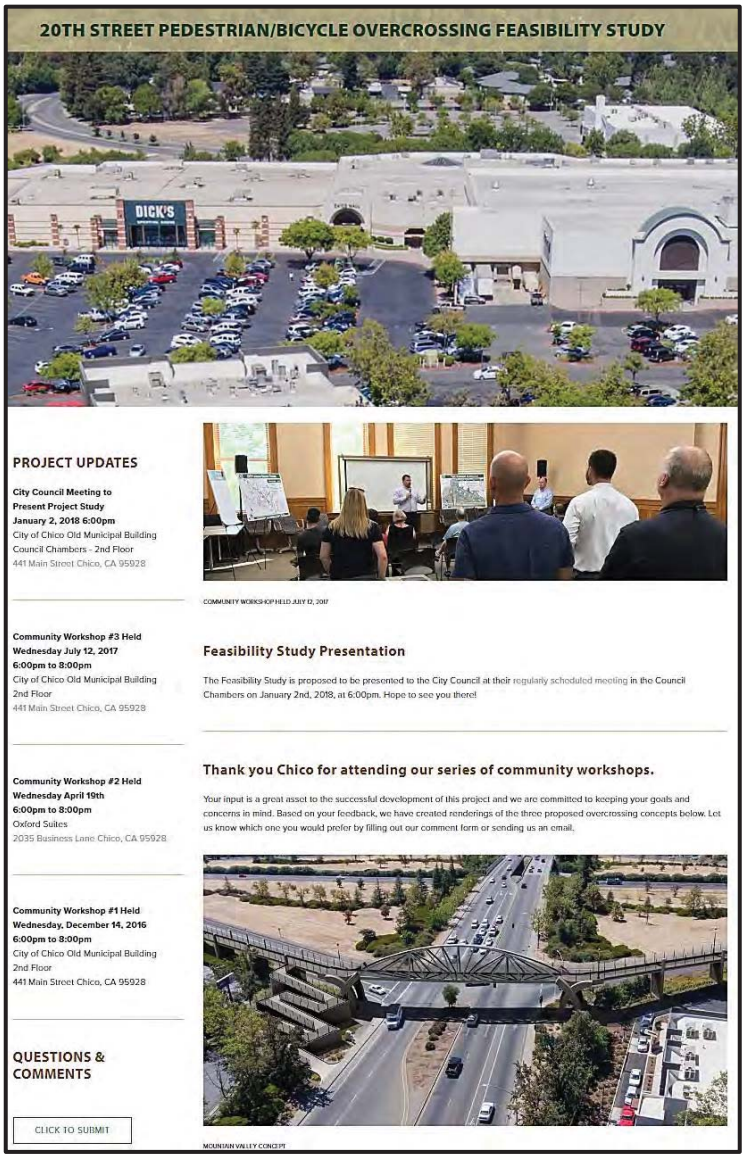
The "Tree City" bridge architectural concept received the most support. Renderings and bridge models were again displayed so the public could select their preferred alternative and choice in architectural concept. Community comments are summarized below, and a complete list of public feedback is listed in the Appendix B.

- Community members reiterated the need for a direct route overcrossing at 20th Street.
- Community members would use the path to frequent businesses.
- Reiterated concerns about at-grade crossings and tunnels.
- The "Tree City" design is favored by the majority of workshop visitors; however, the community would like the structure to be reworked to resemble bike spokes rather than tree branches.
- Reiterated concerns about poor safety from traffic and homeless people in the surrounding area

2.2.3 Website and Social Media Outreach

A project website (www.bikeway99.com) was developed and updated during the community outreach phase of the project. The website displayed community workshop locations and times, an overview of past workshops for those who were unable to attend, and an electronic comment submittal. The website also displayed previous community comments and responses from the City.

A hyperlink to the bikeway99.com site was posted on the City's website and Facebook page. Notifications for upcoming community workshops were also posted to the City's Facebook profile.



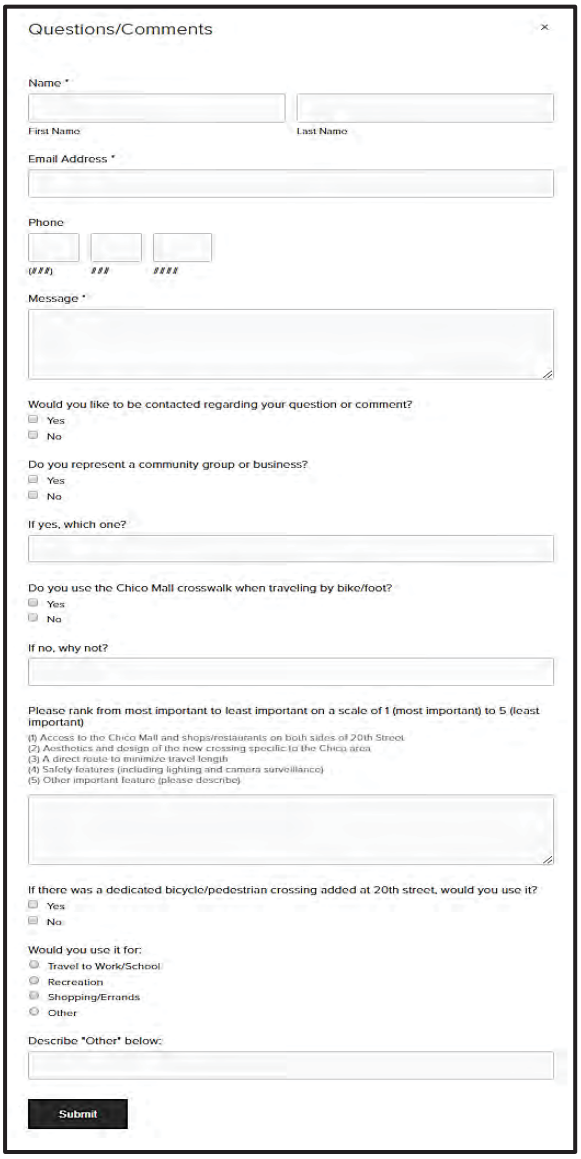


FIGURE 2-7: EXCERPTS FROM BIKEWAY99.COM AND WEBSITE COMMENT FORM

2.2.4 One-on-One Meetings with Business Representatives

The Project Team met one-on-one with 18 business representatives whose business are in the project vicinity. Meetings were held throughout the week of February 20, 2017. Business representatives were given a summary package that included project information and an invitation to the upcoming 2nd Community Workshop.

Business locations and a summary of business representative's concerns are included on the following pages on Figure 2-8 and Table 2-2. These comments, concerns, and local issues were used to further develop the alternatives.

SR99 CORRIDOR BIKEWAY FACILITY - PHASE 5 - FEASIBILITY STUDY REPORT

FIGURE 2-8: BUSINESS OWNER LOCATIONS

TABLE 2-2:
SUMMARY OF CONCERNS AND SUPPORT OF BUSINESS REPRESENTATIVES

	Organization/ Business	Tenant Contact	Title	Criminal Access / Escape Route	Loitering is a Problem	Parked Car Vandalism	Can't Give Up Parking	Safety Concerns at Night	Concerned About Path in Caltrans Landscaping	Transients Use Drive-Thru	Path Won't Help increase Business	Concerned About Traffic/Bike Conflict	Concerned About Bikeway on Business Lane	Supports Overcrossing Alternative	Supports At-Grade Alternatives	Supports Business Lane bikeway	Supports Removal of Shrubs	Supports Removal of Large Tree(s)
1	Dick's Sporting Goods	Chris	Store Manager	☑														
2	Chico Mall	Natasha Shelton / Lynette Myers	General Manager	☑														
3	Logan's Roadhouse	Josh Van Houtte / Joe Wong	Site Manager	☑	☑				☑									
4	Chili's Grill & Bar	Kim Cruzen	Manager		☑	☑	☑	☑		☑				☑	☑			
5	Panera Bread	Lisa Newton / Dakota Alido	Manager											☑				
6	Noodles & Company	William Newton	Manager				☑			☑				☑				
7	Taco Bell	Nick Swisegood	Manager	☑	☑					☑	☑							
8	Carl's Jr	Deanna Johnson/ Kyle	Site Manager	No Comments														
9	AM/PM	Jose Perez	Manager		☑							☑				☑		
10	Red Lobster	Russell Powell / Emily Coleman	Site Manager		☑		☑								☑	☑	☑	
11	Toys R Us	Ellen Walker / Bryan Bohl / Jim	Branch Manager		☑									☑	☑	☑	☑	
12	Olive Garden	Armando Gonzales	Site Manager	☑			☑					☑	☑				☑	☑
13	Applebee's	Paula Youtsey / Patty Nyhof	General Manager		☑	☑	☑										☑	
14	Oxford Suites Chico	Jason Olivares	General Manager													☑		
15	IHOP	Cally Longnecker	General Manager		☑		☑						☑			☑		
16	In-N-Out Burger	Dave Sierra / Dave Aggi	Site & Shift Manager	No Comments. Project Info Forwarded to Corporate Office														
17	Krispy Kreme	Ivan Somov / Samantha Fletcher	Site Manager		☑												☑	
18	Wal-Mart	Kimi Turner / Gina	Site Manager	No Comments														

2.3 Existing Conditions

Phase 5 of the Bikeway 99 will connect the existing Phase 1 bikeway to the north, which ends in the Chico Mall parking lot, to the end of Phase 4 bikeway to the South. Phase 4 is currently in design and construction is expected in 2018. The following section outlines the existing pedestrian and bicycle access, traffic and geological and geotechnical data in and around the project area.

2.3.1 Existing Bicycle and Pedestrian Access

Figure 2-9 on the following page shows the existing pathway that pedestrians and bicyclists currently use to cross 20th Street. While there is an existing path of travel, this route poses many safety issues as there is no continuous, separated pathway. The travel time is also greatly increased due to the heavy traffic volumes at the 20th Street and Chico Mall/Village Center intersection.

- **Phase 1 Connection –** On the north side of the project, the bikeway ends abruptly at the existing parking lot. Throughout the parking lot are well established restaurants and retail stores including: Chico Mall, Chili's Grill and Bar, Panera Bread, Taco Bell, Carl's Jr, KFC, and Chipotle. This area experiences large amount traffic during the day and evening. The parking lot has no designated sidewalks, striping, or signage that protects the pedestrians and bicyclists from traffic. Traversing this parking lot is a hazard to path users.

- **Through the Parking Lot –** For pedestrians and bicyclists to reach the next portion of the bike path, they must cross 20th Street. The nearest crosswalk to the bike path is at the intersection of 20th Street and Chico Mall/Village Center. Bicyclists and pedestrians have two options to access the cross walk. They can exit the parking lot behind Taco Bell, where there is a pedestrian ramp, or they walk/ride through the parking lot to reach the intersection. Both options are unsafe because the pedestrian ramp is in the middle of the Taco Bell drive thru, and there are no striped bike lanes, sidewalks, or signs in the parking lot.

- **Crosswalk –** The 20th Street and Chico Mall/Village Center intersection consists of three cross walks, one on the north and south side of 20th Street, and one that crosses 20th Street. These crosswalk markings are worn away from years of use, giving minimal visibility while crossing. This intersection is extremely congested, dangerous, and carries a long wait time for pedestrians and bicyclists.

- **Business Lane –** To reach the beginning of Bikeway 99 Phase 4, pedestrians and bicyclists must travel along the congested Business Lane. This stretch of roadway consists of restaurants and retail shopping such as; Red Lobster, Olive Garden, Toys 'R' Us, Oxford Suites, Applebee's, IHOP, In-N-Out Burger, Krispy Kreme Doughnuts, and Walmart. These businesses bring high levels of traffic to the area. This poses a safety concern as the current sidewalk and Class 2 bike lanes cross several heavily used business driveways.

- **Phase 4 Connection –** The proposed connection to Bikeway 99 Phase 4 is located south of the Krispy Kreme Doughnuts parking lot. Several of the alternatives included in this study place Bikeway 99 Phase 5 alignment on the west side of these businesses, adjacent to the SR-99 NB off-ramp. While a portion of these areas are undeveloped and contain various types of vegetation, there are utility poles and drive-thrus along the backside of the business that must be considered with the proposed improvements.

SR99 CORRIDOR BIKEWAY FACILITY - PHASE 5 - FEASIBILITY STUDY REPORT

FIGURE 2-9: EXISTING CONDITIONS EXHIBIT

2.3.2 Traffic

In the project vicinity, 20th Street is fronted primarily by commercial uses. This section includes the Chico Mall, access to retail and grocery stores, and large-scale shopping centers. The project area of 20th Street generally experiences the heaviest traffic of the corridor and therefore the most congestion. 20th Street also provides a route to several business parks and access to a residential area east of the project area, which contributes to the congestion near the project area. A minimum of two lanes in each direction and bicycle lanes are provided, with turn lanes at intersections.

To determine the feasibility of the two at-grade alternatives studied, a traffic analysis of each alternative was conducted and is included in Appendix D. The following section discussed the existing traffic conditions in the project area.

At-Grade Alternative 1 – 20th Street and SR-99 Ramps Intersection

The figure below shows the 20th Street and SR-99 Ramps intersection and the proposed At-Grade Alternative 1.

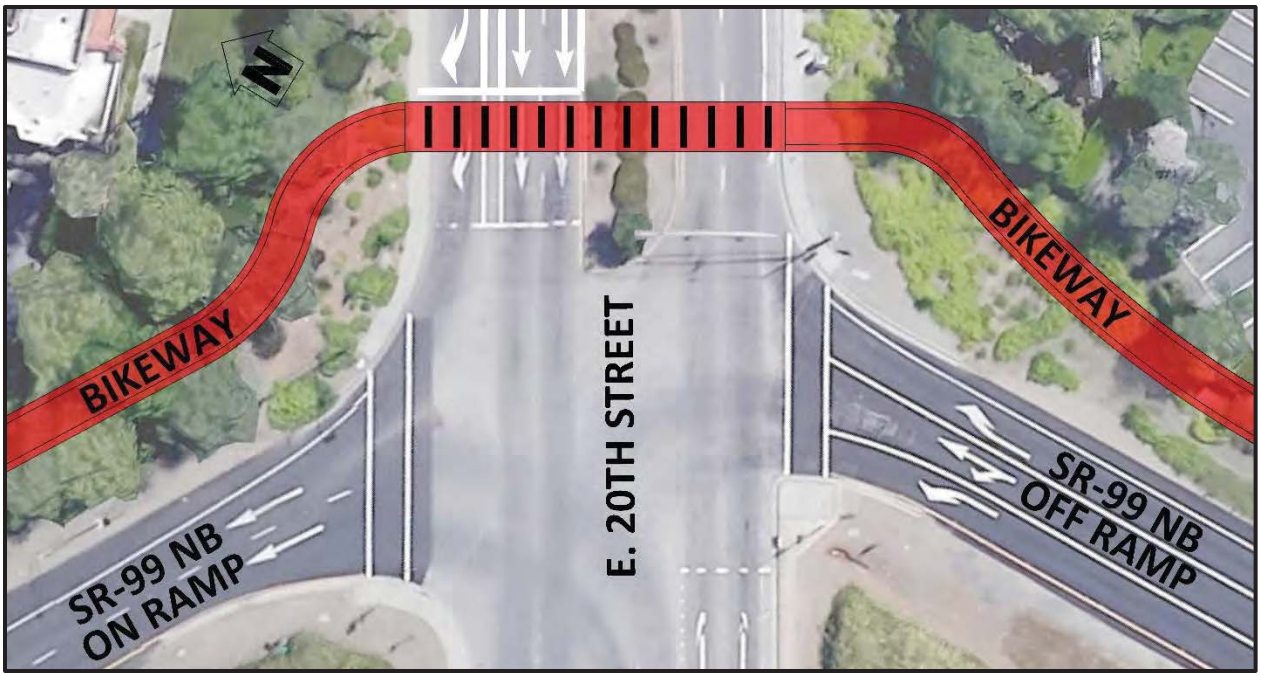


FIGURE 2-10: PROPOSED AT-GRADE CROSSING ALTERNATIVE 1 AT 20TH STREET AND SR-99 RAMPS

The existing intersection received an Intersection LOS of D. The Highway Capacity Manual describes a LOS D as "high density traffic conditions, still with stable flow." Refer to Section 4.3.1 for the impacts of the proposed At-Grade Alternative 1 on this intersection.

TABLE 2-3: 20TH STREET AND SR-99 RAMPS EXISTING TRAFFIC DATA

Overall Delay (Seconds)	Intersection Level of Service	Intersection Queue Lengths [ft]						
		EB Left	EB Thru	WB Thru	WB Right	NB Left	NB Thru	NB Right
44.7	D	205	582	255	924	68	69	179

At-Grade Alternative 2 – 20th Street and Chico Mall/Village Center Intersection

The figure below shows the 20th Street and Chico Mall/Village Center intersection and the proposed At-Grade Alternative 2.

