Big Chico Creek Erosion Repair Project

Draft Initial Study / Proposed Mitigated Negative Declaration

CAPITAL PROJECT NO. 50497

Lead Agency: City of Chico, Public Works Department
411 Main Street
PO Box 3420
Chico, CA 95927

July 2025

Prepared By:

City of Chico Public Works – Engineering Department

Consultant: Dokken Engineering

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List of Acronyms

°F	degrees Fahrenheit
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AIA	Airport Influence Area
APE	Area of Potential Effects
APN	Assessor's Parcel Number
ARDR	Aquatic Resources Delineation Report
BA	Biological Assessment
BCALUCP	Butte County Airport Land Use Compatibility Plan
BCAQMD	Butte County Air Quality Management District
BCCER	Big Chico Creek Ecological Reserve
BCEOP	Butte County Emergency Operations Plan
BFE	Base Flood Elevation
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCV Steelhead	California Central Valley Steelhead
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFD	Chico Fire Department
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CH_4	Methane
City	City of Chico
CNEL	Community Noise Equivalent Level
CO_2	Carbon dioxide
CPD	Chico Police Department
CSU	California State University
CSUC	California State University Chico
CVSR Chinook Salmon	Central Valley Spring-Run Chinook Salmon
dB	decibel
dBA	A-weighted decibel
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EO	Executive Order
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act

FEMA	Federal Emergency Management Agency
GHG	Greenhouse gas
GWP	Global warming potential
HCP	Habitat Conservation Plan
IPCC	Intergovernmental Panel on Climate Change
Leq	Level equivalent
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MT CO_2e	metric tons of carbon dioxide equivalent
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service Branch
NO_X	Nitrous oxides
NPDES	National Pollution Discharge Elimination Permit
NSVAB	Northern Sacramento Valley Air Basin
OHWM	Ordinary High-Water Mark
PBF	Physical and Biological Features
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
Project	Big Chico Creek Erosion Repair Project
RCEM	Roadway Construction Emissions Model
ROG	Reactive Organic Gases
SB	Senate Bill
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
Sq ft	Square feet
SR 32	State Route 32
SR 70	State Route 70
SVAB	Sacramento Valley Air Basin
SWMP	Storm Water Management Program
SWPPP	Stormwater Pollution Prevention Plan
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VELB	Valley elderberry longhorn beetle

VMT	Vehicle-miles-traveled
WQC	Water Quality Certification
WPCP	Water Pollution Control Plant

Draft Initial Study / Proposed Mitigated Negative Declaration
City of Chico
Environmental Coordination and Review

I. PROJECT DESCRIPTION

A. Project Title: Big Chico Creek Erosion Repair Project

B. Project Sponsor/Lead Agency:
City of Chico – Public Works Engineering
PO Box 3420
Chico, CA 95927

C. Property Owners:
City of Chico
PO Box 3420
Chico, CA 95927

State of California (California State University Chico)
(Warner Street)

D. City Contact:
Tracy R. Bettencourt – MPA, AICP
Senior Planner
City of Chico – Public Works Engineering
tracy.bettencourt@chicoca.gov
(530) 879-6903

E. Project Location: The Big Chico Creek Erosion Repair Project (Project) will occur at two bridge crossings and an eroded bank site over Big Chico Creek within the City of Chico (City) Butte County, California. The first bridge, Rose Avenue Bridge, is approximately 0.5 miles west of State Route 32, at the intersection of Rose Avenue and Bidwell Avenue. The second bridge, Warner Street Bridge, is on Chico State University's campus, between Legion Avenue and West 1st Street. The third site, the site of an eroded bank site, is located just downstream of the intersection of Manzanita Avenue and Vallombrosa Avenue along the west bank of Big Chico Creek. (Figure 1. Project Vicinity; Figure 2. Project Location).

F. Assessor's Parcel Number (APN): Rose Avenue: The Project will be located within the existing City right-of-way but impact narrow portions of APNs: 043-681-085 and 043-690-032.

Warner Street: The Project will be located within the existing CSU Chico State right-of-way and impact narrow portions of APNs: 003-200-001 and 003-200-002.

Manzanita and Vallombrosa erosion repair site: This erosion site is located just downstream of the intersection of Manzanita Avenue and Vallombrosa Avenue within existing City right-of-way at APN 016-170-001.

G. Parcel Size: The Warner Street Bridge location includes approximately 200 linear feet of Warner Street, with a Project area encompassing approximately 0.77 acres. The Rose Avenue Bridge location includes approximately 165 linear feet of Rose Avenue, with a Project area encompassing approximately 0.35 acres. The Manzanita and Vallombrosa erosion repair site includes

approximately 195 linear feet of the west bank of Big Chico Creek along Vallombrosa Avenue, with a Project area encompassing approximately 0.73 acres.

H. General Plan Designation: Rose Avenue: Very Low Density Residential, Low Density Residential, Primary Open Space

Warner Street: Primary Open Space, and Public Facilities & Service.

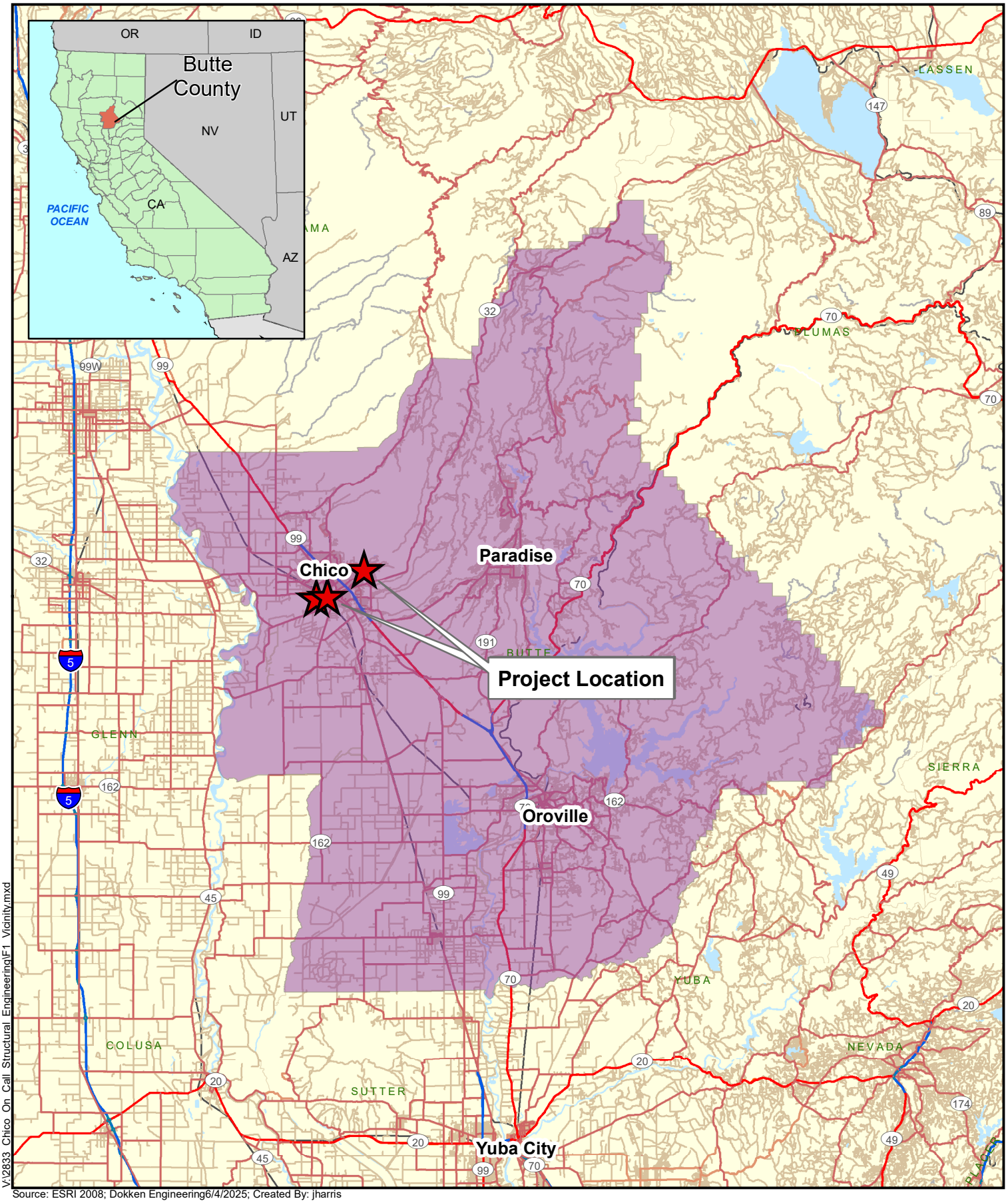
Manzanita and Vallombrosa: Secondary Open Space

I. Zoning: Rose Avenue: Primary Open Space (OS1),

Warner Street: Primary Open Space (OS1) and Public/Quasi Public Facilities (PQ).

Manzanita and Vallombrosa: Secondary Open Space (OS2)

J. Environmental Setting: All three project sites have predominately flat topography throughout, with elevations ranging from approximately 185 to 210 feet above mean sea level at the two bridge locations to the southwest of Chico, and up to 270 feet above mean sea level at Manzanita and Vallombrosa Avenue on the eastern end of Chico. Big Chico Creek runs underneath both the Rose Avenue Bridge and Warner Street Bridge from east to west and along the eroded bank east of Vallombrosa Avenue, which provides stream channel and riparian forest habitat within the Project areas. The Project encompasses sections of Warner Street and Rose Avenue, both paved roadways which are regularly disturbed and devoid of vegetation, and disturbed area on the west bank of Big Chico Creek along Vallombrosa Avenue near the intersection of Manzanita and Vallombrosa Avenue. Within the Project boundaries, Warner Street and Rose Avenue cross over Big Chico Creek, a perennial freshwater stream that flows east to west beneath the bridges. Big Chico Creek is a jurisdictional water of the U.S. and State and contains mature riparian forest habitat. The land uses adjacent to the bridge crossings within the Project vicinity includes a mix of residential, recreational, educational, and public spaces.