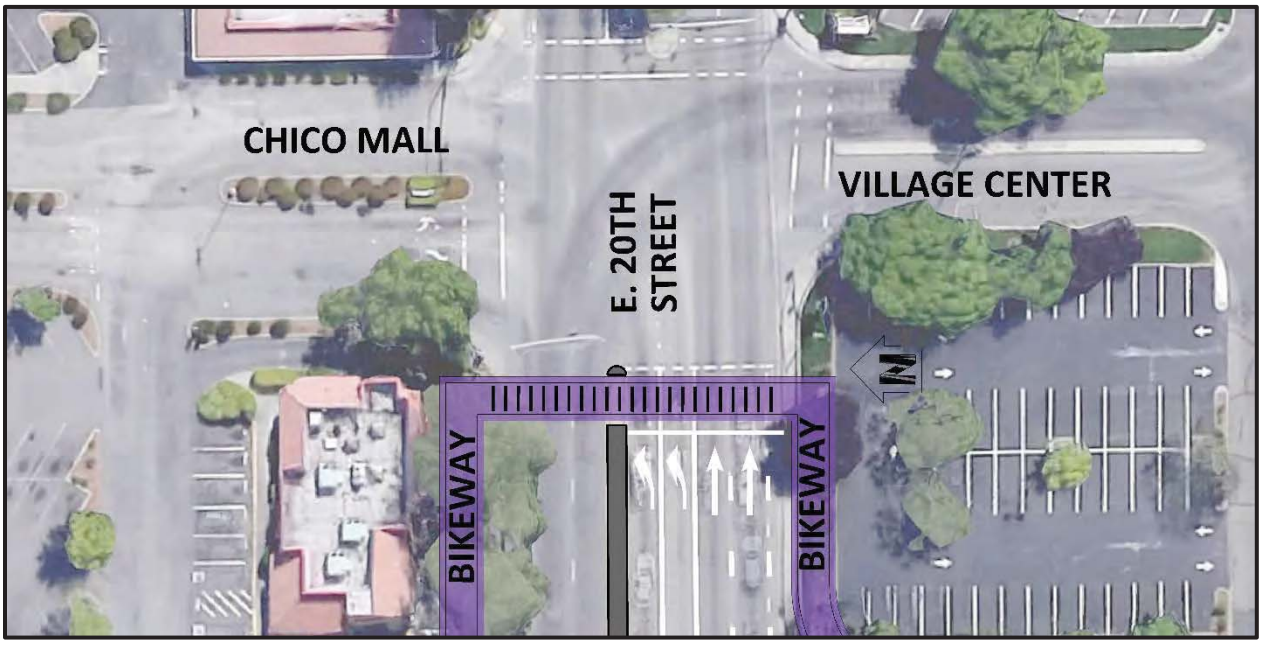


FIGURE 2-11: PROPOSED AT-GRADE CROSSING ALTERNATIVE 2 AT 20TH STREET AND SR-99 RAMPS

The existing intersection received an Intersection LOS of E. The Highway Capacity Manual describes an LOS E, as "at or near capacity flow." Refer to Section 4.3.2 for the impacts of the proposed At-Grade Alternative 2 on this intersection.

TABLE 2-4: 20TH STREET AND CHICO MALL/VILLAGE CENTER EXISTING TRAFFIC DATA

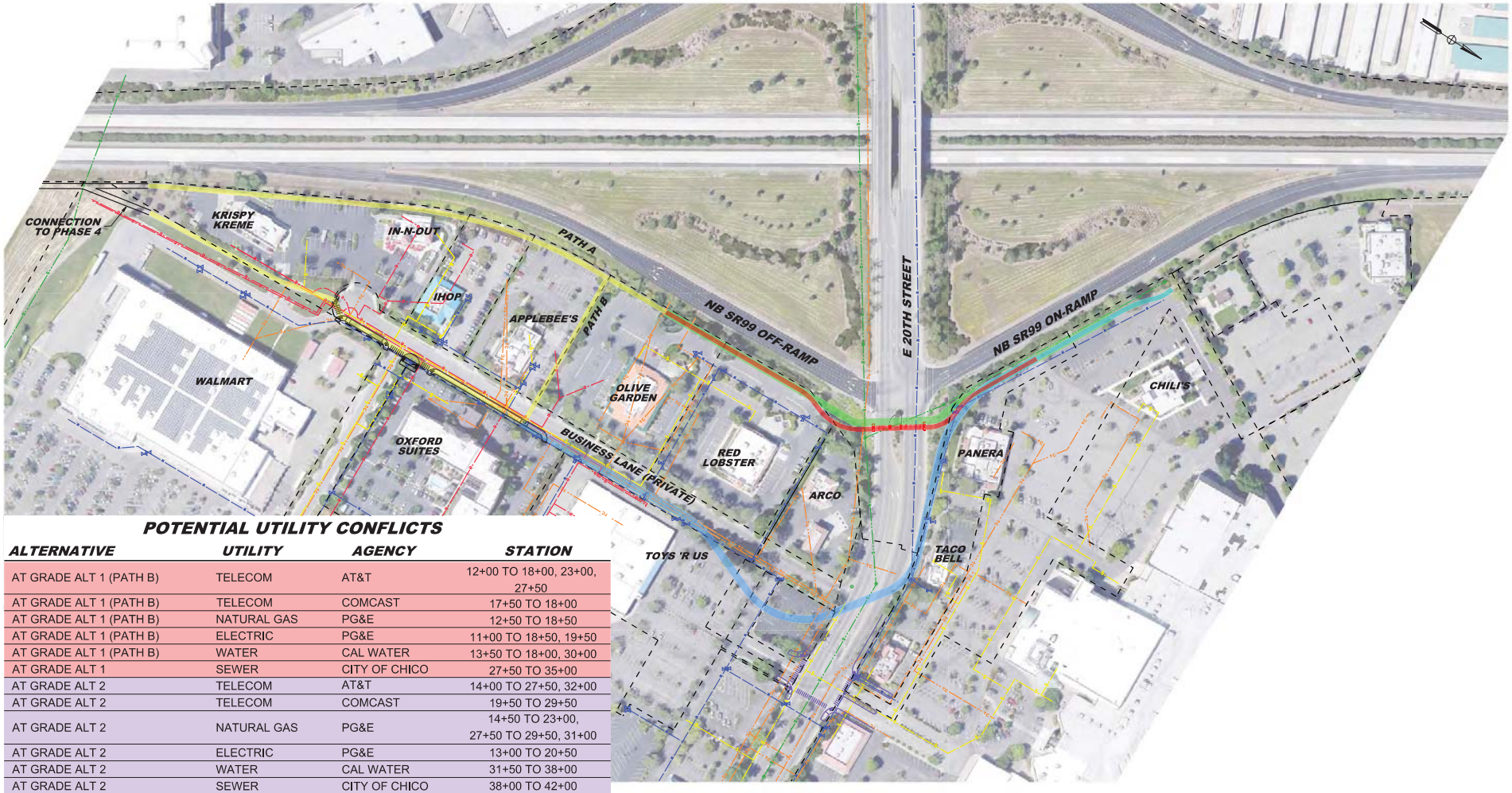
Overall Delay (Seconds)	Intersection Level of Service	Intersection Queue Lengths [ft]							
		EB Left	EB Thru	WB Left	WB Thru	NB Left	NB Thru	SB Thru/Left	SB Right
65.0	E	320	726	144	882	283	269	200	63

2.3.3 Utilities

Utilities within the project area include:

- AT&T
- Comcast
- PG&E
- California Water Service
- City of Chico Sewer
- City of Chico Storm Drain

Figure 2-12 on the following page shows the utilities within the project site and includes a list of all potential utility conflicts for each of the alternatives considered.



POTENTIAL UTILITY CONFLICTS

ALTERNATIVE	UTILITY	AGENCY	STATION
AT GRADE ALT 1 (PATH B)	TELECOM	AT&T	12+00 TO 18+00, 23+00, 27+50
AT GRADE ALT 1 (PATH B)	TELECOM	COMCAST	17+50 TO 18+00
AT GRADE ALT 1 (PATH B)	NATURAL GAS	PG&E	12+50 TO 18+50
AT GRADE ALT 1 (PATH B)	ELECTRIC	PG&E	11+00 TO 18+50, 19+50
AT GRADE ALT 1 (PATH B)	WATER	CAL WATER	13+50 TO 18+00, 30+00
AT GRADE ALT 1	SEWER	CITY OF CHICO	27+50 TO 35+00
AT GRADE ALT 2	TELECOM	AT&T	14+00 TO 27+50, 32+00
AT GRADE ALT 2	TELECOM	COMCAST	19+50 TO 29+50
AT GRADE ALT 2	NATURAL GAS	PG&E	14+50 TO 23+00, 27+50 TO 29+50, 31+00
AT GRADE ALT 2	ELECTRIC	PG&E	13+00 TO 20+50
AT GRADE ALT 2	WATER	CAL WATER	31+50 TO 38+00
AT GRADE ALT 2	SEWER	CITY OF CHICO	38+00 TO 42+00
OVER CROSSING ALT 1	TELECOM	AT&T	14+00 TO 24+50, 27+50, 30+00
OVER CROSSING ALT 1	NATURAL GAS	PG&E	19+50 TO 24+50, 28+00
OVER CROSSING ALT 1	ELECTRIC	PG&E	12+50 TO 21+50
OVER CROSSING ALT 1	WATER	CAL WATER	15+50 TO 24+00, 26+50
OVER CROSSING ALT 1	SEWER	CITY OF CHICO	29+00, 34+00 TO 39+00
OVER CROSSING ALT 2 (PATH B)	ELECTRIC	PG&E	11+00 TO 18+50, 19+50
OVER CROSSING ALT 2 (PATH B)	NATURAL GAS	PG&E	12+50 TO 18+50
OVER CROSSING ALT 2 (PATH B)	TELECOM	COMCAST	17+50 TO 18+00
OVER CROSSING ALT 2	TELECOM	AT&T	23+50, 28+00
OVER CROSSING ALT 2	WATER	CAL WATER	29+00
OVER CROSSING ALT 2	SEWER	CITY OF CHICO	28+00 TO 35+00

LEGEND:

- ROW BOUNDARY LINE
- AT GRADE ALT 1
- AT GRADE ALT 2
- OVER CROSSING ALT 1
- OVER CROSSING ALT 2
- CONNECTION TO PHASE 4
- TELECOM
- GAS
- WATER
- SEWER
- ELECTRICAL

FIGURE 2-12: UTILITY POTENTIAL CONFLICT EXHIBIT

2.3.4 Site Geology and Groundwater

A Preliminary Geotechnical Report was prepared for this Feasibility Study and has been included as Appendix E. The proposed alternatives would be situated on a combination of un-weathered gravel, sand, silt, and clay. The upper 5 to 10 feet of soil will most likely consist of stiff silt and clay, underlain by medium dense to dense clayey sand and clayey gravel with cobbles, alternating with stiff to hard sandy clay. The dense, cemented, lahar of the Tuscan Formation may be encountered between 60 feet to 80 feet below ground surface.

Shallow water is expected to be present within 15 to 20 feet below the existing ground surface. Groundwater dewatering and moisture barriers are currently in use by surrounding subsurface structures.

Foundations types vary with each alternative and associated structure. Shallow spread foundations may be used for smaller structures such as retaining walls and undercrossing structures. Spread footings may not exceed a permissible net contact stress of 3,000 to 5,000 pounds per square foot (psf). Deep foundations should be used to support overcrossing abutments, and should be embedded into competent clayey gravel or hard sandy clay materials, ranging from approximately 25 to 50 feet below existing grade. Cast-in drilled hole (CIDH) pier design methods employing lateral bearing approaches is the recommended type for deep foundation. The allowable end bearing capacity is anticipated to be 4,000 to 6,000 psf for CIDH pier design.

2.3.5 Faulting and Seismic Site Conditions

The proposed project is located near several faults that could produce regional faulting: Chico Monocline, Cohasset Ridge Fault, Paradise Fault, Magalia Fault, and Cleveland Hill Fault. The most recent seismic activity occurred from the Cleveland Hills Fault. The mapped fault zone is 25 miles south of the project site. The fault is associated with ground rupture during the Oroville earthquakes of 1975. The project site presents a low possibility of seismically induced hazards such as lateral spreading, liquefaction, ground lurching, seismically induced settlement, and surface rupture. Ground shaking is likely due to the surrounding active faults and all proposed structures will be designed per Caltrans Seismic Design Criteria.

3.0 PROJECT VISION

Phase 5 of the Bikeway 99 will provide a safe, convenient and independent path for bicyclists and pedestrians to cross the congested 20th Street corridor. Once Phase 5 is complete, Bikeway 99 will be a continuous alternative transportation and recreational route from Eaton Road to the Skyway (approximately 7 miles). The crossing of 20th Street will also include a signature bridge structure that is unique to the City of Chico and tied to the City's history and culture.

3.1 Goals and Objectives

The following project goals and objectives have been identified and incorporated into the recommended alternative:

- Eliminate conflicts between vehicle movements and pedestrian/bicycle movements.
- Enhance pedestrian/bicycle safety crossing 20th Street.
- Increase bicycle use through the City.
- Provide compatibility with Bike Path Master Plan established by the City of Chico.
- Meet ADA, City of Chico, and Caltrans standards.
- Meet the goals set by the City of Chico General Plan for 2030.
- Propose alternatives supported by the public, stakeholders, and surrounding neighborhoods.
- Provide safe routes to local schools and universities.
- Secure Caltrans concurrence and support of the recommended alternative.
- Secure Federal Active Transportation Program (ATP) funding.
- Reduce right of way impacts.
- Minimize traffic impacts.
- Maintain existing design speeds and traffic capacity.
- Compatibility with future improvements outlined in the East 20th Street Circulation Study.
- Optimize project cost and secure Federal funding.
- Provide proper pedestrian/bicycle signage.
- Expedite project implementation.

3.2 Alternative Selection Criteria

The recommendations included in this Feasibility Study are based on the following alternative selection criteria:

- Pedestrian/bicyclist safety and security
- Pedestrian/driver points of conflicts
- Increased connectivity and accessibility
- Aesthetic potential
- ADA compliance
- Environmental impacts
- Right of way costs, schedule and impacts
- Connection to business and retail stores
- Directness of route for path commuters
- Consistency with the overall Bikeway 99 facility
- Utility impacts

3.3 Design Standards

The following design standards were incorporated into each alternative developed:

- AASHTO Guide Specifications for the Design of Pedestrian Bridges
- AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012 with Amendments
- Caltrans Highway Design Manual, Chapter 1000, 6th Edition
- Caltrans Bridge Design Specifications, 2015
- Caltrans Seismic Design Criteria, Version 1.7, 2013
- California Building Code
- Caltrans Standard Plans, 2015
- Signing and Striping per MUTCD 2014
- City of Chico Design Standards

3.4 Public Safety

Based on community feedback, the overwhelming consensus was that safety improvements need to be made to the existing and proposed bikeway. Two low-cost ways to improve the safety for bicyclists and pedestrians who use the crossing is to install surveillance cameras and lighting.

- **Security cameras** reduce crime by deterring potential offenders, alerting police to dangerous situations, generating evidence for suspects and witnesses, and foster safety in public places. The Urban Institute reports crime dropping by as much as 20% in urban areas when security cameras are installed. The cost associated with installing and maintaining these cameras are outweighed by the costs savings associated with the reduction in crime. The City of Chico has already implemented a security camera network on paths and bikeways within the City. The proposed security cameras for Phase 5 will tie into the existing networks, significantly lowering their costs.

- **Lighting** has multiple purposes on a bike/pedestrian path. The light helps illuminate the path for bicyclists to avoid bumps and objects on the road as well as see the area ahead at night. Also, the increased visibility reduces crime and theft in two primary ways. First, improved lighting increases the risk of the offender being caught, causing him/her to consider if the risk is worth the reward. Second, increased lighting also increases the natural surveillance of witnesses, if a crime would occur, which again would deter the offender. Although street lights by themselves do not help capture perpetrators, they decrease the likeliness of burglary and theft from occurring.

The use of security cameras and lighting will greatly reduce crime, especially theft, along bike paths. Both methods, when studied alone, proved effective in reducing crime and they were even more effective when implemented simultaneously. Additionally, both methods contribute to stopping crime before they occur as opposed to methods that track down people that have already committed the crime. Both measures will be included in Phase 5 to provide bikeway users with safe environment to sponsor more ridership.

3.5 Architectural and Cultural Considerations

The City of Chico, incorporated in 1872, is located in the Northern Sacramento Valley of California, 90 miles north of Sacramento, in Butte County. With a growing urbanized population, Chico is known for its quality infrastructure and sense of small-town living. Chico is home to an innovative culture and outdoor attractions. Public art lines the streets, strengthening the ties between members of the community. Located in Chico is Bidwell Park, one of the largest municipal parks in the United States. Bidwell Park encompasses both sides of Big Chico Creek Canyon for five miles up the foothills. Bidwell Park is closed to automobile traffic, encouraging bicyclists, joggers, and pedestrians to share the paved street safely. Chico State University at the heart of town draws thousands of young, new citizens who add to the liveliness and diversity of the City.

To develop a project that is tied to the history, culture and overall atmosphere of Chico, a Project Architect was included on the Project Team to work with the Community to develop three architectural concepts for the 20th Street Pedestrian Overcrossing. Of the 3 architectural concepts developed, the strongest community support was received for the "Tree City" concept.

3.5.1 "Tree City" Concept

The City of Chico has been designated a "Tree City" for 31 consecutive years by the National Arbor Day Foundation. Tied to the City's logo, the "Tree City" architectural concept stems from Chico's well-known status as a city teeming with trees and vegetation. The streets of Chico are lined by rows of oaks, maples, buckeyes, cottonwoods, and countless other species of trees. The City of Chico was once home to one of the largest oak trees known to northern California: Hooker Oak. The enormous tree, which was actually two large oak trees that intertwined and grew together, became a well-known figure in the City. When the tree fell in 1977, the wood was harvested and used to craft the Mayor's gavel and the pedal board of the Centennial Pipe Organ. Chico public officials embrace the City's identity as a natural arboretum. The oak tree and other native tree species are a familiar sight to the public. The "Tree City" design mirrors Chico's history as a city imbued with nature and serves as a reminder of the community's identity.

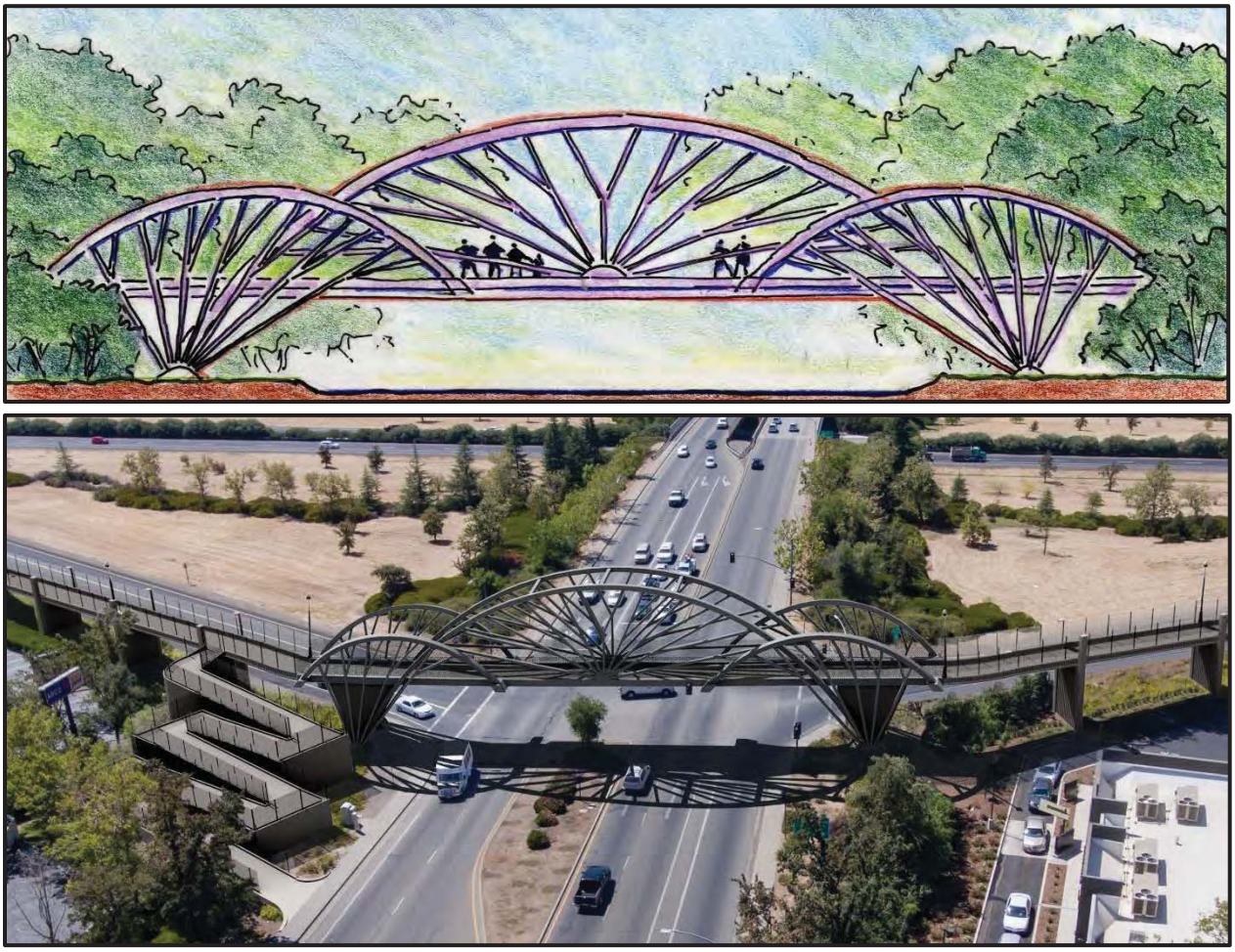


FIGURE 3-1: "TREE CITY" CONCEPT SKETCH AND RENDERING

Based on feedback received at Community Workshop 3, a variation of this architectural concept will be studied that modifies the truss members to more closely resemble a bicycle wheel, linking the structure to the strong bicycling community of Chico.

Additionally, John Bidwell designated Chico as the "City of Roses" in the 1880's to sponsor settlement in Chico. The "City of Roses" motto is featured on the City seal. This architectural concept will consider incorporating some abstraction of roses.

3.5.2 "Mountain Valley" Concept

The City of Chico lies in the northern tip of the Central Valley of California. With the Sierra Nevada mountain range to the east and the coastal mountain range to the west, the City's geography is recreated in the "Mountain Valley" architectural concept. On either end of the bridge, structural supports connect to a point at the top arch of the bridge. In the middle of the truss, the structural supports differ in angle to create an illusion of a radiant landscape situated between two towering mountains. The bridge design reminds citizens of Chico's place in the California landscape.

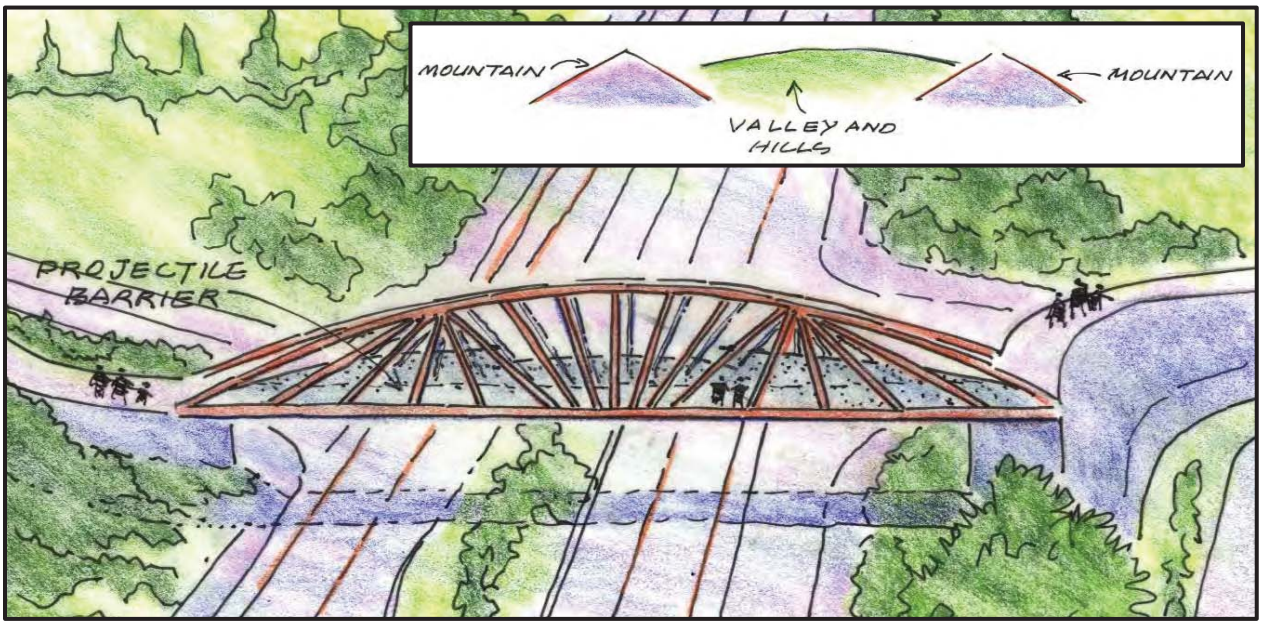


FIGURE 3-2: "MOUNTAIN VALLEY" CONCEPT SKETCH AND RENDERING

3.5.3 "Birds of Bidwell Park" Concept

Natural resources, such as Big Chico Creek and Upper Bidwell Park, are home to over 100 species of birds. The "Birds of Bidwell Park" architectural concept was inspired by these resources. The bold, reaching towers of the concept reflect the wildlife local to the Butte County region. The towers are modelled after the stretched wings of a Trumpeter Swan, a native bird to the region, ready to bound into flight. The striking bridge design is an impressive entrance to the City and demonstrates Chico's dedication to investing in functional, aesthetically pleasing bicycle infrastructure.

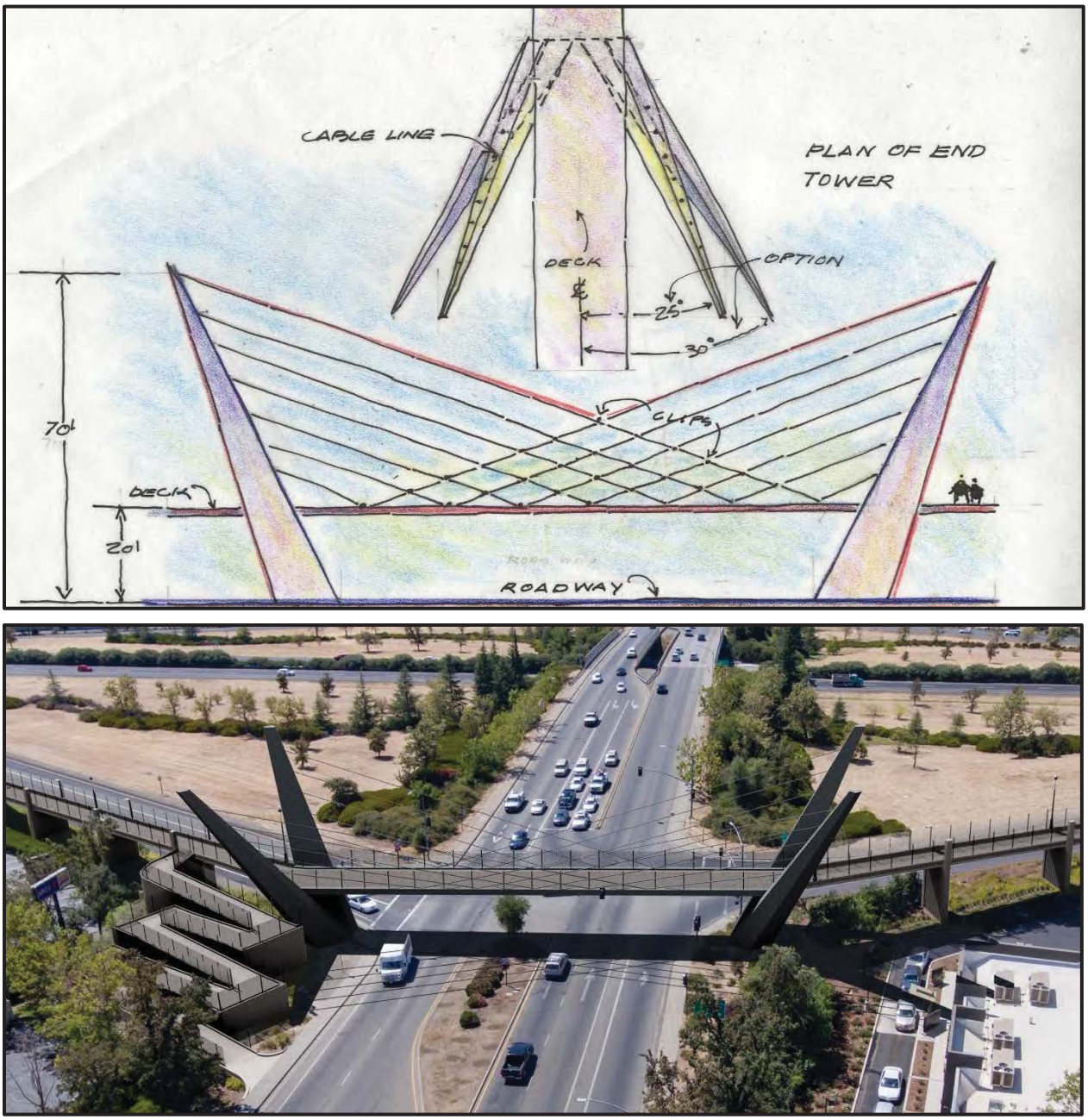


FIGURE 3-3: "BIRDS OF BIDWELL PARK" CONCEPT SKETCH AND RENDERING

3.5.4 Other Aesthetic Features

To further enrich the bikeway aesthetics and sponsoring more ridership, several aesthetic features were developed, discussed, and received community support during development of the Feasibility Study. Additionally, the features and themes of the existing section of Bikeway 99 will be incorporated into Phase 5, linking aesthetic themes and providing consistency along the Corridor. These aesthetic features include:

- **Decorative Luminaires –** Existing portions of Bikeway 99 include decorative luminaires, unique to the bikeway. Luminaires will be incorporated into Phase 5.
- **Up-Lighting –** To improve visibility of the overcrossing at night and to enhance the aesthetic features and intricacies of the structure's span and supports, up-lighting will be added to the main span over 20th Street.
- **Path Signage, Monuments and Emblems –** The "Bikeway 99" logo is displayed throughout the previously constructed phases of the bikeway. This includes signage, embedded emblems in the path, and artistic pieces. These same elements will be incorporated into Phase 5.
- **Stained and Textured Concrete –** The approach bridge spans, retaining walls, and supports for the 20th Street Overcrossing will include colored and textured concrete.