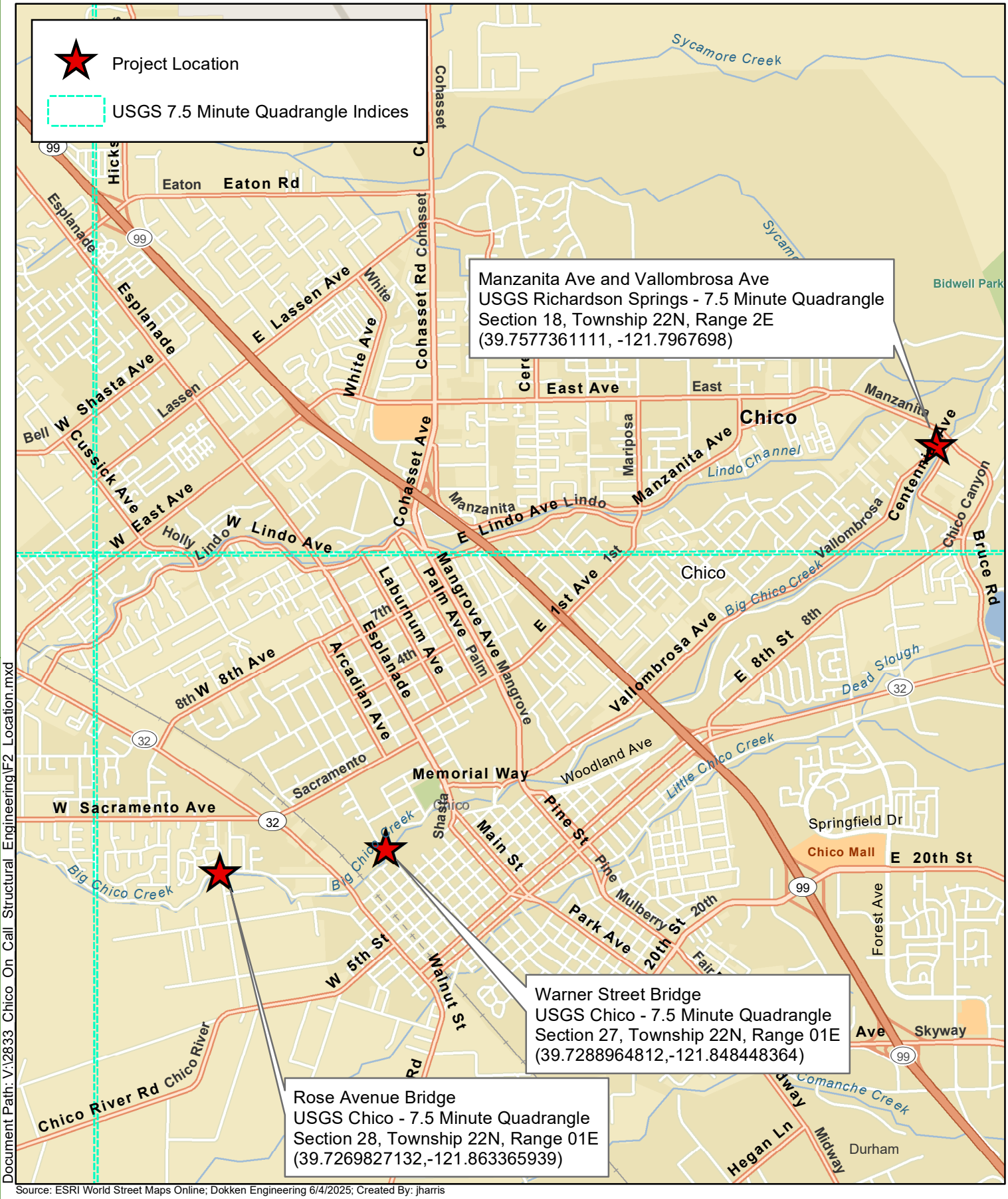


V:\2833_Chico_On_Call_Structural_Engineering\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering6/4/2025; Created By: jharris

0 5 10 15 Miles

FIGURE 1
Project Vicinity
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California



Source: ESRI World Street Maps Online; Dokken Engineering 6/4/2025; Created By: jharris

Document Path: V:\2833 Chico On Call Structural Engineering\F2 Location.mxd

0 0.5 1 1.5 2 Miles

FIGURE 2
Project Location
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

K. Project Description:

Background

The City is the CEQA lead agency. As the repair work needs authorization under the Clean Water Act, the United States Army Corps of Engineers (USACE) will serve as the federal National Environmental Policy Act (NEPA) lead. Additionally, as the project is anticipated to receive grant funding from the United States Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS) will also act as a cooperating agency under NEPA.

Rose Avenue Bridge

The Rose Avenue Bridge experienced damage during two federally declared disasters in January and February 2023. The damage in January (#4683DR) occurred when torrential rainfall in the Big Chico Watershed raised creek levels and washed out the roots of trees on the north and south sides of the creek. The trees fell into the creek on the upstream (or east) side of the Bridge, directing the high, fast-moving water towards both banks scouring the banks from the bridge abutments to 35 feet upstream. The scouring caused the loss of approximately 466 cubic yards of soil from both banks. The dimensions of the areas affected by the January 2024 event are 35 feet long, 20 feet wide, and 18 feet deep. Then, storms from January 21 to February 9, 2024, in the watershed caused additional damage and resulted in a second federal disaster declaration (#4769DR). Heavy rainfall and stormwater overtopped the road and swelled the waterway under the bridge. As a result, the embankment at the northeast bridge abutment was scoured and slope armoring failed.

The bridge was constructed in 1925. It is a three-span reinforced concrete T-girder bridge on reinforced concrete pier walls. The open reinforced concrete diaphragm/wall abutments are all founded on spread foundations. Approximate 10-feet upstream of the bridge, there is a 21-inch gravity sewer pipe in the bed of the creek. The pipe, constructed in 1929, is encased in concrete. The pipe functions as a check dam or weir where, upstream, creek bed is full of cobble to the height of the concrete encasement.

The Caltrans Bridge Inspection Report from October 2022 notes that there "is a rock pocket on the upstream nose of Pier 3. The pocket is approximately 4-feet long by 6-inches tall by 2-inches deep… Approximately 6-feet of the Pier 2 footing is exposed up to 4-inches vertically on the Span 2 side of Pier 2." The concrete encased sewer line "is undermined up to 12 inches vertically along a 10-foot section adjacent to Span 2 but appears to be functioning as intended."

Caltrans inspects the bridge every other year, typically in October. A review of eleven inspection reports covering a two-decade period revealed that the creek was dry during four of the inspections. Water was observed flowing under Span 2, the middle span between Piers 2 and 3 during seven of the inspections although water was not present under Span 3 (the north side of the creek) during four of the seven inspections.

Warner Street Bridge

The Warner Street Bridge experienced damage during federally declared disasters in winter of 2023. The damage occurred when torrential rainfall in the Big Chico Watershed raised creek levels and exacerbated existing erosion problems on the north bank of the creek. The bridge was constructed in 1938 and modified in 1995. It is a two-span reinforced concrete T-girder bridge on reinforced concrete pier walls and open reinforced concrete diaphragm abutments with monolithic wingwalls that are all founded on spread foundations.

The Caltrans Bridge Inspection Report from October 2022 notes that "The stepped wingwall foundations on the right wingwall at Abutment 3 are exposed and undermined… There is an existing work recommendation to mitigate the scour at the right wingwall of Abutment 3 in accordance with HEC-23 procedures."

The Report details the changes to the north abutment: “The right side of the Abutment 3 footing is exposed up to 1 foot vertically for approximately 5 feet in length. No undermining was noted when probed with an extension pole. This exposure was not noted in the 2018 and 2020 routine inspection reports, however the 9/14/2017 Hydraulic inspection noted that the footing had historically been exposed "on occasion". A work request to re-evaluate the scour vulnerability of the spread footing at Abutment 3 was submitted to SM&I's Local Hydraulic branch…”

Caltrans inspects the bridge every other year, typically in October. A review of eleven inspection reports covering a two-decade period revealed that water was present in creek during each of the inspections. The depth of water in the scour hole at Abutment 3 ranged from four to eight feet.

Manzanita and Vallombrosa Avenue

This erosion site is located just downstream of the intersection of Manzanita Avenue and Vallombrosa Avenue. The west bank of the creek has significant erosion at the base. This location is a common recreation area during summertime where the public jumps off the top of bank into the creek. The scour has undercut the west bank, creating a “cave” that is exposed during normal flows. The recreation activity at this location could also be a contributing factor to the erosion at that site. The erosion damage is approximately 80 feet in length, 8 feet in width, and 15 feet high.

Project Need

The purpose of the Project is to address erosion and scour issues at three critical locations along Big Chico Creek within the City. These repairs are needed to maintain the structural integrity of the Rose Avenue and Warner Street bridges, which play a vital role in the City’s transportation network. The repair at the Manzanita and Vallombrosa erosion repair site would maintain public safety by removing a hazardous feature accessible to the public. Over time, heavy storms have caused significant erosion and scour near the bridge foundations and banks of Big Chico Creek, threatening their stability and long-term functionality. By undertaking these repairs, the project aims to extend the service life of the bridges and recreational areas, ensuring they remain safe and reliable for vehicular and pedestrian use. Additionally, these improvements will enhance overall safety, accessibility and connectivity for residents, commuters, and emergency responders who rely on these routes daily. Investing in the long-term resilience of the Rose Avenue and Warner Street bridges emphasizes the City’s commitment to maintaining safe, functional, and sustainable infrastructure for its citizens.

The Project is needed to meet the policies and goals described in the Chico 2030 General Plan.

- Policy OS-2.5 (Creeks and Riparian Corridors) – Preserve and enhance Chico’s creeks and riparian corridors as open space for their aesthetic, drainage, habitat, flood control, and water quality values.
- Goal S-2: Minimize the threat to life and property from flooding and inundation.

Project Location

The Big Chico Creek Erosion Repair Project (Project) will occur at two bridge crossings and an eroded bank site over Big Chico Creek within the City of Chico (City) Butte County, California. The first bridge, Rose Avenue Bridge, is approximately 0.5 miles west of State Route 32, at the intersection of Rose Avenue and Bidwell Avenue. The second bridge, Warner Street Bridge, is on Chico State University's campus, between Legion Avenue and West 1st Street. The third site, the site of the proposed erosion repair, is located just downstream of the intersection of Manzanita Avenue and Vallombrosa Avenue along the west bank of Big Chico Creek. (Figure 1. Project Vicinity; Figure 2. Project Location).

Project Features

At the Rose Avenue Bridge, heavy flows from 2023 winter storms have caused scouring along both banks from the bridge abutments to 35 feet upstream. At the Warner Street Bridge, increased erosion resulting from 2023 atmospheric river events has caused scouring along the northern wingwall, northern abutment footing and northern creek banks. Rock slope protection (RSP) will be placed along the areas of scour at all three locations to prevent further damage and reinforce the banks and structures to better withstand future storm events. The existing conditions and the proposed permanent repair design for each location are discussed below.

Rose Avenue Bridge: Permanent Repair

The City proposes to repair the erosion on both banks and the scour around the piers, north abutment footing, and the sewer pipe using RSP. RSP will reinforce the existing creek banks and a concrete-encased sewer pipe, as well as strengthen the northeast abutment footing and wingwall of the bridge. The RSP on the creek banks will be based on the Caltrans' Mounded Toe RSP design as shown in Highway Design Manual Figure 873.3D with a 1.5:1 slope. The RSP will be underlain with a gravel filter.

A total of 46 linear feet of RSP will be installed along the north creek bank upstream of the bridge, 20 linear feet of RSP along the base of the north bridge abutment, and 50 linear feet of RSP will be placed along the south creek bank upstream of the bridge. The RSP will extend upstream to protect an existing stream gage. RSP will be placed on the downstream side of the concrete encased sewer pipe to prevent additional scouring (Figure 3. Project Features).

Warner Street Bridge: Permanent Repair

The City proposes to repair the erosion and address the scour issue on north bank of the creek using RSP. RSP will reinforce the existing creek bank and protect the northern abutment from undermining and failure. The RSP on the creek banks will be based on the Caltrans' Mounded Toe RSP design as shown in Highway Design Manual Figure 873.3D with a 1.5:1 slope. The RSP will be underlain with a gravel filter.

A total of 90 linear feet of RSP will be installed along the north bank upstream of the bridge, 40 linear feet of RSP along the north bridge abutment, and 50 linear feet of RSP will be placed along the north bank downstream of the bridge (Figure 3. Project Features).

All ground disturbing activities will take place within the proposed temporary construction areas depicted in the plans. Right-of-way acquisitions, temporary construction easements, and encroachment permits will be needed to accommodate for construction. Construction will be staged so that two traffic lanes on the existing bridge will remain open. During certain stages of construction, lane closures, road closures, and detour routes will be necessary but will be short in duration. Utility relocations are not anticipated.

Bank Erosion Repair at Manzanita and Vallombrosa

The City proposes to repair the erosion and fill in the cave on the west bank of the creek using RSP. The undercut cave will be collapsed and regraded to remove any safety risks to the public. A total of 187 linear feet of RSP will then be installed along the west bank to reinforce the reconstructed creek banks and prevent further erosion. All ground disturbing activities will take place within existing City right-of-way.

Project Area

Source: ESRI Maps Online; Dokken Engineering 7/10/2025; Created By: kchen

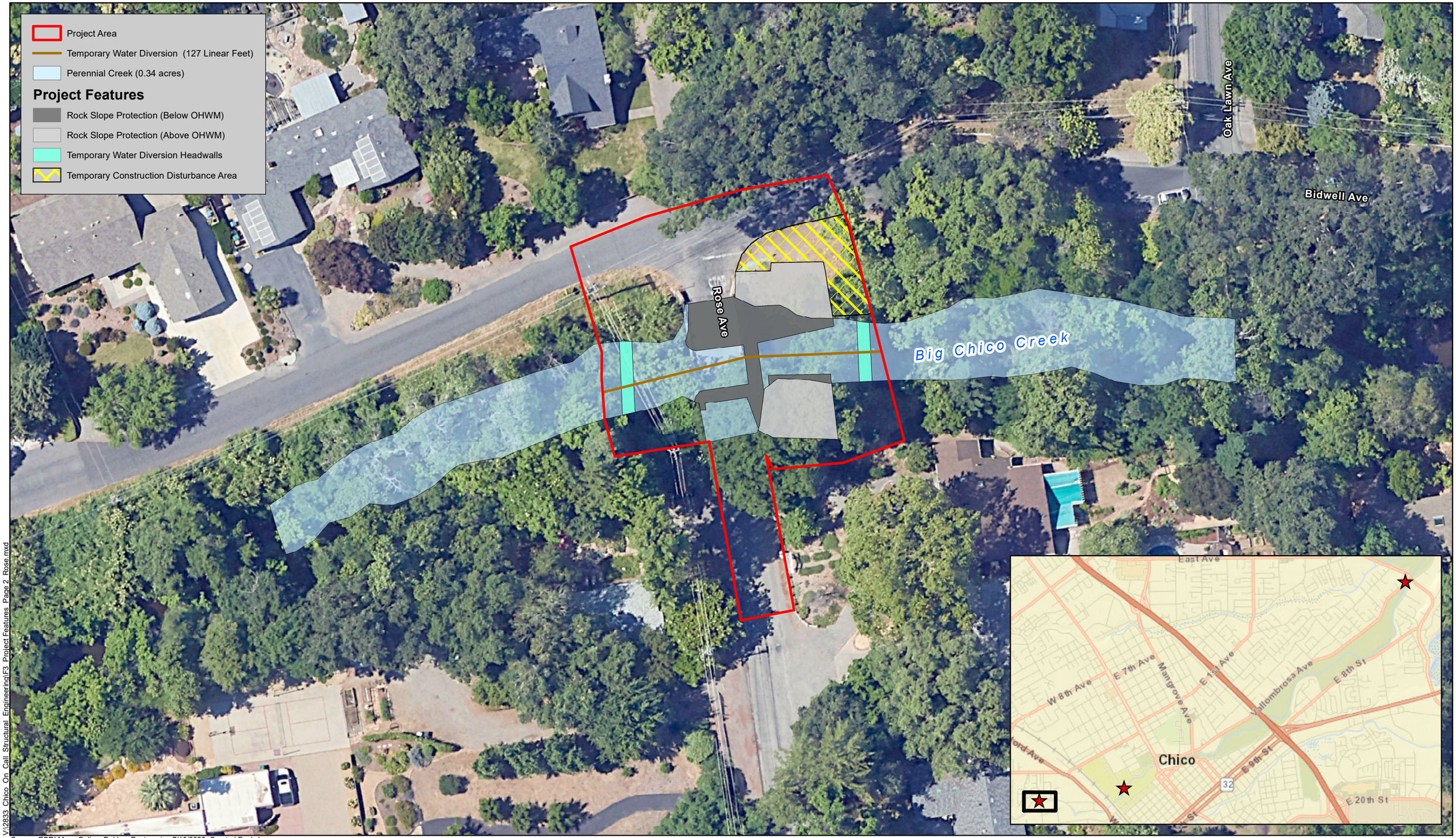
1 inch = 2,000 feet

0 1,000 2,000 3,000 4,000 5,000 Feet

V:\2833 Chico On Call Structural Engineering\F3 Project Features Page 1.mxd

Figure 3
Project Features
Page 1 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California



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Source: ESRI Maps Online; Dokken Engineering 7/10/2025; Created By: kchen

1 inch = 40 feet

0 50 100 150 200 250 Feet

Figure 3
Project Features
Page 2 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Project Area

Temporary Water Diversion (259 Linear Feet)

Perennial Creek (0.40 acres)

Project Features

Rock Slope Protection (Below OHWM)

Rock Slope Protection (Above OHWM)

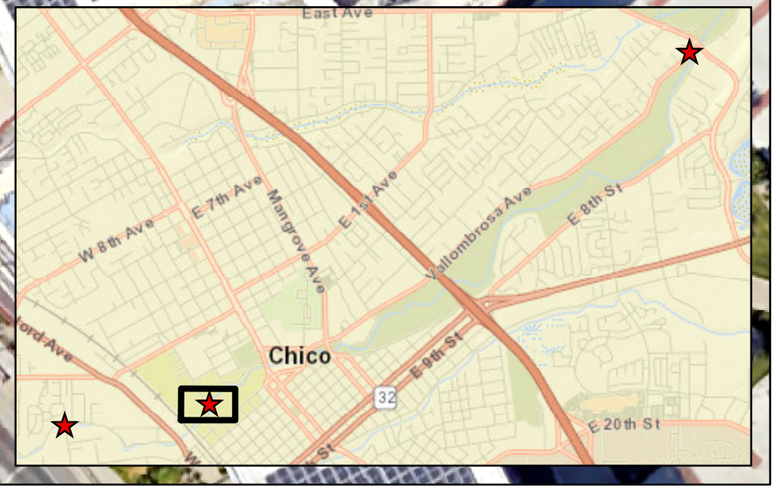
Temporary Water Diversion Headwalls

Temporary Construction Disturbance Area

Big Chico Creek

Warner St

Ivy St



V:\2833 Chico On Call Structural Engineering\GIS\F3 Project Features Page 3 Warner.mxd

Source: ESRI Maps Online; Dokken Engineering 7/10/2025; Created By: kchen

1 inch = 50 feet

0 50 100 150 200 250 Feet

Figure 3
Project Features
Page 3 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Project Area
Temporary Water Diversion (205 Linear Feet)
Perennial Creek (0.68 acres)

Project Features

Rock Slope Protection (Below OHWM)
Rock Slope Protection (Above OHWM)
Temporary Water Diversion Headwalls
Temporary Construction Disturbance Area

Covell Park Ave
Centennial Ave
Big Chico Creek
Oak Manor Ct
Vallombrosa Ave
Manzanita Ave
Salishan Ct
Centennial Ave

East Ave
W 8th Ave
E 7th Ave
Mangrove Ave
E 1st Ave
Vallombrosa Ave
E 8th St
Chico
E 9th St
32
E 20th St

V:\2833 Chico On Call Structural Engineering\F3 Project Features Page 4 Manzanita and Vallombrosa.mxd

Source: ESRI Maps Online; Dokken Engineering 7/10/2025; Created By: kchen

1 inch = 75 feet

0 50 100 150 200 250 Feet

Figure 3
Project Features
Page 4 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Construction

The following sections break down construction into chronological steps including site preparation, installation of temporary water diversion and/or dewatering system, grading and excavation, installation of RSP, removal of temporary water diversion and/or dewatering system, demobilization and site cleanup, and post-construction revegetation.

Site Preparation

Rose Avenue, Warner Street, Manzanita Avenue and Vallombrosa Avenue will remain open during construction; however, brief road closures may be necessary during certain stages of construction.

Prior to the initiation of construction, site boundaries will be marked off with a combination of lath & flagging and temporary high visibility fencing. After the site boundaries are marked off, the contractor will mobilize tools, equipment, and materials to staging areas adjacent to the existing Rose Avenue and Warner Street bridges, as well as the Manzanita and Vallombrosa erosion repair site.

Vegetation will be cleared and grubbed from the top of bank down to the water line in areas where the RSP will be placed. At Warner Street, rough grading is needed to facilitate access down to the creek.