FIGURE 3-4: EXISTING BIKEWAY 99 AESTHETIC FEATURES

4.0 PROJECT ALTERNATIVES

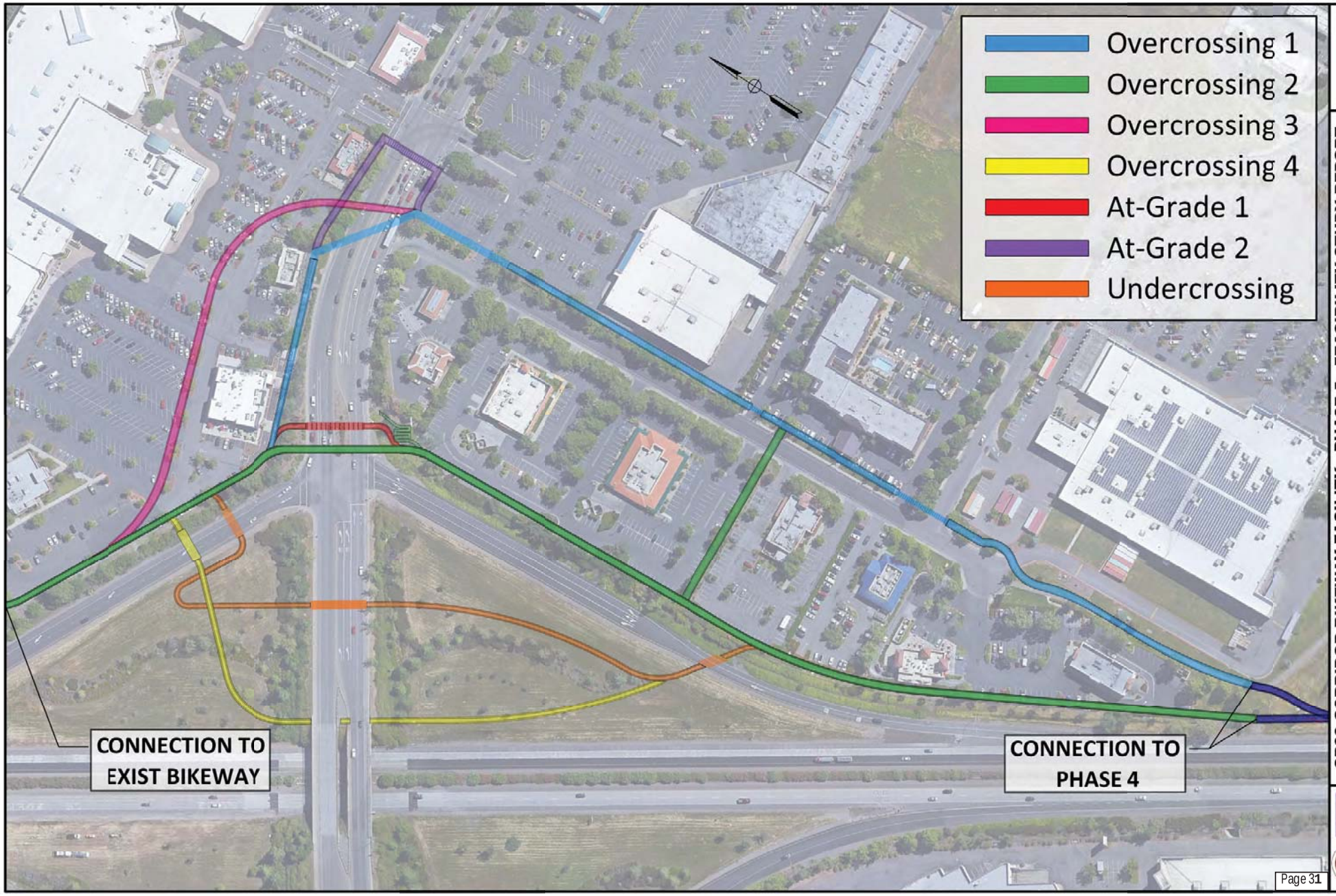
To provide a comprehensive study of alignment alternatives for Phase 5 of Bikeway 99, seven alignment alternatives were studied. They include; four (4) Overcrossing Alignments, two (2) At-Grade Crossing Alignments and an Undercrossing Alignment.

Each of the alternatives begins in the northwest corner of the Chico Mall parking lot and ends at the south end of Business Lane, transitioning into the soon to be constructed Phase 4 of Bikeway 99. Although the alternatives begin and end at the same location, different horizontal alignments are proposed. The alignment alternatives are shown in Figure 4-1.

4.1 Alternative Comparison

Based on feedback from the community and other considerations included in this study, the recommended alignment alternative is the Overcrossing Alignment 2 (Green).

Table 4-1 summarizes the positive and negative elements that were considered for each alternative. Specific elements for each alignment alternative are discussed in the following sections.



SR99 CORRIDOR BIKEWAY FACILITY - PHASE 5 - FEASIBILITY STUDY REPORT

FIGURE 4-1: ALIGNMENT ALTERNATIVE EXHIBIT

TABLE 4-1: ALTERNATIVE COMPARISON SUMMARY

ELEMENTS	Overcrossing Alternatives				At-Grade Alternatives		Undercrossing Alternative
	1	2	3	4	1	2	
Positive:							
• Removal of Vagrant Hide-Outs		☑			☑		
• Public Support of Alternative	☑	☑			☑		
• Provides Path Connection to Business Lane	☑	☑	☑			☑	
• Direct Path of Travel		☑		☑	☑		☑
• 20th Street Circulation Study Compatibility	☑	☑	☑	☑	☑		☑
• Improves View Shed and Signage of Business		☑	☑		☑		
• Close Access to Chico Mall Entrance	☑	☑	☑		☑	☑	
Negative:							
• Construction within Water Table/Pumps							
• Construction in Caltrans Right of Way		☑		☑			
• Right of Way Acquisition on Business Lane	☑		☑			☑	

4.2 Overcrossing Alternatives

Safety, increased ridership and an improved user experience were common project objectives heavily reinforced by community input. These goals are best achieved by providing a bikeway that is completely separated from vehicular traffic. Both overcrossing and undercrossing alternatives were evaluated to provide separation from vehicular traffic on the heavily congested 20th Street. By implementing an overcrossing or undercrossing, the 20th Street barrier is eliminated. However, community input heavily favored overcrossing alternatives due to the openness, overall safety and high potential to create a structure unique to Chico. Four overcrossing alternatives were evaluated as part of this Feasibility Study.

4.2.1 Overcrossing Alternative 1

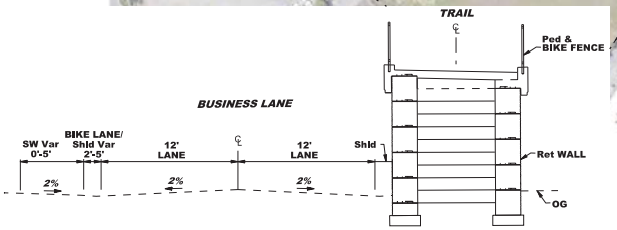
Overcrossing Alternative 1 was well-received by the community. The following table summarized the key features of this alternative.

TABLE 4-2: OVERCROSSING ALTERNATIVE 1 SUMMARY

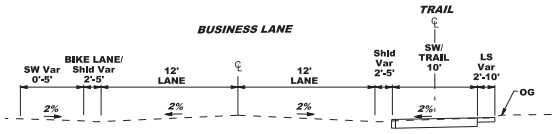
DESCRIPTION	Overcrossing at the intersection of 20th Street and Business Lane
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Direct connection between Phase 1 and Phase 4 Bikeway 99 facilities • Compatible with architectural concepts
COMMUNITY FEEDBACK	Favorable alternative, particularly by businesses on Business Lane
PROJECT LENGTH	2,800' (including 1,300' of bridge/elevated path)
PROJECT IMPLEMENTATION	Since most of the structural work will be outside Caltrans R/W, less than $1 million will be constructed in Caltrans R/W, requiring only a Caltrans encroachment permit, expediting project delivery.
PEDESTRIAN AND BICYCLIST IMPACT	While the alignment is less direct than OC Alt 2, the alignment will place pedestrians and bicyclists directly onto Business Lane, providing direct access to the restaurants and businesses in the area.
SAFETY	The overcrossing will separate path users from vehicular traffic on the congested 20th Street, providing increased safety. Includes security cameras and path lighting.
RIGHT OF WAY CONSIDERATIONS	A total of thirteen (13) properties will be affected by alternative. The most significant impacts are to the parking lot located at the corner of 20th Street and Business Lane (APN 002-420-029). Acquisition Time: **12 Months** Acquisition Costs: **$1.7 M**
TRAFFIC IMPACTS	No negative impacts to traffic. Alternative transportation will only improve traffic.
BUSINESS IMPACTS	This alternative requires acquisition of property along Business Lane (a private road) and will require significant impacts to the southwest parking lot at the intersection of Business Lane and 20th Street. At-grade crossings at the driveways for several businesses along Business Lane will also impact access.
ENVIRONMENTAL	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	This alternative avoids Caltrans full oversite by requiring less than $1 Million in Caltrans R/W, however, it requires the greatest coordination and impacts to businesses in the project area, including impacts to Business Lane, a private road.
PROJECT COST	Construction Cost: **$9.9 M** Total Cost: **$14.4 M**
CONCLUSION	While this alternative was well received by the community and the business representatives in the project area and avoids Caltrans full oversight, it was not selected as the recommended alternative due to its impacts to private property and less direct path of travel for commuters using the bikeway.

FIGURE 4-2: OVER CROSSING ALT 1 - LAYOUT

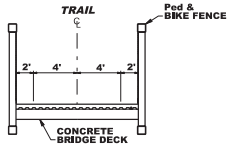
PLAN
SCALE: H: 1"=200'



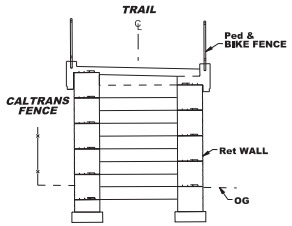
SECTION B-B



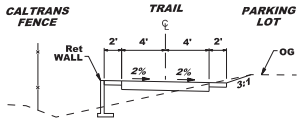
SECTION A-A



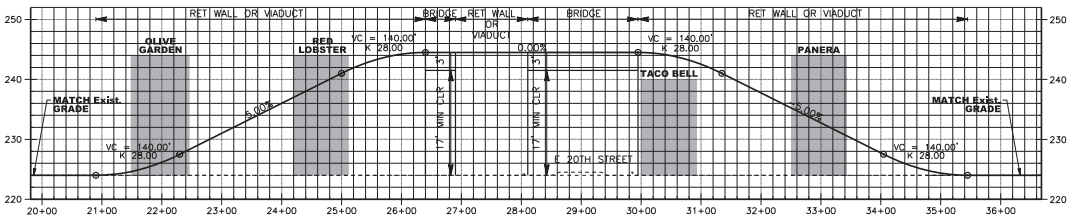
SECTION C-C



SECTION D-D



SECTION E-E



PROFILE
SCALE: H: 1"=100'
V: 1"=10'

LEGEND:

- ROW LINE
- AT GRADE PATH
- RET WALL/VIADUCT
- BRIDGE
- RETAINING WALL

PROJECT COST ESTIMATE
Overcrossing Alternative 1

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	24,000	$ 10.00	$ 240,000
2	Retaining Wall	SF	7,200	$ 65.00	$ 468,000
3	Security Camera	EA	7	$ 10,000.00	$ 70,000
4	Lighting System	EA	24	$ 8,000.00	$ 192,000
5	Pedestrian Railing	LF	2,500	$ 50.00	$ 125,000
6	Bridge Approach Span	SF	8,400	$ 300.00	$ 2,520,000
7	Main Bridge Span - "Tree City" Concept	SF	3,500	$ 750.00	$ 2,625,000
8	Landscaping	LS	1	$ 100,000.00	$ 100,000

Construction	$	6,340,000
Mobilization (10%)	$	634,000
Contingency (25%)	$	1,585,000
Subtotal - Construction Cost	$	8,559,000
*** Escalated Construction Cost**	**$**	**9,900,000**
** PSR	$	-
** Caltrans Costs	$	-
** PA&ED	$	150,000
PS&E (15%)	$	1,490,000
Escalated Right of Way	$	1,400,000
Right of Way Support	$	300,000
Construction Management (12%)	$	1,188,000
Total Project Cost	**$**	**14,428,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** Less than $1M will be constructed within Caltrans R/W. A Caltrans Encroachment Permit will be required.

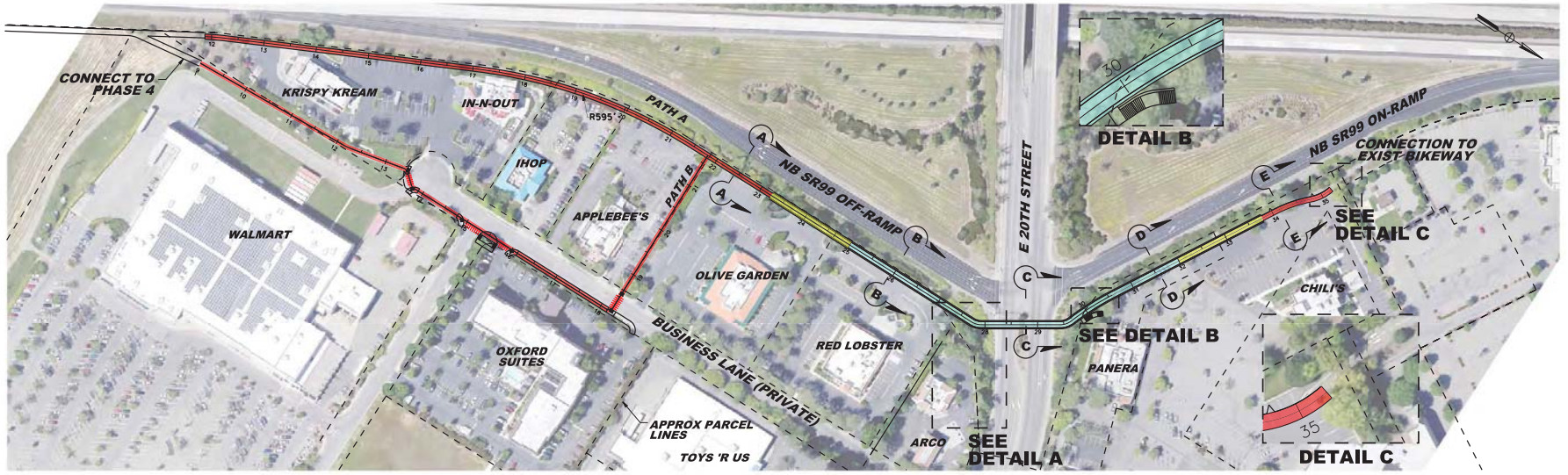
Total Project Cost (Rounded) $14.4 M

4.2.2 Overcrossing Alternative 2 (Recommended)

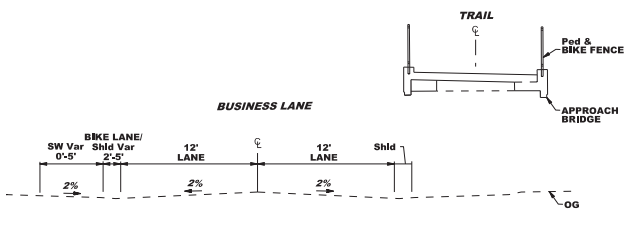
Overcrossing Alternative 2 is the recommended alternative and was heavily favored by the community. The following table summarized the key features of this alternative.

TABLE 4-3: OVERCROSSING ALTERNATIVE 2 SUMMARY

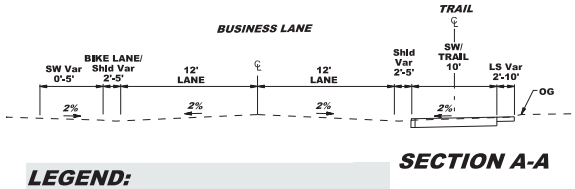
DESCRIPTION	Most direct route, following the SR-99 on and off-ramps
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Direct connection between Phase 1 and Phase 4 Bikeway 99 facilities • Compatible with architectural concepts
COMMUNITY FEEDBACK	Most favorable alternative, particularly with Chico VELO and the biking community. Connections to Business Lane and touchdowns to north and south sides of 20th Street added based on community feedback.
PROJECT LENGTH	2,800' (including 1,200' of bridge/elevated path). Note: This includes the 300' long path connection to Business Lane.
PROJECT IMPLEMENTATION	This alternative place the signature bridge structure within Caltrans right of way, requiring greater than $3 million to be constructed in Caltrans right of way and full Caltrans oversight. This will impact the project delivery schedule; however, since the alternative will have limited impacts to Caltrans operations, expedited project delivery is anticipated.
PEDESTRIAN AND BICYCLIST IMPACT	Most direct path of travel for alternative transportation commuters. Provides link to both sides of 20th Street and Business Lane, providing a direct link to the restaurants and businesses in the area.
SAFETY	The overcrossing will separate path users from vehicular traffic on the congested 20th Street, providing increased safety. Includes security cameras and path lighting.
RIGHT OF WAY CONSIDERATIONS	A total of ten (10) properties will be affected by alternative. The most significant impacts are to the parking lots along the SR-99 Ramps (APN 002-450-040, 035 & 002-420-024, 025, 026, 027, 028) and/or Caltrans right of way. The project includes improvements to commercial businesses that will require multiple levels of corporate approval. The alignment allows for the option of placing the majority of the bikeway within Caltrans right of way to decrease private property takes. Acquisition Time: **12 Months** Acquisition Costs: **$2.2 M**
TRAFFIC IMPACTS	No negative impacts to traffic. Alternative transportation will only improve traffic.
BUSINESS IMPACTS	This alternative requires partial acquisition of existing parking lots along the SR-99 on/off ramps and the vegetated area between Olive Garden and Applebee's to provide Path B (access to Business Lane). Drive aisles may be decreased as not to decrease parking. Signage along this area will also be impacted; however, consideration will be given for a variance to allow for combined signage. Construction of the touchdowns on each side of 20th Street will impact ARC) and Panera Bread's facilities.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	Alternative Path B was developed to provide a connection to Business Lane. While it is shown as an alternative connection to Bikeway 99 Phase 4, additional contingency was added to the project estimate to allow for both Paths A and B to be constructed, providing more connectivity for path users.
PROJECT COST	Construction Cost: **$9.5 M** Total Cost: **$14.7 M**
CONCLUSION	Overcrossing Alternative 2 provides the most direct route, has the highest potential for a signature structure unique to the City of Chico, and was heavily favored by the community and is the recommended alternative. The Project Team worked with the community and business representatives to further refine this alternative, ensuring the public value provided by this project is maximized.



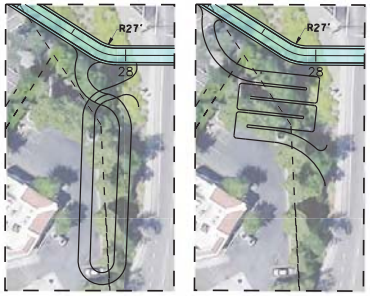
PLAN
SCALE: H: 1"=200'



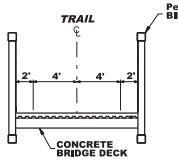
SECTION B-B



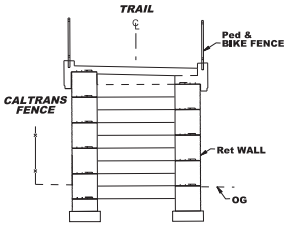
SECTION A-A



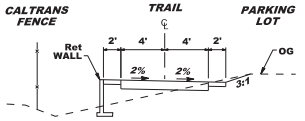
LOOP RAMP **SWITCHBACK RAMP**



SECTION C-C

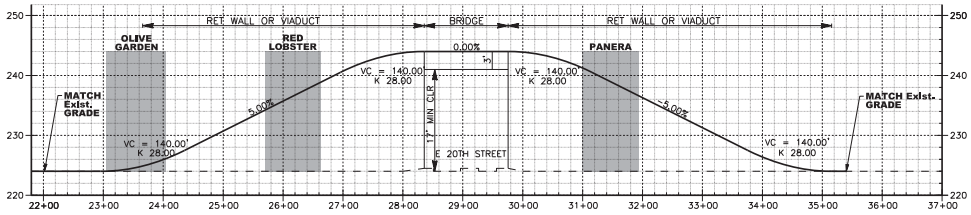


SECTION D-D



SECTION E-E

DETAIL A



PROFILE
SCALE: H: 1"=100'
V: 1"=10'

LEGEND:

- ROW LINE
- AT GRADE PATH
- RET WALL/VIADUCT
- BRIDGE
- RETAINING WALL

FIGURE 4-3: OVER CROSSING ALT 2 - LAYOUT

PROJECT COST ESTIMATE

Overcrossing Alternative 2

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	14,400	$ 10.00	$ 144,000
2	Retaining Wall	SF	6,400	$ 65.00	$ 416,000
3	Security Camera	EA	7	$ 10,000.00	$ 70,000
4	Lighting System	EA	24	$ 8,000.00	$ 192,000
5	Pedestrian Railing	LF	2,000	$ 50.00	$ 100,000
6	Bridge Approach Span	SF	9,800	$ 300.00	$ 2,940,000
7	Main Bridge Span - "Tree City" Concept	SQFT	2,800	$ 750.00	$ 2,100,000
8	Landscaping	LS	1	$ 100,000.00	$ 100,000

Construction	$ 6,062,000
Mobilization (10%)	$ 606,200
Contingency (25%)	$ 1,515,500
Subtotal - Construction Cost	$ 8,183,700
*** Escalated Construction Cost**	**$ 9,500,000**
** PSR	$ 50,000
** Caltrans Costs	$ 50,000
** PA&ED	$ 350,000
PS&E (15%)	$ 1,425,000
Escalated Right of Way	$ 1,920,000
Right of Way Support	$ 300,000
Construction Management (12%)	$ 1,140,000
Total Project Cost	**$ 14,735,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** More than $3M will be constructed in Caltrans R/W. Full Caltrans Oversight may be required.

Total Project Cost (Rounded) $14.7 M

4.2.3 Overcrossing Alternative 3

Overcrossing Alternative 3 was developed to minimize the impacts to Panera Bread and Taco Bell drive-thru while still providing a direct connection to Business Lane. The alternative includes a viaduct type bridge through the Chico Mall parking lot, and a signature bridge structure at the intersection of 20th Street and Business Lane, similar to Overcrossing Alternative 1. This alternative did not receive much community support; however, it was included in this Study to provide a comprehensive list of all feasible alternatives. The following table summarized the key features of this alternative.

TABLE 4-4: OVERCROSSING ALTERNATIVE 3 SUMMARY

DESCRIPTION	Bridge viaduct through Chico Mall parking lot and signature bridge span at 20th Street/Business Lane intersection.
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Direct connection between Phase 1 and Phase 4 of Bikeway 99 facilities • Compatible with architectural concepts
COMMUNITY FEEDBACK	This alternative was not well received by the community. The large cost associated with the bridge viaduct structure through the Chico Mall parking lot does not meet the project goal of maximizing public value.
PROJECT LENGTH	2,900' (including 1,800' of bridge/elevated path).
PROJECT IMPLEMENTATION	Most of the structural work will be outside of Caltrans right of way. Since less than $1 million will be constructed in Caltrans right of way, requiring only a Caltrans encroachment permit, project delivery will be expedited.
PEDESTRIAN AND BICYCLIST IMPACT	While the alignment is less direct than Overcrossing Alternative 2, this alignment will place pedestrians and bicyclists directly onto Business Lane, providing direct access to the restaurants and businesses in the area.
SAFETY	The overcrossing will separate path users from vehicular traffic on the congested 20th Street, providing increased safety. Includes security cameras and path lighting.
RIGHT OF WAY CONSIDERATIONS	A total of thirteen (13) properties will be affected by this alternative. The most significant impact is to the parking lot located at the corner of 20th Street and Business Lane (APN 002-420-029). Acquisition Time: **12 Months** Acquisition Costs: **$1.7M**
TRAFFIC IMPACTS	No negative impacts to traffic. Increase to alternative transportation will only improve traffic.
BUSINESS IMPACTS	This alternative requires acquisition of property along Business Lane (a private road) and will require significant impacts to the Southwest parking lot at the intersection of Business Lane and 20th Street. At-grade crossings at the driveways for several businesses along Business Lane will also impact access.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	This alternative avoids Caltrans full oversight by requiring less than $1 million in Caltrans right of way; however, it requires the greatest coordination and impacts to businesses in the project area, including impacts to Business Lane, a private road.
PROJECT COST	Construction Cost: **$14.5 M** Total Cost: **$20.3 M**
CONCLUSION	This alternative did not receive much community support. The only support was for its connection to Business Lane. However, more support and economic value is achieved by Overcrossing Alternative 1. Based on the limited support and largest cost, this alternative is considered infeasible.

PROJECT COST ESTIMATE

Overcrossing Alternative 3

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	13,200	$ 10.00	$ 132,000
2	Retaining Wall	SF	6,400	$ 75.00	$ 480,000
3	Security Camera	EA	7	$ 10,000.00	$ 70,000
4	Lighting System	EA	24	$ 8,000.00	$ 192,000
5	Pedestrian Railing	LF	12,800	$ 50.00	$ 640,000
6	Approach Span Parking Lot Viaduct	SF	16,800	$ 300.00	$ 5,040,000
7	Main Bridge Span - "Tree City" Concept	SF	3,500	$ 750.00	$ 2,625,000
8	Landscaping	LS	1	$ 100,000.00	$ 100,000

Construction	$	9,279,000
Mobilization (10%)	$	927,900
Contingency (25%)	$	2,320,000
Subtotal - Construction Cost	$	12,526,900
*** Escalated Construction Cost**	**$**	**14,500,000**
** PSR	$	-
** Caltrans Costs	$	-
** PA&ED	$	150,000
PS&E (15%)	$	2,180,000
Escalated Right of Way	$	1,390,000
Right of Way Support	$	300,000
Construction Management (12%)	$	1,740,000
Total Project Cost	**$**	**20,260,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** Less than $1M will be constructed within Caltrans right of way. A Caltrans Encroachment Permit will be required.

Total Project Cost (Rounded) $20.3 M

4.2.4 Overcrossing Alternative 4

Overcrossing Alternative 4 places the Phase 5 alignment within the landscaped area of the SR-99/20th Street Interchange. This alternative did not receive any community support; however, it was included in this Study to provide a comprehensive list of all feasible alternatives. The following table summarized the key features of this alternative.

TABLE 4-5: OVERCROSSING ALTERNATIVE 4 SUMMARY

DESCRIPTION	Direct route, that crosses over the SR-99 on and off ramps and in front of the abutments of the 20th Street Highway Overcrossing.
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Low potential for path access to businesses • Direct connection between Phase 1 and Phase 4 Bikeway 99 facilities • Places alignment almost entirely within Caltrans right of way. • Fencing required along entire alignment
COMMUNITY FEEDBACK	This alternative was not well received by the community. The site currently has issues with transiency and this alternative would provide undesirable access to the landscaped areas on the interchange, sponsoring further vagrancy and encampments.
PROJECT LENGTH	2,500' (including 1,500' of bridge/elevated path)
PROJECT IMPLEMENTATION	This alternative place several structures within Caltrans right of way, requiring between $1 million and $3 million to be constructed in Caltrans right of way and Caltrans Streamline Oversight. This will impact the project delivery schedule as it will result in direct impacts to Caltrans facilities and operations.
PEDESTRIAN AND BICYCLIST IMPACT	Direct path of travel for alternative transportation commuters, however, it does not provide a link to businesses in the area. Tall fencing will also be required on each edge of the path, limiting the openness of the path.
SAFETY	The overcrossing will separate path users from vehicular traffic on the congested 20th Street; however, by placing the path in the interchange, away from the populated area, potential for criminal activity is increased. Vagrancy and other associated crime will also be increased by providing access to the landscaped area within the interchange.
RIGHT OF WAY CONSIDERATIONS	Six (6) properties will be affected by this alternative. The most significant impact is to Caltrans right of way; however, the parking lots along the SR-99 Ramps will also be impacted at the tie-ins to Phases 1 and 4. Acquisition Time: **12 Months** Acquisition Costs: **$1.7 M**
TRAFFIC IMPACTS	No negative impacts to traffic. Increase of alternative transportation will only improve traffic.
BUSINESS IMPACTS	This alternative minimizes impacts to businesses; however, it also does not provide access point to the businesses in the area. Community outreach revealed that improved access to businesses in the area is an important object of this project, further limiting the feasibility of this alternative.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	While Caltrans does not currently have plans to improve the interchange capacity by changing its configuration, the possibility of widening SR-99 or modifying its configuration may change in the future. This would require removal or significant modification to this alternative, limiting its feasibility.
PROJECT COST	Construction Cost: **$6.9 M** Total Cost: **$10.9 M**
CONCLUSION	Due to low community support for this alternative and the lack of access to local businesses, this alternative is considered infeasible.

PROJECT COST ESTIMATE

Overcrossing Alternative 4

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	19,200	$ 10.00	$ 192,000
2	Retaining Wall	SF	19,200	$ 80.00	$ 1,536,000
3	Tieback Retaining Wall	SF	2,160	$ 300.00	$ 648,000
4	Security Camera	EA	7	$ 10,000.00	$ 70,000
5	Lighting System	EA	21	$ 8,000.00	$ 168,000
6	Pedestrian Railing	LF	1,500	$ 50.00	$ 75,000
7	Fencing	LF	1,600	$ 30.00	$ 48,000
8	SR 99 Ramp Bridges	SF	2,240	$ 700.00	$ 1,568,000
9	Landscaping	LS	1	$ 75,000.00	$ 75,000

Construction	$ 4,380,000
Mobilization (10%)	$ 438,000
Contingency (25%)	$ 1,095,000
Subtotal - Construction Cost	$ 5,913,000
*** Escalated Construction Cost**	**$ 6,900,000**
** PSR	$ 50,000
** Caltrans Costs	$ 50,000
** PA&ED	$ 350,000
PS&E (15%)	$ 1,040,000
Escalated Right of Way	$ 1,580,000
Right of Way Support	$ 150,000
Construction Management (12%)	$ 828,000
Total Project Cost	**$ 10,948,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** More than $3M will be constructed within Caltrans right of way. Full Caltrans Oversight may be required.

Total Project Cost (Rounded) $10.9 M

4.3 At-Grade Alternatives

Two at-grade alternatives were evaluated as part of this Feasibility Study. These alternatives do not provide the same increased safety as the overcrossing and undercrossing alternatives since they are not completely separated from vehicular traffic on the heavily congested 20th Street. They do, however, offer a low cost alternative to improving the existing connection between Phases 3 and 4 of Bikeway 99.

4.3.1 At-Grade Alternative 1

At-Grade Alternative 1 was not well-received by the community. The following table summarized the key features of this alternative.

TABLE 4-6: AT-GRADE ALTERNATIVE 1 SUMMARY

DESCRIPTION	Bikeway follows along the SR-99 on and off ramps, similar to Overcrossing Alternative 2 with an at grade crossing of 20th Street, east of the ramps.
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Direct connection between Phase 1 and Phase 4 of Bikeway 99 facilities • Signal modification required
COMMUNITY FEEDBACK	This alternative was not well received by the community due to its decreased safety and user experience. Path B was added based on community feedback.
PROJECT LENGTH	2,800'. Note: This includes the 300' long path connection to Business Lane.
PROJECT IMPLEMENTATION	Less than $1 million will be constructed in Caltrans right of way, requiring only a Caltrans encroachment permit, expediting project delivery.
PEDESTRIAN AND BICYCLIST IMPACT	Provides direct path of travel for alternative transportation commuters; however, it does not provide an unrestricted path of travel through the project site, requiring users to wait for a pedestrian phase before crossing 20th Street. Provides link to both sides of 20th Street and Business Lane, providing a direct link to the restaurants and businesses in the area.
SAFETY	A completely separated bikeway, protecting users from vehicular traffic on the congested 20th Street, is not provided. Security cameras and bikeway lighting have been included.
RIGHT OF WAY CONSIDERATIONS	Nine (9) properties will be affected by this alternative. The most significant impacts are to parking lots along SR-99 ramps (APN 002-450-040, 035 & 002-420-024, 025, 027, 028) and/or Caltrans right of way. The project includes improvements to commercial businesses that will require multiple levels of corporate approval. The alignment allows for the option of placing the majority of the bikeway within Caltrans right of way to decrease private property takes. Acquisition Time: **12 Months** Acquisition Costs: **$2.0 M**
TRAFFIC IMPACTS	See "Traffic Impacts" section on the following page.
BUSINESS IMPACTS	This alternative requires partial acquisition of the existing parking lots along the SR-99 on and off ramps and the vegetated area between Olive Garden and Applebee's to provide Path B (access to Business Lane). Drive aisles may be decreased as not to decrease parking. Signage along this area will also be impacted; however, consideration will be given for a variance to allow for combined signage.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	Alternative Path B was developed to provide a connection to Business Lane. While it is shown as an alternative connection to Phase 4 of Bikeway 99, additional contingency was added to the project estimate to allow for both paths to be constructed, providing more connectivity for path users.
PROJECT COST	Construction Cost: **$1.5 M** Total Cost: **$4.2 M**
CONCLUSION	Due to low community support, this alternative is not recommended.

- **Traffic Impacts**

A traffic analysis was performed to determine the LOS of the 20th Street and SR 99 northbound on and off ramp intersection after a cross walk was installed. The results are found in Table 4-7 and Figure 4-4 below:

TABLE 4-7: 20TH STREET AND SR-99 RAMPS EXISTING TRAFFIC DATA

	Overall Delay [Seconds]	Intersection Level of Service
Existing Condition	44.7	D
With At-Grade Crossing Added	46.4	D
Difference	+1.7	None

	Intersection Queue Lengths [Feet]						
	EB Left	EB Thru	WB Thru	WB Right	NB Left	NB Thru	NB Right
Without East Leg Crossing	205	582	255	924	68	69	179
With East Leg Crossing	263	908	313	934	67	68	180
Difference	+58	+326	+58	+10	-1	-1	+1

The added crosswalk would impact eastbound through traffic by increasing queue lengths by approximately 326 feet, backing traffic into the adjacent intersection at the 20th Street & SR-99 Southbound ramps. Queue stacking in the full distance between the SR-99 northbound and southbound ramp terminals, over 900 feet, is not an acceptable long-term alternative.