Installation of Temporary Water Diversion and/or Dewatering System

Before erosion repair work can begin, a temporary pipe diversion or open channel water diversion will be installed to divert flows through the work area and maintain a continuous flowing stream. The water diversion will ultimately be designed by the contractor consistent with the Caltrans' Construction Site BMP Manual (2017) "NS-5 Clear Water Diversion." The diversion is likely to consist of either a:

- Pipe Diversion:

Flow will be diverted to a temporary conveyance structure using a temporary dam (consisting of concrete blocks and/or sandbags) and gravity fed or pumped via an intake hose to downstream of the Project area, away from construction. The dam and water diversion will be removed upon completion of the erosion repair work.

or an

- Open channel diversion:

Flow will be diverted to a temporary channel using barriers made of sandbags or other materials, creating a bypass around the construction area. Water will be redirected through this channel to ensure it flows downstream of the Project areas, away from ongoing work. Once the construction is completed, the barriers and temporary channel will be removed, restoring the creek to its original flow path.

After the creek is diverted from the work area, subsurface seepage may enter the work area. The seepage would be removed using sump pumps or other methods to remove the water from the work area. Any dewatering operations necessary will be performed in accordance with the Construction Site BMP Manual "NS-2 Dewatering Operations" which directs compliance with the Caltrans Field Guide to Construction Site Dewatering Manual (2014). In addition, the water

diversion and any dewatering activity will be subject to requirements from the Central Valley Regional Water Quality Control Board (CVRWQCB) and California Department of Fish and Wildlife(CDFW).

Grading/Excavation

Grading and excavation will occur primarily in the bank and not the creek bed. The mounded toe RSP does not need keyed into the creek bed. After grading, soil backfill will be placed and compacted as needed to establish a maximum steepness of a 1.5:1 slope. A 2:1 slope is not proposed as it would increase the extent of RSP into the creek bed by approximately one-third. A six-inch-thick gravel filter will be placed on areas to receive the RSP.

Concrete spall patch and sewer encasement extension (Rose Avenue only)

Unsound concrete spalls on the bridge will be removed. Rust from exposed reinforcement will be removed. The rock pocket on the upstream nose of Pier 3 is approximately 4 feet long by 6 inches tall by 2 inches deep. The unsound concrete will be removed and patched. It is unknown how far into the creek bank the concrete encasement of the sewer pipe extends.

Rock Slope Protection

At Rose Avenue, the failed hard armoring at the northeast abutment will be removed. Existing RSP at the north abutment, will be reconfigured. At the two Piers and along the concrete encased sewer line, the excavation will be to scour depth with RSP backfilled.

At the Warner Street bridge, the project will install RSP along the Big Chico Creek north side slope, headwall, and abutment.

At the Manzanita and Vallombrosa erosion repair site, the project will install RSP along the Big Chico Creek west bank after regrading the slope.

Creek bed restoration (as necessary)

Prior to restoring the flows in the creek, the creek bed will be inspected for vehicle rutting, excavated materials, loose vegetation, or construction debris. All non-native materials will be removed, and the surface will be restored to its preconstruction condition.

Removal of Temporary Water Diversion and/or Dewatering System

After the erosion repair is complete, the temporary water diversion can be removed. The downstream barrier/berms will be removed, then the upstream barrier/berms along with the temporary culverts, if implemented.

On-Site Revegetation

Following construction, all temporarily disturbed areas that do not receive RSP treatment will be regraded to pre-construction contours. If necessary, disturbed soils will be stabilized with hydroseed or temporary bonded fiber matrix to protect the area from surface erosion. Disturbed areas will be revegetated with a native seed mix.

Roadway/Bike path restoration (as necessary)

If construction equipment damages the existing pavement (asphalt or concrete), it will be repaired.

Demobilization & Site Cleanup: The contractor will recontour any temporarily disturbed areas to pre-construction contours. The contractor will then remove all perimeter fencing, equipment, tools, trash, and excess materials from the job site.

Staging: Project construction would also require temporary staging areas for construction-related items such as vehicles, equipment, portable toilets, pipe, manholes, and other construction materials; the stockpiling of fill and backfill; and for construction vehicle refueling and maintenance. At the Warner Street location, the staging area will be located east of the eastern pedestrian bridge, along the existing bike trail on the CSUC campus. At the Rose Avenue location, the staging area will be located adjacent to the northeastern corner of the bridge in a barren area along the shoulder of Bidwell Avenue. The use of these areas would be temporary, and the timeframe would not exceed the duration of Project construction. All staging areas would be restored to pre-Project conditions at the completion of the Project.

Timing: The Project is anticipated to take approximately 30 working days at each of the three sites, likely with the work partially overlapping for a total of 6 to 8 weeks. Project construction would begin as early as spring of 2027. In-water work in Big Chico Creek will be limited to the period of July 15th to September 30th to minimize potential for direct take of state and federally listed fish species.

Lane Closure Management: Access along the Warner Street Bridge as well as the pedestrian bridge located west of the bridge will remain open throughout construction. However, the pedestrian bridge and the bike trail located east of the Warner Street Bridge will temporarily close during Project implementation. The Rose Avenue Bridge is anticipated to be closed intermittently during construction. Access for residents living adjacent to the Rose Avenue Bridge will be maintained through Oak Park Avenue, south of the proposed repairs. Apart from these minor delays, access to properties would be ensured at all times. Access at Manzanita Avenue and Vallombrosa Avenue will be maintained during construction.

Construction Equipment: Typical construction equipment would include excavators, skidsteer loaders, generators, temporary water diversion equipment (pumps, sandbags, coffer dams, pipes), chainsaw and chipper.

Compliance Features: All construction noise would be temporary and subject to the noise limits in the Chico Municipal Code, Chapter 9.38 Noise Ordinance, which regulates noise generation within the City of Chico. Construction activity noise is restricted to the hours of 7:00 a.m. to 9:00 p.m. on weekdays (10:00 a.m. to 6:00 p.m. on weekends and holidays), unless otherwise approved by the City Engineer. No night or weekend work is anticipated for the proposed Project.

Public Agency Approvals and Permits Required:

Agency	Type of Permit or Approval	Regulated Activity
U.S. Army Corps of Engineers Sacramento District (USACE), Regulatory Division	Department of the Army permit (Clean Water Act Section 404)	Discharge of dredged or fill material into waters of the United States (including wetlands)
U.S. Fish and Wildlife Service (USFWS); National Marine Fisheries Service (NOAA Fisheries)	Section 7 of the Endangered Species Act Determination: Biological Opinion	United States Army Corps of Engineers (USACE) and as part of consideration of a Section 404 permit

Agency	Type of Permit or Approval	Regulated Activity
Central Valley Flood Protection Board	Minor Alteration Agreement	Encroachment onto/through regulated streams
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification	Any applicant for a federal license or permit which may result in a discharge into waters of the United States
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement	Any substantial diversion or obstruction of the natural flow of, or substantial change or use of any material from the bed, channel, or bank of, any river stream or lake. Crossing of streams, rivers, or lakes (also for reservoirs, which interrupt streams)
State Water Resources Control Board and Regional Water Quality Control Boards	National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities	All construction and land disturbance discharges when clearing, grading, and excavation result in a land disturbance of 1 or more acres
State Water Resources Control Board and Regional Water Quality Control Boards*	Waste Discharge Requirements	Discharge of reclaimed water on land and to groundwater

Native American Tribal Consultation: Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

☐ Yes ☒ No

Pursuant to a 2008 Memorandum of Understanding between the Mechoopda Indian Tribe of the Chico Rancheria and City of Chico, a Project notification outreach effort was conducted in July 2025 and no comments from the Tribe have been received to date.

L. Prepared By:

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II. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below could be potentially affected by this Project, but, due to the inclusion of specific mitigation measures, will result in impacts that are a "Less Than Significant with Mitigation Incorporated," as indicated by the environmental checklist on the following pages.

☒ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forestry Resources	☐ Hazards/Hazardous Materials	☐ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☒ Biological Resources	☐ Land Use and Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☐ Energy	☒ Noise	☐ Wildfire
☒ Geology/Soils	☐ Population/Housing	☒ Mandatory Findings of Significance

III. COMMUNITY DEVELOPMENT DIRECTOR DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a potentially significant impact or have a potentially significant impact unless mitigated, but at least one effect has been adequately analyzed in an earlier document pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT (EIR) is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION including revisions or mitigation measures that are imposed upon the proposed Project. No further study is required.

Signature Date

Tracy R. Bettencourt – MPA, AICP, Senior Planner

(for Brendan Vieg, Community Development Director)

IV. EVALUATION OF ENVIRONMENTAL IMPACTS

- Responses to the following questions and related discussion indicate if the proposed project will have or potentially have a significant adverse impact on the environment.
- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by referenced information sources. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors or general standards.
- All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- Once it has been determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there is at least one "Potentially Significant Impact" entry when the determination is made an EIR is required.
- Negative Declaration: "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).
- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)].
- Initial studies may incorporate references to information sources for potential impacts (e.g., the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list attached, and other sources used or individuals contacted are cited in the discussion.
- The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

A. Aesthetics

Except as provide in Public Resources Code Section 21099, would the project or its related activities:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect on a scenic vista?		X		
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

AFFECTED ENVIRONMENT: All three project sites have predominately flat topography throughout, with elevation ranging from approximately 185 to 210 feet above mean sea level at the two bridge locations to the southwest of Chico, and up to 270 feet above mean sea level at Manzanita and Vallombrosa Avenue on the eastern end of Chico. Big Chico Creek flows underneath both the Rose Avenue Bridge and Warner Street Bridge from east to west and along the eroded bank east of Vallombrosa Avenue, which provides stream channel and riparian forest habitat within the Project areas. The land uses adjacent to project sites within the Project vicinity includes a mix of residential, recreational, educational, and public spaces. In addition, the Warner Street Bridge site lies within the CSUC campus (within City right-of-way).

DISCUSSION: A.1. Less Than Significant. The City of Chico is characterized by scenic views including flat topography with agricultural areas, foothills, bluffs, ravines, and creeks (City of Chico 2010). Big Chico Creek, which flows underneath both the Rose Avenue and Warner Street Bridges and adjacent to the Manzanita and Vallombrosa erosion repair site, contains a mature riparian forest canopy. Riparian habitats, which are ecosystems located along the banks of rivers, streams, or other watercourses, are often recognized as contributing to scenic vistas. These areas are valued not only for their ecological importance, but also for their visual appeal, characterized by lush vegetation, flowing water, and wildlife. At the Rose Avenue Bridge, two non-native trees will be removed from the riparian zone of Big Chico Creek, including one glossy privet, and one nettle tree as well as six elderberry shrubs. At the Warner Street Bridge, five box elder trees will be removed from the riparian zone. At Manzanita and Vallombrosa Avenue, eight native-trees will be removed from the riparian zone due to regrading of the slope. In order to avoid and minimize potential impacts to Big Chico Creek's riparian corridor during Project construction, tree removal and vegetation grubbing within the riparian zone would be conducted following local tree preservation regulations and guidelines as well as implementing Mitigation Measures **BIO-1**, **BIO-2** and **BIO-24** (City of Chico 2024a). Although there will be minor temporary and permanent impacts to scenic resources, such as the removal of some riparian trees and

shrubs, a majority of the riparian corridor will remain intact. Therefore, impacts will be **Less than Significant with Mitigation Incorporated**.

A.2. No Impact. The only highway near the Project areas is State Route (SR) 32 which is not a designated scenic highway, nor eligible for that distinction (Caltrans 2024). The nearest eligible state scenic highway is SR 70 which is located approximately 15.8 miles southeast of the Project areas. Therefore, implementation of the Project would result in **no impact** on scenic resources along a state scenic highway.

A.3. Less Than Significant. All three project sites are within urbanized areas within the City of Chico limits. The proposed Project would not conflict with applicable zoning and other regulations governing scenic quality, including the standards outlined in Chapter 4.13 of the *Visual Resources and Aesthetics* section of the 2010 General Plan Draft EIR. The riparian zone of Big Chico Creek within the Project areas is zoned as Primary Open Space, which is defined as areas appropriate for permanent protection as open space because of environmental resources or potential hazards (City of Chico 2024b). The proposed Project does not conflict with this zoning designation, as a majority of the riparian and stream channel habitat within the Project areas will be protected. Although there will be minor temporary and permanent impacts to riparian habitat, such as the removal of some riparian trees and shrubs, a majority of the riparian corridor will remain intact. Because implementation of the Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings, these impacts would be **less than significant**.

A.4. No Impact. Because implementation of the Project would not create a new source of light or glare adversely impacting day or nighttime views, nor would the Project involve nighttime or weekend construction requiring the use of lighting within the Project areas, there would be **no impact**.

MITIGATION: Mitigation measures BIO-1, BIO-2 and BIO-24 will be incorporated into the Project to minimize and avoid Project related impacts on the riparian habitat within the Project areas. This will ensure that impacts to riparian habitat will remain less than significant.

BIO-1: All construction personnel will be required to attend an environmental awareness training prior to working on the Project. The training will include an overview of sensitive habitats and special-status species, including but not limited to Big Chico Creek, riparian vegetation, valley elderberry longhorn beetle, CCV steelhead, and CVSR Chinook salmon. The training will include the protective measures that must be complied with.

BIO-2: Prior to the start of construction activities, the Project limits in proximity to the sensitive habitats (Big Chico Creek and riparian corridor) and elderberry shrubs will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into sensitive resources.

BIO-24: To offset the loss of riparian trees and aquatic resources, the City will either purchase mitigation credits from a mitigation bank (if available) or fund an offsite riparian restoration project. The mitigation ratios will be consistent with the requirements of the applicable regulatory permitting agencies.

REFERENCES CITED:

California Department of Transportation (Caltrans). 2024. Scenic Highways. Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed: November 22, 2024.

City of Chico. 2010. General Plan: Section 4.13 Visual Resources and Aesthetics. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.13visualresourcesandaesthetics.pdf. Accessed: November 26, 2024.

City of Chico. 2024a. Municipal Code Chapter 16.66 Tree Preservation Regulations. Available: https://codelibrary.amlegal.com/codes/chico/latest/chico_ca/0-0-0-12939. Accessed: November 26, 2024.

City of Chico. 2024b. Municipal Code Chapter 19.50 Special Purpose Zones. Available: https://codelibrary.amlegal.com/codes/chico/latest/chico_ca/0-0-0-16117. Accessed: November 26, 2024.

B. Agriculture and Forest Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code Section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
4. Result in the loss of forest land or conversion of forest land to non-forest use?				X
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

AFFECTED ENVIRONMENT: The proposed Project is in Chico, a City in Butte County known for its flat agricultural landscape and agricultural economy. Butte County participates in the Williamson Act

Program, in addition to land designated by the California Department of Conservation Farmland Mapping and Monitoring Program as agricultural land (City of Chico 2010). The Project areas are bound to several different types of development and land uses and run through lands identified as "Urban and Built-Up" (California Department of Conservation 2024). The Project area at Warner Street is surrounded by a school (CSUC), and the Project areas at Rose Avenue and Manzanita and Vallombrosa are bordered by private residential properties.

DISCUSSION: B.1. No Impact. The Project would not convert Prime or Unique Farmland or Farmland of Statewide Importance to a non-agricultural use. The California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program's *Butte County Important Farmland 2016* map identifies the Project areas as "Urban and Built-up Land" (California Department of Conservation 2024). Urban and built-up land along the Project alignment is land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Since there is no agricultural land within the Project vicinity, there would be **no impact** on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

B.2. No Impact. The Project areas are not located on land under a Williamson Act Contract or designated as agricultural zoning. Therefore, it would have **no impact** on Williamson Act lands or agricultural lands (Butte County, 2016).

B.3–B.5. No Impact. As there are no designated forest lands (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned for Timberland Production (as defined by Government Code Section 51104(g)) within or adjacent to the Project areas, the Project would not conflict with existing zoning or land uses related to forest lands or timberland. Additionally, there are no agricultural lands in the Project vicinity, and the Project is not expected to conflict with agricultural zoning or land uses. The Project would not result in the loss of agricultural land, the conversion of farmland, or any other environmental changes that could lead to the conversion of agricultural or forest land to non-agricultural uses or non-forest use. Therefore, the Project would have **no impact** on agricultural land, timberland, or forest land.

MITIGATION: None required.

REFERENCES CITED:

California Department of Conservation. 2024. California Important Farmland Finder. Available: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed: November 26, 2024.

City of Chico. 2010. General Plan: Section 4.2 Agricultural Resources. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.2agriculturalresources.pdf. Accessed: November 26, 2024.

Butte County. 2016. The Land Conservation (Williamson) Act. Available: https://www.buttecounty.net/DocumentCenter/View/2890/View-Map-of-All-Williamson-Act-Parcels-in-the-County-PDF?bidId=. Accessed: November 26, 2024.

C. Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Conflict with or obstruct implementation of the applicable air quality plans (e.g., Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Attainment Plan, Chico Urban Area CO Attainment Plan, and Butte County AQMD Indirect Source Review Guidelines)?			X	
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
3. Expose sensitive receptors to substantial pollutant concentrations?			X	
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

AFFECTED ENVIRONMENT: The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The City is located in the Sacramento Valley Air Basin (SVAB) which includes all of Sacramento, Yolo, Yuba, Sutter, Colusa, Glenn, Butte, Tehama, and Shasta counties and parts of Solano and Placer counties (City of Chico 2010). Climate in the SVAB is characterized by a Mediterranean Climate featuring hot, dry summer and cool, wet winters. The annual high temperature within the City is 75°F, while the annual low temperature is 47°F. In addition, the City receives approximately 26.67 inches of rainfall annually (U.S. Climate Data 2025).

The SVAB is further split into the Northern Sacramento Valley Air Basin (NSVAB) which includes Butte, Colusa, Glenn, Shasta, Sutter, Tehama and Yuba Counties. These counties make up the northern region of the Sacramento Valley, bordered to the north and west by the Coastal Mountain Range, to the east by the southern Cascade Mountain Range, and to the south by the northern Sierra Nevada Mountains. These mountain ranges reach heights greater than 6,000 feet above sea level, which act as a natural barrier to the movement of air pollution by containing locally created pollution, as well as blocking transported pollution from the south. In addition, the northern portion of the SVAB, which includes the Project areas, is shaped like an elongated bowl, leading to air being trapped in the valley, thereby limiting its ability to disperse naturally. Temperature inversions in this region can also exacerbate air quality issues by trapping pollutants such as particulate matter and ground-level ozone near the surface. As a result, pollution can accumulate to unhealthy levels, especially during stagnant weather (SVBAPCC 2021).

Both the U.S. EPA and CARB establish ambient air quality standards (AAQS) to regulate common air pollutants. These are known as the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS), respectively. These standards are designed to protect the health of sensitive groups within communities by defining the maximum allowable concentration of a pollutant in outdoor air, averaged over a specified period, without causing harm to people or the environment (CARB 2025). The Butte County Air Quality Management District (BCAQMD is responsible

for attainment of the NAAQS and CAAQS in Butte County through implementation of policies and measures to reduce pollutants and improve air quality within their respective air basins. Table C-1 provides a summary of the federal and state AAQS for various pollutants.

Table C-1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone (O_3)	1-Hour 8-Hour	- 0.070 ppm	0.09 ppm 0.07 ppm
Coarse Particulate Matter (PM_{10})	24-Hour Annual Average	150 µg/m^3 –	50 µg/m^3 20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour Annual Average	35 µg/m^3 9.0 µg/m^3	– 12 µg/m^3
Carbon Monoxide (CO)	1-Hour 8-Hour	35 ppm 9.0 ppm	20 ppm 9.0 ppm
Nitrogen Dioxide (NO_2)	1-Hour Annual Average	100ppb 53 ppb	0.18 ppm 0.03 ppm
Sulfur Dioxide (SO_2)	1-Hour 24-Hour Annual Average	75ppb - 10 ppb	0.25 ppm 0.04 ppm --

ppm = parts per million; ppb = parts per billion; micrograms per cubic meter of air (µg/m^3);
Source: CARB 2025.

Areas with air quality that exceed adopted air quality standards are designated as "nonattainment" areas for the relevant air pollutants, while areas that comply with air quality standards are designated as "attainment" areas for the relevant air pollutants. "Unclassified" areas are those with insufficient air quality monitoring data to support a designation of attainment or nonattainment but are generally presumed to comply with the ambient air quality standard. State Implementation Plans must be prepared by States for areas designated as federal nonattainment areas to demonstrate how the area will come into attainment of the exceeded federal ambient air quality standard (City of Chico 2010).

The SVAB is subject to federal, state, and local regulations. The BCAQMD is responsible for attainment of the NAAQS and CAAQS in Butte County. The BCAQMD released the *CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review* (CEQA Handbook), which was approved March 28, 2024 (BCAQMD 2024). BCAQMD's CEQA Handbook provides the County's current attainment status, air quality trends, and rules and regulations that may be applicable to projects under consideration by lead agencies. Table C-2 summarizes the attainment status for Butte County with regard to NAAQS and CAAQS.