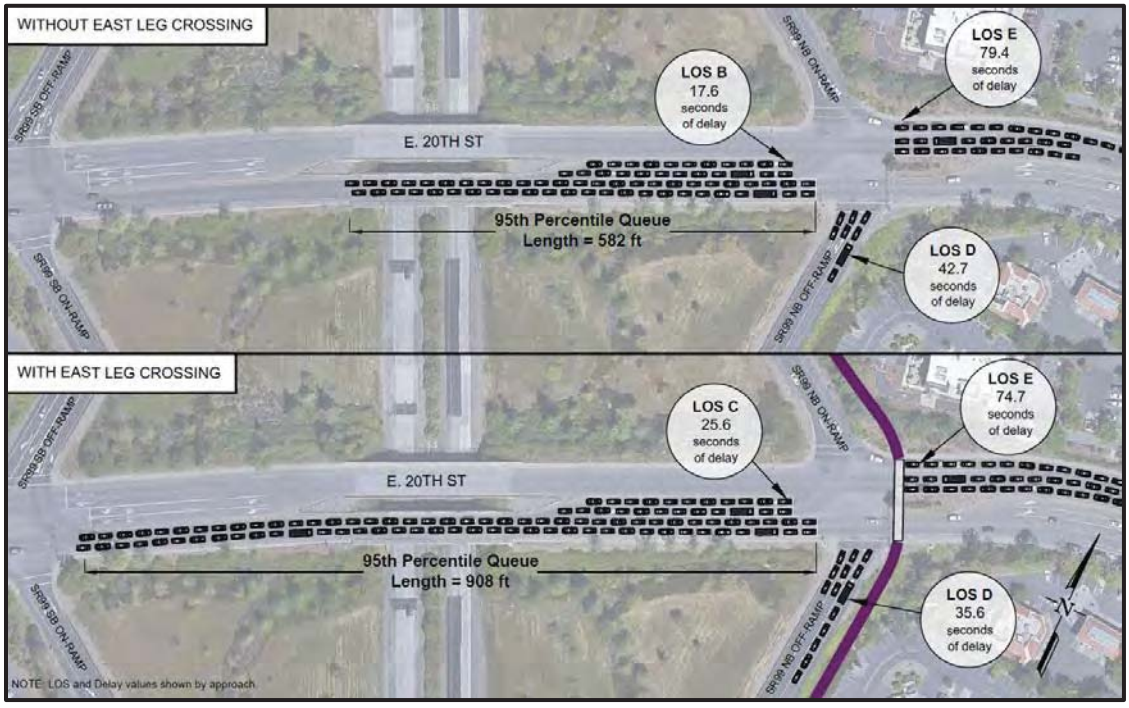
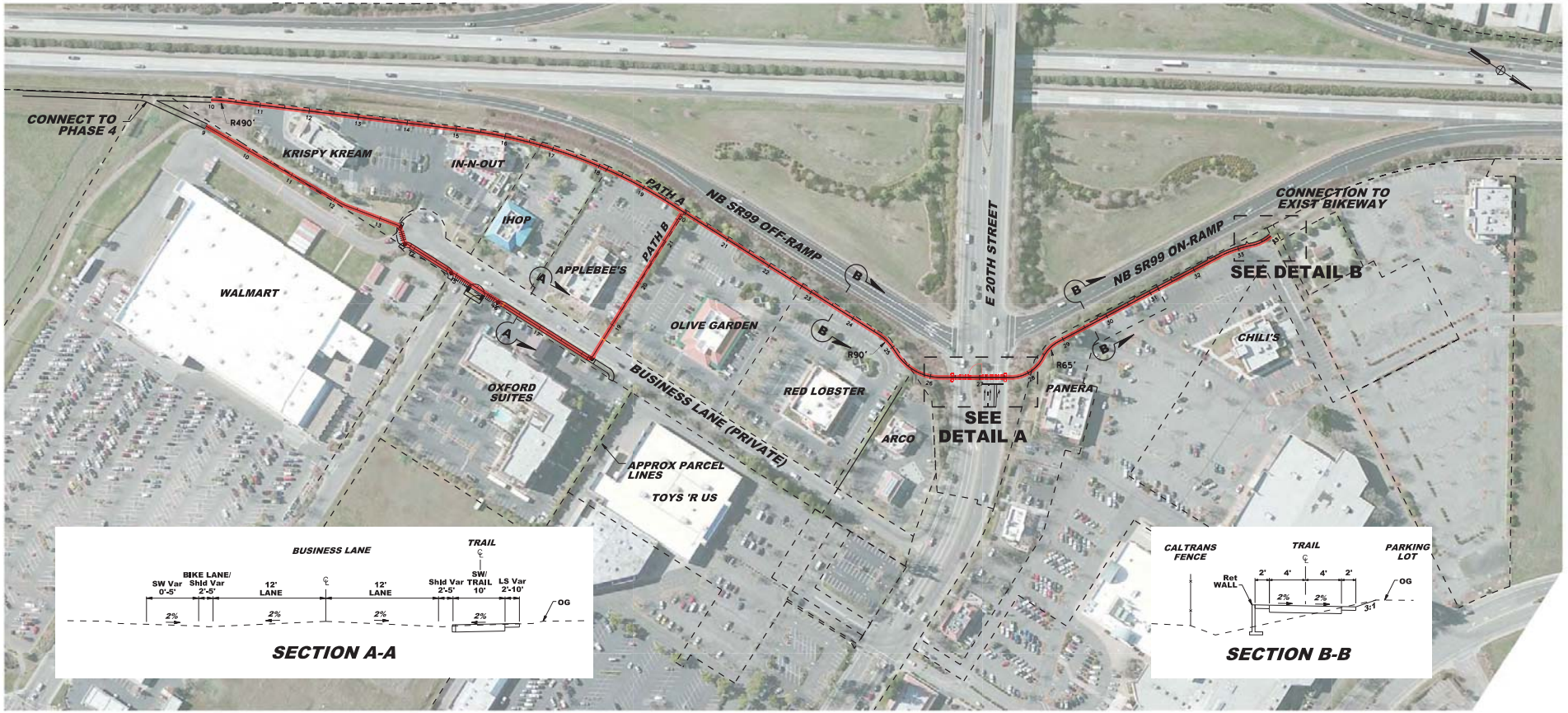
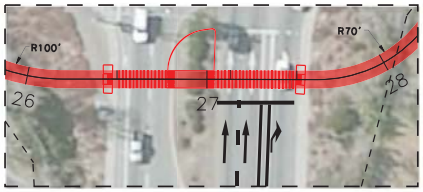
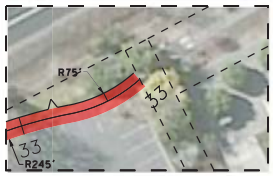


FIGURE 4-4: AT-GRADE ALTERNATIVE 1 SUMMARY OF TRAFFIC ANALYSIS





DETAIL A



DETAIL B

LEGEND:

- ROW BOUNDARY LINE
- AT GRADE PATH
- RETAINING WALL

SR99 CORRIDOR BIKEWAY FACILITY - PHASE 5 - FEASIBILITY STUDY REPORT

FIGURE 4-5: AT-GRADE ALT 1 - LAYOUT

PROJECT COST ESTIMATE

At-Grade Alternative 1

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	33,600	$ 10	$ 336,000
2	Thermoplastic Traffic Stripe	LF	1,000	$ 10	$ 10,000
3	Retaining Wall	SF	1,600	$ 65	$ 104,000
4	Security Camera	EA	7	$ 10,000	$ 70,000
5	Lighting System	EA	24	$ 8,000	$ 192,000
6	Traffic Signal Reconstruction	EA	3	$ 50,000	$ 150,000
7	Landscaping	LS	1	$ 75,000	$ 75,000

Construction	$	937,000
Mobilization (10%)	$	93,700
Contingency (25%)	$	235,000
Subtotal - Construction Cost	$	1,265,700
*** Escalated Construction Cost**	**$**	**1,500,000**
** PSR	$	-
** Caltrans Costs	$	-
** PA&ED	$	150,000
PS&E (20%)	$	300,000
Escalated Right of Way	$	1,650,000
Right of Way Support	$	300,000
Construction Management (20%)	$	300,000
Total Project Cost	**$**	**4,200,000**

* Escalated Construction Cost based on: 5 Years @ 3% (2022)

** Less than $1M will be constructed within Caltrans right of way. A Caltrans Encroachment Permit will be required.

Total Project Cost (Rounded) $4.2 M

4.3.2 At-Grade Alternative 2

At-Grade Alternative 2 was not well-received by the community. The following table summarized the key features of this alternative.

TABLE 4-8: AT-GRADE ALTERNATIVE 2 SUMMARY

DESCRIPTION	Bikeway follows similar alignment as Overcrossing Alternative 1, except a west leg cross-walk is used to cross 20th Street.
KEY FEATURES	• 8' wide bikeway with 2' clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Direct connection between Phase 1 and Phase 4 of Bikeway 99 facilities • Signal modification required
COMMUNITY FEEDBACK	This alternative was not well received by the community due to its decreased safety and user experience.
PROJECT LENGTH	3,000'
PROJECT IMPLEMENTATION	Less than $1 million will be constructed in Caltrans right of way, requiring only a Caltrans encroachment permit, expediting project delivery.
PEDESTRIAN AND BICYCLIST IMPACT	Less direct path of travel than At-Grade Alternative 1, but provides a more direct connection to businesses in the project area. However, it does not provide an unrestricted path of travel through the project site, requiring users to wait for a pedestrian phase before crossing 20th Street.
SAFETY	A completely separated bikeway, protecting users from vehicular traffic on the congested 20th Street, is not provided. Security cameras and bikeway lighting have been included.
RIGHT OF WAY CONSIDERATIONS	A total of thirteen (13) properties will be affected by this alternative. The most significant impacts are to the parking lots and drive-thru along the SR-99 Ramps and 20th Street. Acquisition Time: **12 Months** Acquisition Costs: **$1.7 M**
TRAFFIC IMPACTS	See "Traffic Impacts" section below.
BUSINESS IMPACTS	This alternative requires acquisition of property along Business Lane (a private road). At-grade crossings at the driveways for several businesses along Business Lane will also impact access.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	This alternative avoids Caltrans full oversight by requiring less than $1 million in Caltrans right of way; however, it requires the greatest coordination and impacts to businesses in the project area, including impacts to Business Lane.
PROJECT COST	Construction Cost: **$1.6 M** Total Cost: **$4.1 M**
CONCLUSION	Due to low community support, this alternative is not recommended.

- **Traffic Impacts**

A traffic analysis was performed to determine the LOS of the 20th Street and Chico Mall/Village intersection after a cross walk was installed. The results are found in Table 4-9 and Figure 4-6 on the following page.

The addition of the crossing on the west leg of the intersection increases overall intersection delay to 70.9 seconds, creating no change in LOS. The most impacted movement is the westbound through movement with an average of 13.3 seconds of increased delay per vehicle. With the addition of the west leg crossing, queue lengths increase slightly, more so for the movements with the highest traffic volumes.

TABLE 4-9: 20TH STREET AND CHICO MALL/VILLAGE CENTER EXISTING TRAFFIC ANALYSIS WITH AT-GRADE CROSSING

	Overall Delay [Seconds]	Intersection Level of Service
Existing Condition	65.0	E
With At-Grade Crossing Added	70.9	E
Difference	+5.9	None

	Intersection Queue Lengths [Feet]						
	EB Left	EB Thru	WB Thru	WB Right	NB Left	NB Thru	NB Right
Without West Leg Crossing	320	726	144	882	283	269	200
With West Leg Crossing	329	745	147	903	289	276	199
Difference	+9	+19	+3	+21	+6	+7	-1

A west leg crossing at the 20th Street & Chico Mall/Village Center intersection creates a hazardous "double threat" situation from the dual permissive southbound right turns. A double threat situation occurs when a vehicle in one of the conflicting lanes blocks the view of the pedestrian from the vehicle in the second lane. These situations would be hazardous to bikeway users and do not align with the goals of the project. This alternative is not recommended.

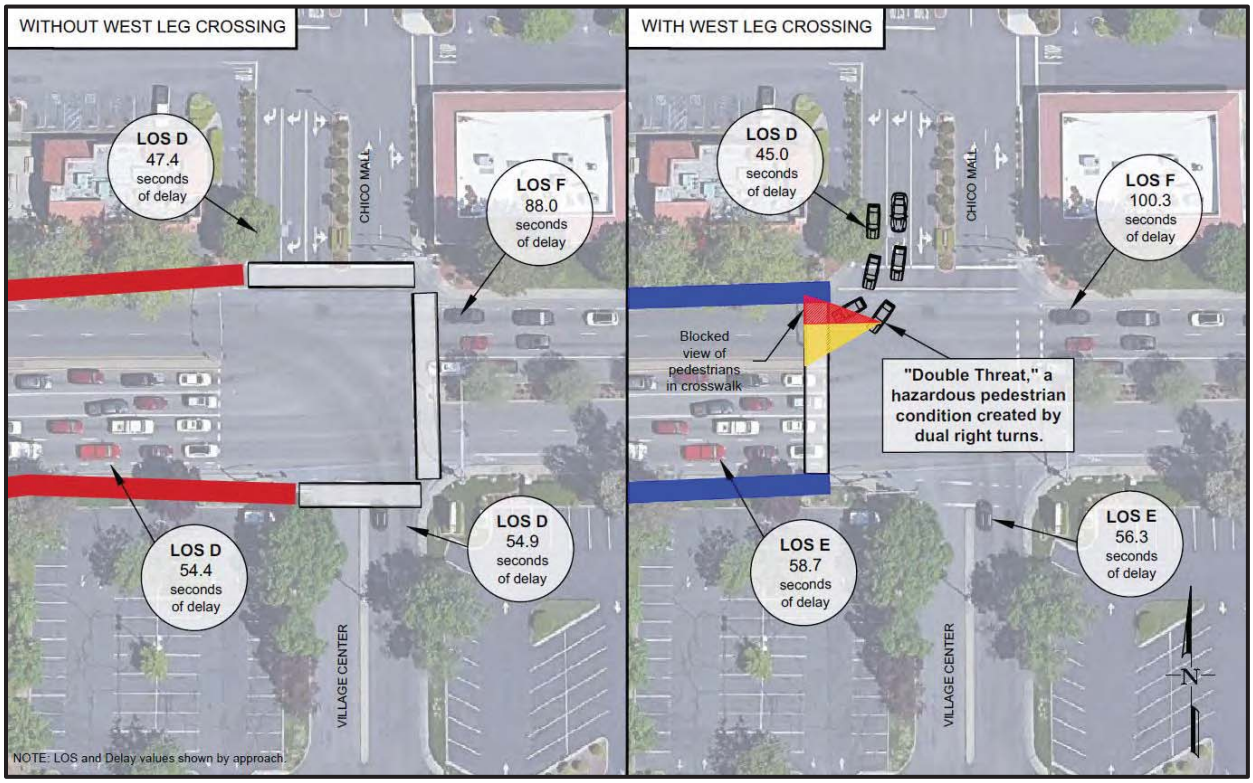
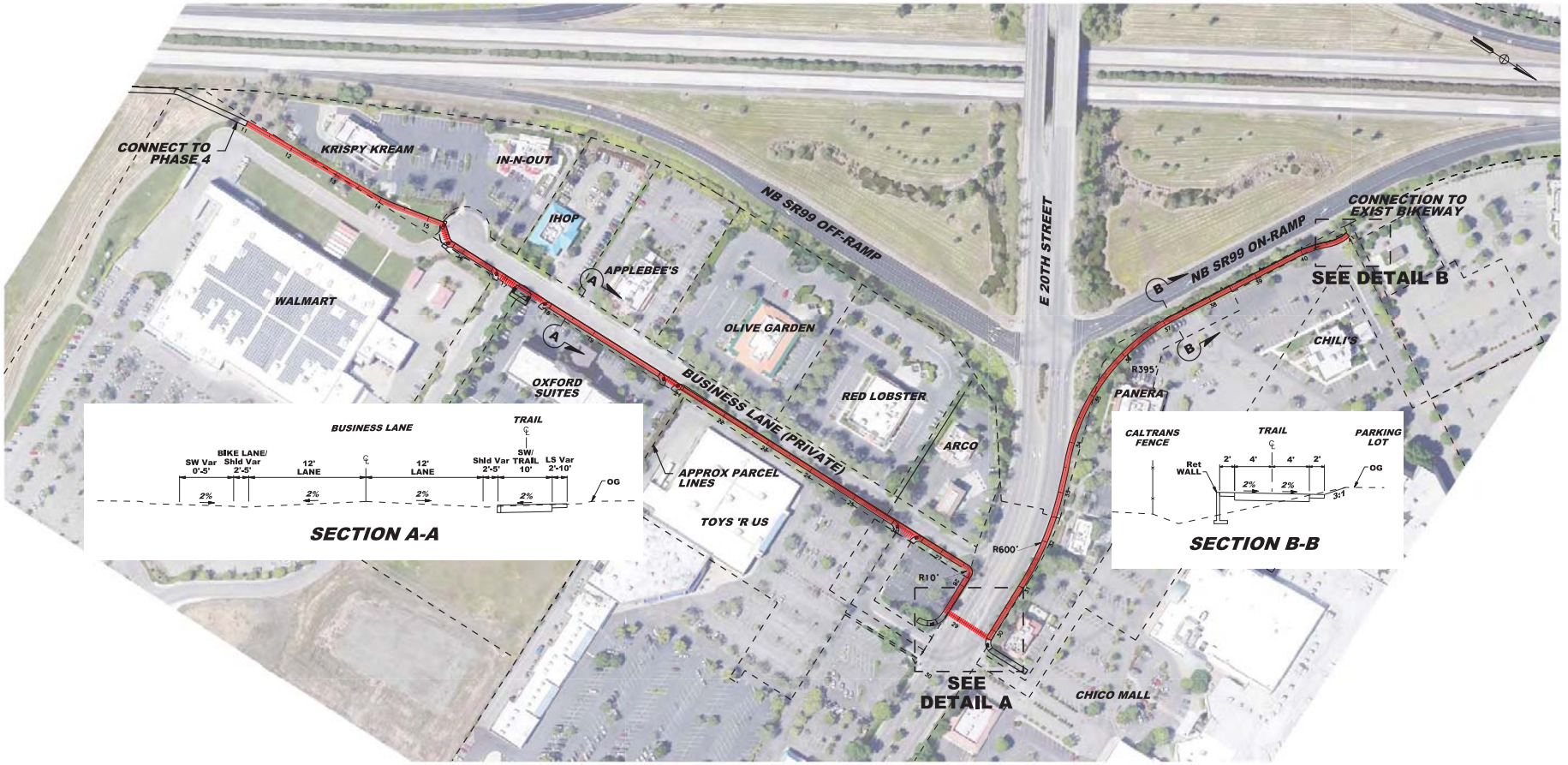
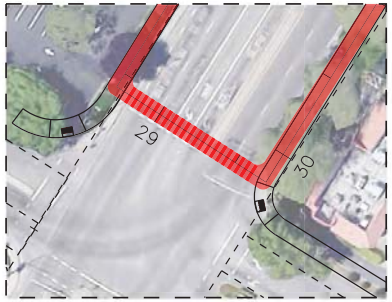
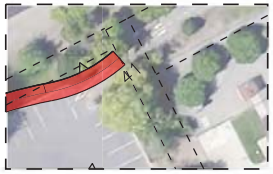