Table C-2. Butte County Ambient Air Quality Attainment Status

Pollutant	State	Federal
Ozone (1-hour)	*Nonattainment-Transitional*	--
Ozone (8-hour)	*Nonattainment-Transitional*	*Nonattainment*
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM_{10}[a] (24-hour)	*Nonattainment*	Attainment
$PM_{2.5}$[b] (24-hour)	No Standard	*Attainment/Maintenance*

PM_{10}[a] (Annual)	Attainment	No Standard
$PM_{2.5}$[b] (Annual)	Attainment	Attainment

Source: BCAQMD 2024; CARB 2020; USEPA 2023a-e.
[a] PM_{10} = Respirable particulate matter less than 10 microns in size
[b] $PM_{2.5}$ = Fine particulate matter less than 2.5 microns in size
[c] Chico Urbanized Area only.

Table C-3 provides BCAQMD's criteria pollutant emissions thresholds, which were adopted to support regional attainment of the NAAQS and CAAQS.

Table C-3. Butte County Air Quality Management District Criteria Pollutant Thresholds

Source	ROG	NO_X	PM_{10}
Construction (pounds per day)	137	137	80
Construction (tons per year)	4.5	4.5	--
Operation (pounds per day)	25	25	80

Source: BCAQMD 2024.
-- = No threshold

According to the City of Chico General Plan EIR, the most problematic pollutants in the Chico area include ozone and particulate matter (2010).

- Ozone (O_3), also referred to as smog, is a highly reactive and unstable gas capable of damaging living cells. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, factories and other industrial plants, fossil fuels, combustion, consumer products, evaporation of paints, and many other sources. Hydrocarbons and nitrogen oxide gases react in the presence of sunlight to form ozone, and hot, sunny and calm weather promotes ozone formation. Ozone is a respiratory irritant which can cause inflammation and irritation of the tissues lining human airways, increase susceptibility to respiratory infections and disease. Exposure to ozone also reduces the overall productivity of plants, damaging cells and reducing their ability to photosynthesize (CARB 2025).

- Airborne particulate matter (PM) is not a single pollutant, but a mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and solid cores with liquid coatings. Emissions from combustion of gasoline, oil, diesel fuel or wood produce much of the $PM_{2.5}$ pollution found in outdoor air, as well as a significant proportion of PM_{10}. PM_{10} also includes dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, wind-blown dust from open lands, pollen and fragments of bacteria. Particles are defined by their diameter for air quality regulatory purposes. Coarse particulate matter is defined as particles with a diameter of 10 microns or less (PM_{10}). Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Both $PM_{2.5}$ and PM_{10} can be inhaled. However, $PM_{2.5}$ is more likely to travel into and deposit on the surface of the deeper parts of the lung, while PM_{10} is more likely to deposit on the surfaces of the larger airways of the upper region of the lung. Particles deposited on the lung surface can induce tissue damage, and lung inflammation (CARB 2025).

If a project is below (meets) the applicable screening criteria, it may be assumed to have a less-than-significant impact upon the environment under CEQA.

DISCUSSION: To support the air quality analysis for the Project, Dokken Engineering completed air quality modeling calculations, which are included in Appendix A to this Draft IS/MND.

C.1. Less Than Significant. The applicable air quality plan for the Project is the 2021 Northern Sacramento Valley Planning Area Air Quality Attainment Plan (Attainment Plan), prepared by BCAQMD and other air quality management districts or air pollution control districts located in the northern Sacramento Valley. The Attainment Plan covers the entirety of Butte County, as well as Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties, and outlines the area's designated attainment status, air quality monitoring, emissions inventory, ozone trends, and more. The BCAQMD is the primary agency responsible for assuring that the national and California AAQS are attained and maintained in Butte County. Many of BCAQMD's rules are designed to help achieve the goals set out in the Attainment Plan (SVBAPCC 2021). The control measures outlined in the Attainment Plan are partially derived from regional projections for population growth, housing, employment, and transportation patterns provided by local cities and counties. Therefore, projects that align with the anticipated population, employment, and vehicle-miles-traveled (VMT) growth, as well as the associated emissions estimates included in the land use plans that informed the Attainment Plan, are considered consistent with the Attainment Plan.

The proposed Project is focused on erosion repair along the banks of Big Chico Creek and does not involve new construction or infrastructure that could drive population growth or alter transportation patterns. This Project is primarily aimed at stabilizing the creek banks to prevent further erosion exacerbated by increased water flow. By reinforcing the banks, the Project will mitigate potential future damage to surrounding areas, which could otherwise affect both the environment and the infrastructure near the creek. Additionally, the Project will enhance safety for pedestrians and motorists who cross over the bridges that span the creek, reducing the risk of accidents or infrastructure failure due to erosion. This proactive maintenance supports the long-term vision outlined in the City of Chico 2030 General Plan by addressing environmental concerns and ensuring safety without contributing to urban sprawl or significant changes in local traffic patterns.

Because the Project does not propose new development that could induce population growth or increase VMT, and that there would be no new operational emissions, the project would not impact the City's ability to be consistent with the goals of the region's Attainment Plan.

The Project will also comply with local air quality regulations, including those aimed at limiting emissions of reactive organic gases (ROG) and PM, such as Rule 205: Fugitive Dust Control, during construction. Measure BIO-15 from the BA will also be implemented as part of the Project, requiring effective control of dust-generating activities to minimize fugitive dust emissions. This will be achieved through methods such as water application or presoaking of materials. By following these measures, the Project minimizes its potential for negative air quality impacts. Therefore, the proposed Project is not anticipated to conflict with or obstruct the implementation of any air quality plans, and its environmental impacts, particularly in terms of air quality, would be **less than significant**.

C.2. Less Than Significant. After construction is completed, the Project will not alter traffic patterns in the area or significantly increase vehicle trips, aside from occasional maintenance visits which will continue as before. As a result, the Project would not produce any new operational emissions of criteria pollutants and toxic air contaminants.

Temporary air quality impacts from the proposed Project's construction were evaluated and quantified, where applicable, using the SMAQMD Roadway Construction Emissions Model (RCEM), Version 9.0.1. Activities during construction that may impact air quality include clearing and grubbing along the banks of Big Chico Creek, excavating the creek bed and banks, and installing RSP. These activities will produce

emissions of various air pollutants including ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$, potentially causing short-term air quality impacts. Emissions will result from off-road equipment exhaust, on-road vehicle exhaust, and the use of heavy machinery during grubbing, land clearing, excavation, and RSP placement. These emissions will be temporary, limited to the construction phase, and will cease once work is completed. The Project is anticipated to last approximately 6–8 weeks at all three locations and will be carried out within the hours allowed by the City of Chico's noise ordinances.

Construction emissions were estimated using the RCEM based on Project-specific construction data. Table C-4 presents the estimated construction emissions for the Rose Avenue site, Table C-5 presents those for the Warner Street site, and Table C-6 presents those for the Manzanita and Vallombrosa erosion repair site. A comprehensive list of daily and total emissions estimates for all locations is provided in Appendix A.

Table C-4. Daily and Annual Criteria Pollutant Emissions from Project Construction (Rose Avenue)

Construction Activity	ROG	NO_X	PM_{10}
Daily Emissions (Pounds per Day)			
Grubbing/Land Clearing	0.73	4.71	8.20
Grading/Excavation	1.17	8.75	8.42
Drainage/Utilities/Sub-Grade	0.71	4.16	8.22
Paving	0.00	0.00	0.00
Maximum	1.17	8.75	8.42
BCAQMD Significance Threshold	137	137	80
Exceeds Threshold?	No	No	No
Annual Emissions (Tons per Year)			
Grubbing/Land Clearing	0.00	0.01	0.02
Grading/Excavation	0.01	0.08	0.07
Drainage/Utilities/Sub-Grade	0.01	0.03	0.06
Paving	0.00	0.00	0.00
Total (tons per year)	0.02	0.12	0.16
BCAQMD Significance Threshold	4.5	4.5	--
Exceeds Threshold after mitigation?	No	No	N/A

Source: Appendix A

Table C-5. Daily and Annual Criteria Pollutant Emissions from Project Construction (Warner Street)

Construction Activity	ROG	NO_X	PM_{10}
Daily Emissions (Pounds per Day)			
Grubbing/Land Clearing	0.73	4.71	8.20
Grading/Excavation	1.23	9.12	8.44
Drainage/Utilities/Sub-Grade	0.71	4.16	8.22
Paving	0.00	0.00	0.00
Maximum	1.23	9.12	8.44
BCAQMD Significance Threshold	137	137	80
Exceeds Threshold?	No	No	No
Annual Emissions (Tons per Year)			
Grubbing/Land Clearing	0.00	0.01	0.02

Grading/Excavation	0.01	0.08	0.07
Drainage/Utilities/Sub-Grade	0.01	0.03	0.06
Paving	0.00	0.00	0.00
Total (tons per year)	0.02	0.12	0.16
BCAQMD Significance Threshold	4.5	4.5	--
Exceeds Threshold after mitigation?	No	No	N/A

Source: Appendix A

Table C-6. Daily and Annual Criteria Pollutant Emissions from Project Construction (Manzanita and Vallombrosa Erosion Repair Site)

Construction Activity	ROG	NO_X	PM_{10}
Daily Emissions (Pounds per Day)			
Grubbing/Land Clearing	0.73	4.47	8.20
Grading/Excavation	1.23	9.12	8.44
Drainage/Utilities/Sub-Grade	0.71	4.16	8.22
Paving	0.00	0.00	0.00
Maximum	1.23	9.12	8.44
BCAQMD Significance Threshold	137	137	80
Exceeds Threshold?	No	No	No
Annual Emissions (Tons per Year)			
Grubbing/Land Clearing	0.00	0.02	0.01
Grading/Excavation	0.01	0.10	0.08
Drainage/Utilities/Sub-Grade	0.01	0.06	0.03
Paving	0.00	0.00	0.00
Total (tons per year)	0.02	0.12	0.16
BCAQMD Significance Threshold	4.5	4.5	--
Exceeds Threshold after mitigation?	No	No	N/A

Source: Appendix A

As shown in Tables C-4, C-5, and C-6, the Project's estimated construction emissions at all three locations are well below the applicable BCAQMD thresholds. Therefore, the Project's construction-related air quality impact would be **less than significant**.

C.3. Less Than Significant. Typical sensitive receptors include residences, hospitals, schools, and parks due to their higher sensitivity to air pollution and health risks. In the Project vicinity, low-density residential properties are located adjacent to the Rose Avenue Bridge and erosion site at Manzanita and Vallombrosa, while the Warner Street Bridge is situated on the CSUC campus. The nearest sensitive receptor to the Warner Street site is Plumas Hall, an educational facility on the CSUC campus, located approximately 60 feet north of the proposed construction area within Big Chico Creek. At the Rose Avenue site, the closest sensitive receptor is a private residence approximately 40 feet southeast of the planned repair work. At the Manzanita and Vallombrosa erosion repair site, the nearest sensitive receptor is a private residence approximately 150 feet northwest of the planned repair work. Additional sensitive receptors within 1,000 feet of the Project areas may also be exposed to construction-related emissions of criteria pollutants and toxic air contaminants.

Construction activities—including clearing, excavation, and the use of heavy machinery—could temporarily release pollutants such as ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. These emissions primarily stem from off-road equipment exhaust, on-road vehicle exhaust, and dust generated by grubbing, excavation, and material handling. However, the Project is not anticipated to generate a substantial amount of pollutants during the construction phase. As shown in Tables C-4, C-5, and C-6, estimated emissions at the Project locations are far below BCAQMD thresholds. Moreover, the construction period is relatively short, lasting only 6–8 weeks at all of the project sites, further limiting the duration of pollutant exposure. Best Management Practices (BMPs) that are applicable and recommended by the BCAQMD will be implemented to minimize dust and emissions, such as watering exposed soil, using well-maintained equipment, and limiting idling times for construction vehicles.

Given the combination of low emission levels, a brief construction timeline, and the implementation of BMPs, construction-generated criteria pollutant emissions are expected to be less than significant. Therefore, sensitive receptors in the vicinity will not be exposed to substantial concentrations of harmful pollutants, and the Project will result in a **less than significant** impact.

C.4. Less Than Significant. Potential sources of odors during construction include diesel exhaust. These odors are expected to be temporary and minor, dissipating quickly due to natural air dispersion. Given the surrounding environment, which consists of adjacent residential areas and public service facilities, construction-related odors are unlikely to overwhelm existing ambient odors. Furthermore, adherence to standard construction practices and equipment maintenance will help minimize emissions. As a result, the impact of construction-related odors would be **less than significant.**

MITIGATION: None required.

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D. Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species as listed and mapped in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

AFFEECTED ENVIRONMENT: A Biological Assessment (BA) was prepared for the Project in January 2025 by Dokken Engineering (**Appendix B**). The purpose of the BA is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project potentially may affect threatened, endangered, or proposed species. The BA is prepared in accordance with 50 Code of Federal Regulations (CFR) 402, legal requirements found in section 7 (a)(2) of the Federal Endangered Species Act (FESA; 16 USC 1536(c)) and with federal regulations, policy and guidance. Primary references consulted include species lists and information gathered using the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation tool, the National Oceanic Atmospheric Administration National Marine Fisheries Service Branch (NOAA Fisheries) West Coast Region Species List, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database, the California Native Plant Society inventory of rare and endangered plants, and literature review.

The Biological Study Area (BSA) was defined as the area of direct and indirect effects from construction activities, including potential staging/access areas with an approximate 50-meter buffer to account for impacts to VELB, CVSR Chinook salmon, and CCV steelhead. The BSA is approximately 5.85 acres in size (1.30 acres at Warner Street, 1.33 acres at Rose Avenue, and 3.20 acres at Manzanita Avenue and Vallombrosa Avenue) and includes all areas necessary for Project construction, access, and staging).

A general biological survey and jurisdictional delineation was conducted on July 30th, 2024, by Dokken Engineering biologists Scott Salembier and Jeff Harris for the Rose Avenue and Warner Street sites. In addition, biologist Jeff Harris, senior environmental planner Jeffery Little, and engineer Daniel Lierly, conducted an additional survey for these two sites on October 30th, 2024. A general biological survey and jurisdictional delineation for the Manzanita and Vallombrosa erosion repair site was conducted on February 26th, 2025, by Dokken Engineering biologists Jeff Harris and Lea Braen. The surveys consisted of a general assessment of biological conditions of the BSA, with special attention given to sensitive plant and wildlife species that were determined by the literature assessment to have a potential of occurring within the BSA. Methodology involved walking meandering transects throughout the BSA and recording observed vegetation and wildlife species as well as categorizing existing habitat communities. In addition, the existing bridge structures were inspected to determine suitability to support colonies of nesting birds (e.g. swallows) as well as bat maternity roosts. Water temperature and creek depth data were collected in order to assess creek conditions.

An Aquatic Resources Delineation Report (ARDR) was also prepared for the Project in June 2025 by Dokken Engineering (**Appendix C**). The field investigation was conducted in accordance with technical methods outlined in the Corps of Engineers Wetlands Delineation Manual (USACE 1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), and A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar 2008).The limits of the OHWM were mapped in the field

with an EOS Arrow 100 Receiver and ArcGIS software, and Arid West Ephemeral and Intermittent Streams OWHM Datasheets were completed. The limits of delineated resources were mapped in the field with an EOS Arrow 100 Receiver and ArcGIS software. OHWM data points were taken where primary indicators of the OWHM were delineated in accordance with the technical methods listed above.

The BSA is situated within a region that has largely been altered for residential and recreational development. The existing Rose Avenue, Warner Street, Manzanita Avenue and Vallombrosa Avenue BSA pass over Big Chico Creek, a perennial channel that flows east to west, dividing the BSA. Vegetation communities and land cover types within the BSA include roadway, urban/developed, riparian forest, and perennial creek (Figure 4. Vegetation Communities). Of these, perennial creek and riparian forest habitat are considered sensitive natural communities within the BSA.

The BSA was assessed for the potential for federally listed plant and wildlife species to occur. The potential for occurrence of special-status species was determined based on presence of suitable habitat, presence or absence of species during protocol surveys, and previously disturbed landcover. Literature research, habitat assessments, and biological surveys determined that three federally threatened species: the valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), California Central Valley steelhead (CCV Steelhead; *Oncorhynchus mykiss irideus pop. 11*), and Central Valley Spring-run Chinook Salmon (CVSR Chinook salmon; *Oncorhynchus tshawytscha pop.* 11) have the potential to occur within the BSA. The following discussion considers Project impacts on the species with potential to occur within the BSA.

DISCUSSION: D.1. Less Than Significant with Mitigation Incorporated. The special-status species with low to moderate potential to occur within the BSA are valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB), California Central Valley Steelhead (*Oncorhynchus mykiss irideus pop. 11;* CCV Steelhead*)*, Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha pop. 11;* CVSR Chinook salmon) and various other bird and raptor species protected under the Migratory Bird Treaty Act (MBTA).

Valley Elderberry Longhorn Beetle

The VELB has been federally listed as threatened since 1980. Elderberry shrubs, which grow in riparian areas and foothill woodlands in California's Central Valley, are VELB's obligate host plant which they depend on for survival and reproduction. The beetle goes through four life stages: egg, larvae, pupa, and adult. Females lay their eggs on the bark of the elderberry shrub and the larvae hatch and burrow into the stems. Larvae are active within the stems year-round and take one to two years to emerge as adults. The adults are active from March to June. The beetle feeds exclusively on the elderberry shrub throughout all stages of its life (USFWS 2017). VELB's usage of elderberry shrubs can be detected by the presence of exit holes created by the beetle's larval stage in the stem of the shrubs. The VELB is threatened by habitat loss of California's Central Valley riparian areas, mainly due to agriculture and urban development.

Survey Results for VELB

In accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017), the riparian corridor within the BSA provides suitable habitat for VELB. During the biological surveys conducted on July 30th, October 30th, 2024, and February 26th, 2025, 17 blue elderberry shrubs (*Sambucus mexicana*) were identified within the Rose Avenue Bridge BSA, within riparian forest habitat. 64 more shrubs were found within the Warner Street Bridge BSA, and a total of 118 shrubs were found at the Manzanita and Vallombrosa BSA (Figure 4. Vegetation Communities). Two

historic CNDDB occurrences of the species, both from 1991, were documented within the riparian corridor of Big Chico Creek. One is located within the BSA at the Manzanita Avenue and Vallombrosa Avenue site on the eastern bank of the creek, while the other is approximately 0.75 miles upstream of this location (CNDDB 2024). Potential exit holes were observed in elderberry shrub stems on one of the shrubs at the Rose Avenue Bridge BSA. No exit holes were observed on any other shrubs within the BSA. Since the BSA lies within the known range of the VELB and contains multiple elderberry shrubs, the BSA provides potentially suitable habitat for the species and may be currently occupied by the species.

Critical Habitat

The American River Parkway in Sacramento County, California hosts the densest known populations of VELB as well as their obligate host plant, the elderberry shrub (*Sambucus sp.*). Portions of the parkway have been identified as Critical Habitat by the USFWS (45 FR 52803, August 1980). The BSA does not occur within the American River Parkway and does not encompass Critical Habitat for this species. No impacts to VELB Critical Habitat will result from the proposed action.

Project Impacts to VELB

Elderberry Shrub Removal

Construction activities east of the Rose Avenue Bridge will result in the removal of six elderberry shrubs identified within the BSA (Figure 5. Project Impacts). No shrubs will be removed at the Warner Street Bridge or Manzanita and Vallombrosa erosion repair site. All three erosion repair sites are presumed occupied by VELB and any VELB within the six shrubs to be removed at Rose would be exposed to this stressor.

Indirect Effects to Elderberry Shrubs

Indirect effects include a temporary increase in noise, vibration, diesel fumes, and dust accumulation during construction. Any VELB occupying shrubs outside of the work area but within the BSA may be exposed to indirect effects to elderberry shrubs.

Work activities will be timed outside of the flight season for VELB when the beetle exists as larvae within living elderberry shrub stems. As such, exposure of individual VELB to these stressors will be minimized.

Riparian Habitat Loss

Table D-1 below lists the acres of permanent and temporary impacts to aquatic and riparian habitat as a result of the proposed Project. The permanent loss of riparian habitat will result in the removal of six elderberry shrubs, permanent modification of 0.11 acres (4,792 ft^2) of riparian habitat, and temporary disturbance of 0.10 acres (3,920 ft^2) of riparian habitat (Figure 5. Project Impacts). This habitat will result in a slight reduction in available habitat along the Big Chico Creek corridor. Any VELB in the vicinity of these projects would be exposed to this stressor.

Table D-1. Acres of Riparian Habitat Loss

	Permanent Aquatic Impacts (acres)	Temporary Aquatic Impacts (acres)	Permanent Riparian Impacts (acres)	Temporary Riparian Impacts (acres)
Rose Avenue Bridge	0.03	0.10	0.04	0.03
Warner Street Bridge	0.06	0.20	0.03	0.03
Manzanita and Vallombrosa erosion repair site	0.07	0.21	0.04	0.04
Total	0.16	0.51	0.11	0.10

Effects of the Action to VELB

CNDDB occurrences of the species are typically constrained to the riparian corridors along Butte Creek, the Feather River, and the Sacramento River. Although the BSA does not contain any CNDDB occurrences of the species, there are two historic (1991) CNDDB occurrences of the species within the riparian corridor of Big Chico Creek. One is located within the BSA at the Manzanita Avenue and Vallombrosa Avenue site on the eastern bank of the creek, while the other is approximately 0.75 miles upstream of this location (CNDDB 2024). Due to the presence of elderberry shrubs, VELB's obligate host plant, within the BSA as well as the historic local occurrences of this species, VELB has a high potential to occur within the BSA.