FIGURE 4-6: AT-GRADE ALTERNATIVE 2 SUMMARY OF TRAFFIC ANALYSIS





DETAIL A



DETAIL B

LEGEND:

- ROW BOUNDARY LINE
- AT GRADE PATH
- RETAINING WALL

FIGURE 4-7: AT-GRADE ALT 2- LAYOUT

PROJECT COST ESTIMATE

At-Grade Alternative 2

Item	Item Description	Unit	Quantity	Price	Amount
2	Class I Path	SF	36,000	$ 10.00	$ 360,000
3	Thermoplastic Traffic Stripe	LF	100	$ 10.00	$ 1,000
4	Retaining Wall	SF	1,600	$ 65.00	$ 104,000
5	Closed Circuit Television System	EA	7	$ 10,000.00	$ 70,000
6	Lighting System	EA	26	$ 8,000.00	$ 208,000
7	Traffic Signal Reconstruction	EA	4	$ 50,000.00	$ 200,000
8	Landscaping	LS	1	$ 75,000.00	$ 75,000

Construction	$	1,018,000
Mobilization (10%)	$	101,800
Contingency (25%)	$	255,000
Subtotal - Construction Cost	$	1,374,800
*** Escalated Construction Cost**	**$**	**1,600,000**
** PSR	$	-
** Caltrans Costs	$	-
** PA&ED	$	150,000
PS&E (20%)	$	320,000
Escalated Right of Way	$	1,360,000
Right of Way Support	$	300,000
Construction Management (20%)	$	320,000
Total Project Cost	**$**	**4,050,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** Less than $1M will be constructed within Caltrans right of way. A Caltrans Encroachment Permit will be required.

Total Project Cost (Rounded) $4.1 M

4.4 Undercrossing Alternative

The Undercrossing Alternative was a not well-received by the community primarily due to safety and a lack of openness on the path. The following table summarized the key features of this alternative.

TABLE 4-10: UNDERCROSSING ALTERNATIVE SUMMARY

DESCRIPTION	Direct route, that crosses under the SR 99 on and off ramps and under 20th Street with in the landscaped area of the SR 99 20th Street Interchange.
KEY FEATURES	• 8' wide Bikeway with 2' Clear shoulders • Compatible with future roundabouts (20th Street Circulation Study) • Low potential for bikeway access to businesses • Direct Connection between Phase 1 and Phase 4 of Bikeway 99 facilities • Places alignment almost entirely within Caltrans R/W. • Fencing required along entire alignment
COMMUNITY FEEDBACK	This alternative was not well received by the community. The site currently has issues with transient and this alternative would provide undesirable access to the landscaped areas on the interchange, sponsoring further vagrancy and encampments.
PROJECT LENGTH	2,500' (including 1,500' of undercrossing/depressed bikeway).
PROJECT IMPLEMENTATION	This alternative place several structures and pump stations within Caltrans right of way, requiring greater than $3 million to be constructed in Caltrans right of way and full Caltrans oversight. This will impact the project delivery schedule as it will result in direct impacts to Caltrans facilities and operations.
PEDESTRIAN AND BICYCLIST IMPACT	Provides direct path of travel for alternative transportation commuters; however, it does not provide a link to businesses in the area. Tall fencing will also be required on each edge of the bikeway, limiting the openness of the bikeway.
SAFETY	The undercrossing will separate bikeway users from vehicular traffic on the congested 20th Street; however, by placing the bikeway in the interchange, away from the populated area, potential for criminal activity is increased. Vagrancy and other associated crime will also be increased by providing access to the landscaped area within the interchange.
RIGHT OF WAY CONSIDERATIONS	Six (6) properties will be affected by this alternative. The most significant impacts are to Caltrans right of way; however, the parking lots along the SR-99 Ramps will also be impacted at the tie-ins to Phases 1 and 4. Acquisition Time: **12 Months** Acquisition Costs: **$1.8 M**
TRAFFIC IMPACTS	No negative impacts to traffic. Increase to alternative transportation will only improve traffic.
BUSINESS IMPACTS	This alternative minimizes impacts to businesses; however, it also does not provide access to the businesses in the area. Community outreach revealed that improved access to businesses in the area is an important objective of this project, further limiting the feasibility of this alternative.
ENVIRONMENTAL CONSIDERATIONS	NEPA: Categorical Exclusion CEQA: **IS/MND**
ADDITIONAL CONSIDERATIONS	As noted in the Preliminary Geotechnical Foundation Report included in Appendix E, high groundwater is present at the site. This will require several pump stations to ensure the path is dry, and will complicate and increase construction costs of the undercrossing.
PROJECT COST	Construction Cost: **$10.9 M** Total Cost: **$16.1 M**
CONCLUSION	Due to low community support for this alternative, lack of access to local businesses, and project costs, this alternative is considered infeasible.

PROJECT COST ESTIMATE
Undercrossing Alternative

Item	Item Description	Unit	Quantity	Price	Amount
1	Class I Path	SF	28,200	$ 10.00	$ 282,000
2	Bridge Construction at SR-99 On Ramp	LS	1	$ 880,000.00	$ 880,000
3	Bridge Construction at E. 20th Street	LS	1	$1,320,000.00	$ 1,320,000
4	Bridge Construction at SR-99 Off Ramp	LS	1	$ 880,000.00	$ 880,000
5	Retaining Wall	SF	32,400	$ 75.00	$ 2,430,000
6	Pumps	EA	3	$ 300,000.00	$ 900,000
7	Closed Circuit Television System	EA	8	$ 10,000.00	$ 80,000
8	Lighting System	EA	23	$ 8,000.00	$ 184,000
9	Landscaping	LS	1	$ 20,000.00	$ 20,000

Construction	$ 6,976,000
Mobilization (10%)	$ 697,600
Contingency (25%)	$ 1,744,000
Subtotal - Construction Cost	$ 9,417,600
*** Escalated Construction Cost**	**$ 10,900,000**
** PSR	$ 50,000
** Caltrans Costs	$ 50,000
** PA&ED	$ 350,000
PS&E (15%)	$ 1,640,000
Escalated Right of Way	$ 1,610,000
Right of Way Support	$ 150,000
Construction Management (12%)	$ 1,308,000
Total Project Cost	**$ 16,058,000**

* Escalated Construction Cost based on:
5 Years @ 3% (2022)

** More than $3M will be constructed in Caltrans right of way. Full Caltrans Oversight may be required.

Total Project Cost (Rounded) $16.1 M

5.0 PROJECT COSTS

Detailed Project Costs by Alternative are included in Sections 4.2 through 4.4. The table below summarizes the total project cost for each alternative studied.

TABLE 5-1: PROJECT COST SUMMARY

	OVERCROSSING Alternative 1	OVERCROSSING Alternative 2	OVERCROSSING Alternative 3	OVERCROSSING Alternative 4	AT-GRADE Alternative 1	AT-GRADE Alternative 2	UNDERCROSSING
Preliminary Engineering:	**$1.64 M**	**$1.83 M**	**$2.33 M**	**$1.44 M**	**$0.45 M**	**$0.47 M**	**$2.04 M**
• **PSR**	$0.00 M	$0.05 M	$0.00 M	$0.05 M	$0.00 M	$0.00 M	$0.05 M
• **PA&ED**	$0.15 M	$0.35 M	$0.15 M	$0.35 M	$0.15 M	$0.15 M	$0.35 M
• **PS&E**	$1.49 M	$1.43 M	$2.18 M	$1.04 M	$0.30 M	$0.32 M	$1.64 M
Escalated Right of Way *	**$1.70 M**	**$2.22 M**	**$1.69 M**	**$1.73 M**	**$1.95 M**	**$1.66 M**	**$1.76 M**
Escalated Construction: *	**$11.09 M**	**$10.64 M**	**$16.24 M**	**$7.73 M**	**$1.80 M**	**$1.92 M**	**$12.31 M**
• **Construction**	$9.90 M	$9.50 M	$14.50 M	$6.90 M	$1.50 M	$1.60 M	$10.90 M
• **Construction Management**	$1.19 M	$1.14 M	$1.74 M	$0.83 M	$0.30 M	$0.32 M	$1.31 M
Total Project Cost	**$14.4 M**	**$14.7 M**	**$20.3 M**	**$10.9 M**	**$4.2 M**	**$4.1 M**	**$16.1 M**

* Costs escalated as follows: Construction - 5 years to 2022
Right of Way - 4 years to 2021

5.1 Funding

5.1.1 Active Transportation Program (ATP)

Phase 5 of Bikeway 99 will apply for the 2018 funding cycle of the Active Transportation Program (ATP). The program was created to encourage increased usage of active modes of transportation, such as biking and walking. As shown below, Phase 5 is very well aligned with the program goals.

TABLE 5-2 ATP GOALS AND SCORING CRITERIA

ATP GOALS AND SCORING	BIKEWAY 99 PHASE 5
Potential for increased walking and bicycling and increased and improved connectivity and mobility of non-motorized users **(0-35 points)**	☑ Phase 5 is the last remaining portion of Bikeway 99 and will provide non-motorized connectivity from Eaton Road to the Skyway (approximately 7 miles).

ATP GOALS AND SCORING	BIKEWAY 99 PHASE 5
Potential for reducing the number and/or rate or the risk of pedestrian and bicyclist fatalities and injuries **(0-25 points)**	☑ The recommended Overcrossing Alternative 2 provides a completely separated bikeway, greatly reducing the number and rate of injuries.
Benefit to disadvantaged communities **(0-10 points)**	☑ Using Phase 5 and the existing bikeway network, several low-income areas in the City of Chico will be linked to the Chico Mall and other businesses in the area.
Public participation and planning **(0-10 points)**	☑ The recommendations included in this study were primarily based on input from the public during three community workshops.
Improved public health **(0-10 points)**	☑ The project will sponsor active transportation, promoting public health and improving air quality.
Cost-effectiveness **(0-5 points)**	☑ The recommended Overcrossing Alternative 2 uses the most efficient and direct separated alignment to connect Phases 3 and 4.
Leveraging of non-ATP funds **(0-5 points)**	☑ The community outreach efforts and this feasibility study were funded by local funds. Additionally, CMAQ funding is anticipated to be used for the preliminary engineering phase.

5.1.2 Congestion Mitigation and Air Quality (CMAQ)

Phase 5 of Bikeway 99 will also use the Congestion Mitigation and Air Quality (CMAQ) Improvement Program to fund the preliminary engineering phase of the project. The goals of the CMAQ Program are:

- Fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, and particulate matter.
- Improve air quality and relieve congestion.
- Constructs bicycle and pedestrian facilities that are not exclusively recreational and reduce vehicle trips.

Phase 5 meets the goals of the CMAQ Program by improving air quality through the promoted use of bicycles and relieving congestion for bicyclists, pedestrians and automobiles.

6.0 ENVIRONMENTAL CONSIDERATIONS

The Project Team evaluated the environmental considerations for the seven alignment alternatives included in this Feasibility Study to determine required environmental technical studies. A summary of required technical studies and type of analysis required is included in Tables 6-1 and 6-2.

Each alternative would require a Preliminary Site Assessment (Phase 1 and Phase 2), Natural Environment Study – Minimal Impacts, Section 4(f) De Minimis, Noise Technical Memorandum, and Historic Property Survey Report/Archaeological Survey Report. A Minor Visual Impact Assessment would be required for the overcrossing options. Overall, it is anticipated, from all alternatives studies, that there will be similar minor impacts on environmental resources and no significant impacts are anticipated that cannot be reduced to less than significant with avoidance, minimization, and mitigation measures.

The use of Federal funds will require compliance with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Since the recommended alternative includes more than $3 million in Caltrans right of way, full Caltrans oversight may be required. The Federal Lead Agency for NEPA compliance is Caltrans. Under CEQA, the appropriate environmental document is an Initial Study leading to a Mitigated Negative Declaration (IS/MND). This type of document will allow Caltrans and the City of Chico to fully disclose the project and the anticipated impacts to the public. Under NEPA, this project falls under the Federal Highway Administration's (FHWA) Categorical Exclusion 23 CFR 771 activity (c)(3): Construction of bicycle and pedestrian lanes, paths, and facilities.

TABLE 6-1: REQUIRED TECHNICAL STUDIES FOR RECOMMENDED ALTERNATIVE (OVERCROSSING ALTERNATIVE 2)

RESOURCE TYPE	REQUIRED STUDY	COORDINATION
Noise (Construction Related)	Construction Noise Technical Memorandum	Caltrans
Hazardous Materials/Hazardous Waste	Initial Site Assessment (Phase 1) & Preliminary Site Assessment (Phase 2)	Caltrans
Biological Resources	Natural Environment Study – Minimal Impacts (NES-MI)	Caltrans
Cultural	Historic Property Survey Report/Archaeological Survey Report (HPSR/ASR)	Caltrans
Section 4(f)	Section 4(f) De Minimis	Caltrans
Visual Resources	Minor Visual Impact Assessment	Caltrans

TABLE 6-2: REQUIRED ENVIRONMENTAL RESOURCES AND STUDIES BY ALTERNATIVE

ENVIRONMENTAL RESOURCES & STUDIES	OVERCROSSING ALTERNATIVES				AT-GRADE ALTERNATIVES		UNDERCROSSING
	1	2	3	4	1	2	
• Traffic					☑	☑	
• Noise*							
• Air Quality*							
• Hazardous Material/Hazardous Waste	☑	☑	☑	☑	☑	☑	☑
• Water Quality/Resources		☑		☑			
• Biological Resources	☑	☑	☑	☑	☑	☑	☑
• Wetlands							
• Section 4(f)	☑	☑	☑	☑	☑	☑	☑
• Visual Resources	☑	☑	☑	☑			
• Land Use and Community Impacts							
• Cultural Resources	☑	☑	☑	☑	☑	☑	☑
• Permits							
• CEQA	☑	☑	☑	☑	☑	☑	☑
• NEPA	☑	☑	☑	☑	☑	☑	☑

* The table analyzes impacts associated with the final built project. There will be noise, air, and visual impacts associated with construction of any project alternative.

7.0 RIGHT OF WAY IMPACTS AND COORDINATION

The right of way process consists of valuation of necessary property rights in the form of an appraisal. When Federal moneys are being used for any portion of the project, a review appraisal report is also required. Upon completion of the valuation, the City will set a fair market value and authorize first written offers to be provided to the property owners. Property negotiations will start once first written offers are presented and will continue until the executed documents are obtained. After an owner executes the documents, they are provided to the City for approval and submittal into escrow. Escrow services will be required for title insurance; escrow will coordinate the transfer of property rights to the City and payments to the owner.

Figure 7-1 shows the existing property lines, Caltrans right of way, and ownership information for all parcels in the project area. Table 7-1 summarizes the anticipated right of way areas and costs for each alternative.

The following right of way impacts are presented for each of the seven alternatives:

- R/W Needs (SF)
- TCE Needs (SF)
- Lost Parking Stalls (EA)
- Lost Shrubs (EA)
- Lost Trees (EA)
- Lost Sign (EA)
- Miscellaneous Right of Way Damages

7.1 Commercial and Retail Parking Considerations

Per City of Chico Title 19, Section 19.70.040 “Number of parking spaces required” Land Use Type “Retail Trade,” which includes restaurants, cafés, bars, and other eating/drinking places, the requirement for parking is one space for each five seats or one space for each 94 SF of customer floor area, including outside dining, whichever is greater.

Per City of Chico Title 19, Section 19.70.060 “Design and development standards for off-street parking,” the minimum aisle width (travel lane) is 24 feet. In the case where minimum aisle width cannot be maintained, parking stalls will need to be removed.

For APN 002-420-025 (Red Lobster), the existing parking count is 114 spaces. The required number of parking spaces, based on seating, is 57. The amount of parking stalls proposed for removal in 22. The number of stalls remaining will be 92. This satisfies Chico's Title 19 Vehicle Space Requirements for Red Lobster, with a surplus of 35 stalls, above the required minimum.

For APN 002-420-024 (Olive Garden), the existing parking count is 145 spaces. The required number of parking spaces, based on seating, is 57. The amount of parking stalls proposed for removal in 9. The number of stalls remaining will be 136. This satisfies Chico's Title 19 Vehicle Space Requirements for Olive Garden, with a surplus of 79 stalls, above the required minimum.

SR99 CORRIDOR BIKEWAY FACILITY - PHASE 5 - FEASIBILITY STUDY REPORT

FIGURE 7-1: RIGHT OF WAY EXHIBIT

RIGHT OF WAY IMPACTS

OVERCROSSING | Alternative 1

TABLE 7-1: RIGHT OF WAY IMPACT AREAS AND COSTS FOR OVERCROSSING ALTERNATIVE 1

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC		1,400 SF						14,000.00
2	002-370-034	TRU 2005 RE 1 LLC		4,500 SF						$45,000
3	002-370-057	Walmart	800 SF	5,000 SF			2			$67,400
4	002-370-064	Business and Baney Lane Property Owners' Association Inc	700 SF	700 SF						$19,600
5	002-370-069	Baney Corporation	600 SF	3,800 SF		10		1		$61,300
6	002-420-021	Angry Blind Cat LLC (ARCO)	2,400 SF	2,800 SF			4			$77,200
7	002-420-024	N and D Restaurants Inc.								
8	002-420-025	ARCP RL Portfolio VII, LLC								
9	002-420-026	In N Out Burgers	800 SF	3,600 SF						$50,400
10	002-420-027	12085 Brandford Street Project								
11	002-420-028	The Joe Wong Family Trust								
12	002-420-029	Business and Baney Lane Property Owners' Association Inc	12,700 SF	11,000 SF		6	18			$367,100
13	002-450-018	OCAT Inc Lessee	1,900 SF	3,800 SF		10	1		$ 10,000	$86,200
14	002-450-035	Furrow Farms ETAL	5,200 SF	7,200 SF		50	4		$ 20,000	$204,100
15	002-450-036	Baldassari Trust				10				$2,500
16	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
17	N/A	Caltrans	3,600 SF	10,000 SF						$164,800
		TOTALS:	**31,900 SF**	**56,400 SF**		**86**	**29**	**1**	**$ 30,000**	**$1,243,200.00**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,243,200
Right of Way Costs, Escalated 4 Years @ 3%	$1,400,000
Right of Way Support	$300,000

TOTAL RIGHT OF WAY COSTS **$1,700,000**

RIGHT OF WAY IMPACTS

OVERCROSSING | Alternative 2

TABLE 7-2: RIGHT OF WAY IMPACT AREAS AND COSTS FOR OVERCROSSING ALTERNATIVE 2

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC								
2	002-370-034	TRU 2005 RE 1 LLC								
3	002-370-057	Walmart								
4	002-370-064	Business and Baney Lane Property Owners' Association Inc								
5	002-370-069	Baney Corporation								
6	002-420-021	Angry Blind Cat LLC (ARCO)						1		$20,000
7	002-420-024	N and D Restaurants Inc.	6,900 SF	5,900 SF	9	100	7	1		$264,700
8	002-420-025	ARCP RL Portfolio VII, LLC	2,800 SF	4,800 SF	21	50	5	1		$212,400
9	002-420-026	In N Out Burgers	9,100 SF	7,500 SF		200	9		$30,000	$332,300
10	002-420-027	12085 Brandford Street Project	1,600 SF	1,400 SF		40		1		$62,800
11	002-420-028	The Joe Wong Family Trust	2,200 SF	4,900 SF		40		1		$108,600
12	002-420-029	Business and Baney Lane Property Owners' Association Inc	300 SF							$5,400
13	002-450-018	OCAT Inc Lessee								
14	002-450-035	Furrow Farms ETAL	3,528 SF	5,800 SF		30	4			$135,004
15	002-450-036	Baldassari Trust								
16	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
17	N/A	Caltrans	10,000 SF	28,000 SF		50	5			$480,000
		TOTALS:	**39,628 SF**	**60,900 SF**	**30**	**510**	**30**	**5**	**$30,000**	**$1,704,804**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,704,804
Right of Way Costs, Escalated 4 Years @ 3%	$1,920,000
Right of Way Support	$300,000

TOTAL RIGHT OF WAY COSTS **$2,220,000**

RIGHT OF WAY IMPACTS

OVERCROSSING | Alternative 3

TABLE 7-3: RIGHT OF WAY IMPACT AREAS AND COSTS FOR OVERCROSSING ALTERNATIVE 3

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC		1,400 SF						$14,000
2	002-370-034	TRU 2005 RE 1 LLC		4,500 SF						$45,000
2	002-370-057	Walmart	800 SF	5,000 SF			2			$67,400
3	002-370-064	Business and Baney Lane Property Owners' Association Inc	700 SF	700 SF						$19,600
4	002-370-069	Baney Corporation	600 SF	3,800 SF		10		1		$61,300
5	002-420-021	Angry Blind Cat LLC (ARCO)	2,400 SF	2,800 SF			4			$77,200
6	002-420-024	N and D Restaurants Inc.								
7	002-420-025	ARCP RL Portfolio VII, LLC								
8	002-420-026	In N Out Burgers	800 SF	3,600 SF						$50,400
9	002-420-027	12085 Brandford Street Project								
10	002-420-028	The Joe Wong Family Trust								
11	002-420-029	Business and Baney Lane Property Owners' Association Inc	12,700 SF	11,000 SF			18			$365,600
12	002-450-018	OCAT Inc Lessee	25 SF	1,200 SF					$15,000	$27,450
13	002-450-035	Furrow Farms ETAL	960 SF	2,800 SF	7					$73,280
14	002-450-036	Baldassari Trust	150 SF	3,300 SF	1	10	3		$15,000	$61,700
15	002-450-040	JC Penny Properties Inc	3,380 SF	20,000 SF	6		7			$295,340
16	N/A	Caltrans	2,200 SF	3,400 SF						$73,600
		TOTALS:	**24,715 SF**	**63,500 SF**	**14**	**20**	**34**	**1**	**$30,000**	**$1,231,870**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	**$1,231,870**
Right of Way Costs, Escalated 4 Years @ 3%	**$1,390,000**
Right of Way Support	**$300,000**

TOTAL RIGHT OF WAY COSTS **$1,690,000**

TABLE 7-4: RIGHT OF WAY IMPACT AREAS AND COSTS FOR OVERCROSSING ALTERNATIVE 4

RIGHT OF WAY IMPACTS

OVERCROSSING | Alternative 4

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC								
2	002-370-034	TRU 2005 RE 1 LLC								
3	002-370-057	Walmart								
4	002-370-064	Business and Baney Lane Property Owners' Association Inc								
5	002-370-069	Baney Corporation								
6	002-420-021	Angry Blind Cat LLC (ARCO)								
7	002-420-024	N and D Restaurants Inc.								
8	002-420-025	ARCP RL Portfolio VII, LLC								
9	002-420-026	In N Out Burgers	9,100 SF	7,500 SF		200	6		$20,000	$317,800
10	002-420-027	12085 Brandford Street Project	1,600 SF	1,400 SF		40		1		$62,800
11	002-420-028	The Joe Wong Family Trust	660 SF	1,500 SF		10		1		$39,380
12	002-420-029	Business and Baney Lane Property Owners' Association Inc								
13	002-450-018	OCAT Inc Lessee								
14	002-450-035	Furrow Farms ETAL	900 SF	2,000 SF						$36,200
15	002-450-036	Baldassari Trust								
16	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
17	N/A	Caltrans	30,400 SF	30,000 SF		50				$859,700
		TOTALS:	**45,860 SF**	**45,000 SF**		**300**	**6**	**2**	**$20,000**	**$1,399,480**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,399,480
Right of Way Costs, Escalated 4 Years @ 3%	$1,580,000
Right of Way Support	$150,000

TOTAL RIGHT OF WAY COSTS **$1,730,000**

RIGHT OF WAY IMPACTS

AT-GRADE | Alternative 1

TABLE 7-5: RIGHT OF WAY IMPACT AREAS AND COSTS FOR AT-GRADE ALTERNATIVE 1

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREE	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC								
2	002-370-034	TRU 2005 RE 1 LLC								
2	002-370-057	Walmart								
3	002-370-064	Business and Baney Lane Property Owners' Association Inc								
4	002-370-069	Baney Corporation								
5	002-420-021	Angry Blind Cat LLC (ARCO)								
6	002-420-024	N and D Restaurants Inc.	3,400 SF	2,800 SF	9	50	7	1		$158,200
7	002-420-025	ARCP RL Portfolio VII, LLC	2,800 SF	4,800 SF	21	50	5	1		$212,400
8	002-420-026	In N Out Burgers	9,100 SF	7,500 SF		200	9		$30,000	$332,300
9	002-420-027	12085 Brandford Street Project	1,600 SF	1,400 SF		40		1		$62,800
10	002-420-028	The Joe Wong Family Trust	2,200 SF	1,800 SF		40		1		$77,600
11	002-420-029	Business and Baney Lane Property Owners' Association Inc	300 SF							$5,400
12	002-450-018	OCAT Inc Lessee								
13	002-450-035	Furrow Farms ETAL	3,500 SF	3,400 SF		30	4			$110,500
14	002-450-036	Baldassari Trust								
15	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
16	N/A	Caltrans	8,500 SF	25,000 SF		50	5			$423,000
		TOTALS:	**34,600 SF**	**49,300 SF**	**30**	**460**	**30**	**4**	**$30,000**	**$1,465,800**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,465,800
Right of Way Costs, Escalated 4 Years @ 3%	$1,650,000
Right of Way Support	$300,000

TOTAL RIGHT OF WAY COSTS **$1,950,000**

RIGHT OF WAY IMPACTS

AT-GRADE | Alternative 2

TABLE 7-6: RIGHT OF WAY IMPACT AREAS AND COSTS FOR AT-GRADE ALTERNATIVE 2

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGNS	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC	1,000 SF	1,000 SF						$28,000
2	002-370-034	TRU 2005 RE 1 LLC		4,800 SF						$48,000
3	002-370-057	Walmart	800 SF	5,000 SF			2			$67,400
4	002-370-064	Business and Baney Lane Property Owners' Association Inc	700 SF	700 SF						$19,600
5	002-370-069	Baney Corporation	600 SF	3,800 SF		10		1		$61,300
6	002-420-021	Angry Blind Cat LLC (ARCO)		1,400 SF			4			$20,000
7	002-420-024	N and D Restaurants Inc.								
8	002-420-025	ARCP RL Portfolio VII, LLC								
9	002-420-026	In N Out Burgers	800 SF	3,600 SF						$50,400
10	002-420-027	12085 Brandford Street Project								
11	002-420-028	The Joe Wong Family Trust								
12	002-420-029	Business and Baney Lane Property Owners' Association Inc	12,700 SF	11,000 SF			18			$365,600
13	002-450-018	OCAT Inc Lessee	2,200 SF	1,900 SF		10	1		$5,000	$67,600
14	002-450-035	Furrow Farms ETAL	6,100 SF	5,000 SF		50	4		$5,000	$183,300
15	002-450-036	Baldassari Trust	2,400 SF	1,800 SF		20	5		$5,000	$78,700
16	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
17	N/A	Caltrans	2,400 SF	8,700 SF						$130,200
		TOTALS:	**32,900 SF**	**51,300 SF**		**90**	**34**	**1**	**$15,000**	**$1,203,700**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,203,700
Right of Way Costs, Escalated 4 Years @ 3%	$1,360,000
Right of Way Support	$300,000

TOTAL RIGHT OF WAY COSTS **$1,660,000**

TABLE 7-7: RIGHT OF WAY IMPACT AREAS AND COSTS FOR UNDERCROSSING ALTERNATIVE

RIGHT OF WAY IMPACTS

UNDERCROSSING

	APN	ORGANIZATION / BUSINESS	R/W NEEDS	TCE NEEDS	LOST PARKING STALLS	LOST SHRUBS	LOST TREES	LOST SIGN	MISCELLANEOUS	COST
1	002-370-008	TRU 2005 RE 1 LLC								
2	002-370-034	TRU 2005 RE 1 LLC								
3	002-370-057	Walmart								
4	002-370-064	Business and Baney Lane Property Owners' Association Inc								
5	002-370-069	Baney Corporation								
6	002-420-021	Angry Blind Cat LLC (ARCO)								
7	002-420-024	N and D Restaurants Inc.								
8	002-420-025	ARCP RL Portfolio VII, LLC								
9	002-420-026	In N Out Burgers	9,100 SF	7,500 SF		200	6		$30,000	$327,800
10	002-420-027	12085 Brandford Street Project	1,600 SF	1,400 SF		40		1		$62,800
11	002-420-028	The Joe Wong Family Trust	700 SF	1,500 SF		10				$30,100
12	002-420-029	Business and Baney Lane Property Owners' Association Inc								
13	002-450-018	OCAT Inc Lessee								
14	002-450-035	Furrow Farms ETAL		3,600 SF						$36,000
15	002-450-036	Baldassari Trust								
16	002-450-040	JC Penny Properties Inc	3,200 SF	2,600 SF						$83,600
17	N/A	Caltrans	33,200 SF	25,000 SF		50	20			$890,100
		TOTALS:	**47,800 SF**	**41,600 SF**		**300**	**26**	**1**	**$30,000**	**$1,430,400**

RIGHT OF WAY IMPACT PRICING

Land Value @ $18/SF
TCE @ $10/SF
Parking Stalls @ $4,000/Stall
Shrubs @ $250/Shrub
Trees @ $1,500/Tree
Sign Relocation @ $10,000/Relocation; $20,000/Relocation of ARCO Sign
Miscellaneous Improvements

Right of Way Costs	$1,430,400
Right of Way Costs, Escalated 4 Years @ 3%	$1,610,000
Right of Way Support	$150,000

TOTAL RIGHT OF WAY COSTS **$1,760,000**

8.0 CALTRANS COORDINATION

Most alternatives proposed for Phase 5 of Bikeway 99, including the recommended alternative, requires obtaining and constructing within Caltrans right of way. This introduces the requirement for filing a Project Initiation Document (PID). To file a PID, one of two processes will be followed: Permit Engineering Evaluation Report (PEER) or Project Study Report-Project Development Support Project Initiation Document (PSR-PDS).

The recommended alternative includes more than $3 million of construction within Caltrans right of way; therefore, the next phase of the project may include a PSR-PDS with a Preliminary Environmental Analysis Report (PEAR).

This Feasibility Study was submitted to Caltrans for review, comment and concurrence. Caltrans prepared a concurrence letter that supports two overcrossing alternatives (No. 1 and No. 2) and defines the next steps and the appropriate PID. A copy of the concurrence letter is included in Appendix F.

9.0 NEXT STEPS

Upon acceptance by the City Council of this Feasibility Study and the recommendations contained within, the project will apply for the 2018 funding cycle of the Active Transportation Program and continue to the preliminary engineering phase.

9.1 Project Schedule

The following milestone schedule is proposed for Phase 5 of Bikeway 99.

TABLE 9-1: PROJECT MILESTONE SCHEDULE

MILESTONE	START DATE	END DATE
Feasibility Study	2016	2017
PSR-PDS	2017	2018
PA&ED	2018	2019
PS&E and Right of Way	2019	2021
Construction	Spring 2022	