As discussed above, the proposed Action will result in the permanent removal of 0.11 acres of riparian corridor habitat, including the removal of six elderberry shrubs from the BSA at the Rose Avenue Bridge, reducing local habitat suitability for VELB. Approximately 0.10 acres of riparian habitat will be temporarily impacted to allow for equipment access within the BSA, reducing local habitat for elderberry shrubs and the associated VELB for the duration of construction; however, at of the locations elderberry shrubs and riparian habitat will persist on both the upstream and downstream ends of the projects. While the projects will slightly widen existing gaps in the riparian canopy, this is not expected to create an impassible barrier to VELB movement along the corridor.

ESA fencing will be installed adjacent to elderberry shrubs that are within 20-feet of project activities to indicate the presence of suitable VELB habitat and to prevent construction from encroaching on this sensitive resource. No herbicides, insecticides, fertilizers, or other chemicals will be implemented for the duration of the Project.

In accordance with measure BIO-23, direct impacts from the loss of six elderberry shrubs will be mitigated through either purchase of mitigation credits from a mitigation bank (if available) or by propagating shrubs within an offsite mitigation site along Big Chico Creek with equivalent habitat in order to offset 0.10 acres of temporary impacts and 0.11 acres of permanent impacts to VELB habitat in coordination with the USFWS.

Compensatory mitigation for impacts to VELB habitat is proposed based on the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017). In accordance with measure BIO-23, direct impacts from the loss of six elderberry shrubs as well as 0.10 acres of temporary impacts and 0.11 acres of permanent impacts to riparian habitat will be mitigated through implementation of an off-site mitigation plan or purchase of mitigation credits if (available). With the implementation of Mitigation Measures BIO-1 (Environmental Awareness Training) and BIO-13 through BIO-18 (VELB Mitigation

Measures) and BIO-23 (VELB Compensatory Mitigation) from the BA, and through the Section 7 Consultation process, potential impacts would be reduced to less than significant.

CCV Steelhead

California Central Valley Steelhead (CCV Steelhead) is listed as threatened under FESA (63 FR 13347, March 19, 1998) and is under the jurisdiction of NOAA Fisheries. This distinct population segment consists of steelhead in the Sacramento and S an Joaquin River basins in the Central Valley. Steelhead are anadromous fish that spend part of their life cycle in freshwater and part in salt water. Adults typically leave the ocean from August through April and enter freshwater from August to November to spawn between December and April in small streams with cool, well oxygenated water. Eggs hatch in the late winter or early spring and fry emerge from the gravel reeds about 4 to 6 weeks later. Fry typically spend their first summer in their natal streams before emigrating to the rest of the watershed, eventually reaching the lower reaches of the Sacramento and San Joaquin Rivers and the Delta in the fall, winter, or spring. Juveniles migrate to the ocean after 1 or 2 years in freshwater to mature. They return as adults to their natal streams to spawn and complete their life cycle.

The species was once abundant in California coastal and central valley drainages. Population numbers have declined significantly, especially in the tributaries of the Sacramento River and the species was thought to be extirpated entirely from the San Joaquin River Watershed but small populations have recently been discovered in the Stanislaus, Mokelumne, and Calaveras Rivers. Upon entering freshwater, they hold until flows are high enough in tributaries to enter for spawning. Unlike Pacific salmon, steelhead are capable of spawning more than once before they die. Steelhead may survive a wide temperature gradient, but optimal immigration and holding temperatures are 46°F to 52°F and optimal growing temperatures for juveniles are 59°F to 64.4°F

There are six biological features for steelhead including: freshwater spawning sites, freshwater rearing sites, freshwater migration corridors, estuarine areas, nearshore marine areas, and offshore marine areas (NOAA 2014).

Critical Habitat

Based on NOAA's West Coast Region Species and Habitat App, (NOAA 2024), the BSA is located within designated Critical Habitat for CCV steelhead. Federal regulations state that the physical and biological features (PBFs) essential to the conservation of the protected species include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species.

<u>Survey Results for CCV Steelhead</u>

During the biological survey on July 30th, 2024, juvenile steelhead were observed within Rose Avenue and Warner Street BSA. It was determined that the lower reaches of Big Chico Creek, located west of the Manzanita and Vallombrosa erosion repair site, do not provide suitable spawning habitat for steelhead. This is due to slow-moving, warm water conditions and a lack of deep pools necessary for juvenile development. Steelhead typically spawn about two miles upstream of the Manzanita and Vallombrosa erosion repair site, in the less disturbed, higher-elevation sections of the creek, where water temperature, gravel substrate, pool depth, and flow conditions are more conducive to spawning and juvenile rearing.

Water quality within the lower reaches of Big Chico Creek is outside of the optimal range for the species. Specifically, water temperature measured at the Chico State Campus, approximately 0.2 miles upstream of the Warner Street bridge erosion repair location, during in-water construction months (July – September), is on average 10 degrees Fahrenheit (°F) higher than the upper limit of optimal growing temperatures for juveniles (Chico State University 2021). Warm water temperature suggests this reach of the creek is not frequently utilized by resident juveniles or as spawning habitat. However, the BSA provides a potential freshwater migration corridor between freshwater spawning and rearing sites higher in the watershed and estuarine and marine habitats in the San Francisco Bay and Pacific Ocean.

In a virtual agency coordination meeting on November 19th, 2024, CDFW advised Dokken Engineering biologists that CCV Steelhead and other listed salmonids, such as CVSR Chinook salmon, would not be present in Big Chico Creek between July 15th and September 30th. During this period, water temperatures within the BSA would be lethal for salmonids, and the section of Big Chico Creek below Rose Avenue may dry up entirely, depending on the previous winter's rainfall.

Additionally, personal communications with FISHBIO, the Big Chico Creek Ecological Reserve, and Chico State University revealed that fish count data for Big Chico Creek is limited to the upper reaches, within the Ecological Reserve in the foothills. Studies of CCV steelhead are primarily conducted in these upper reaches because they offer critical spawning and juvenile rearing habitats, with better water quality and fewer human impacts. The lack of fish count data for the BSA, combined with CDFW's knowledge of local low flow conditions, pool depth, and warm water temperatures, supports the conclusion that steelhead are unlikely to be present during the timing of in-river project construction activities.

CVSR Chinook Salmon

Central Valley Spring Run Chinook salmon (CVSR Chinook salmon) is listed as threatened under FESA (70 FR 37160, June 28, 2005) and is under the jurisdiction of NOAA Fisheries. Central Valley spring-run Chinook salmon are anadromous fish that spend part of their life cycle in freshwater and part in salt water. Adults typically leave the ocean between January and May, entering freshwater from March to July. After migrating up rivers, they hold in deep pools with cool, well-oxygenated water during the summer months before spawning in the fall, usually between September and October. Eggs hatch in late fall or early winter, and the fry emerge from the gravel nests (redds) about 4 to 6 weeks later. Juvenile salmon typically spend 3 to 12 months in freshwater before migrating downstream through the Sacramento River system and into the Delta, eventually reaching the ocean. Once in the ocean, they mature over a period of 2 to 4 years before returning to their natal streams to spawn and complete their life cycle (NOAA 2014).

Historically, CVSR Chinook salmon were abundant in the rivers and tributaries of the Sacramento and San Joaquin River systems. However, population numbers have drastically declined due to habitat loss, water diversions, and barriers such as dams. In particular, many populations were thought to be extirpated from the San Joaquin River, but restoration efforts have led to the reintroduction of small populations in some tributaries. Upon entering freshwater, the salmon hold in deep pools until flows increase enough to access upstream spawning areas.

Unlike steelhead, Chinook salmon are semelparous, meaning they die after spawning once. The species can tolerate a range of water temperatures, but optimal holding temperatures range between 52°F to 60°F, while ideal temperatures for egg incubation and juvenile rearing range from 50°F to 55°F (NOAA 2014).

The critical habitat for CVSR Chinook salmon includes: freshwater spawning sites, freshwater rearing sites, freshwater migration corridors, estuarine areas, and nearshore marine areas.

Critical Habitat

Based on NOAA's West Coast Region Species and Habitat App (NOAA 2024), the BSA is located within designated Critical Habitat for CVSR Chinook salmon. Federal regulations state that the physical and biological features essential to the conservation of the protected species include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species.

Survey Results for CVSR Chinook Salmon

CVSR Chinook salmon were not observed within the BSA during the July 30th, October 30th, 2024, and February 26th, 2025 general biological surveys; however, there are documented CNDDB occurrences documented in the upper reaches of Big Chico Creek from 1997 and spawning populations of the species have been recently documented in the major tributaries to the Sacramento River including the Feather River, Yuba River, Butte Creek, Deer Creek, Mill Creek, and Clear Creek.

Within the BSA, in the lower reaches of Big Chico Creek that are west of the Manzanita and Vallombrosa erosion repair site, slow-moving warm water conditions do not provide suitable spawning habitat for CVSR Chinook salmon. CVSR Chinook salmon typically spawn ~2 miles upstream of the Manzanita and Vallombrosa erosion repair site BSA, in the less disturbed, higher-elevation sections of the creek where water temperature, gravel substrate, pool depth, and flow conditions are more suitable for spawning and juvenile rearing.

As mentioned in the survey results section for CCV steelhead, water quality within the lower reaches of Big Chico Creek is outside of the optimal range for the listed salmonids, including CVSR Chinook salmon. Specifically, water temperature measured at the Chico State Campus, approximately 0.2 miles of the Warner Street bridge erosion repair location, during in-water construction months (July – September), is on average 12°F higher than the upper limit of optimal growing temperatures for juvenile CVSR Chinook salmon (Chico State University 2021). However, the BSA provides a potential freshwater migration corridor between freshwater spawning and rearing sites higher in the watershed and estuarine and marine habitats in the San Francisco Bay and Pacific Ocean.

On November 19th, 2024, Dokken Engineering biologists Jeffery Little and Jeff Harris communicated personally with Tracy McReynolds, a Senior Environmental Scientist with CDFW Region 2, who has extensive experience with listed salmonids in the region. She confirmed that CVSR Chinook salmon, would not be present within the BSA in Big Chico Creek between July 15th and September 30th. During this period, water temperatures would be lethal for salmonids, and the section of Big Chico Creek below Rose Avenue may dry up entirely, depending on the previous winter's rainfall. CDFW advised the Dokken Engineering biologists that no take of these species is anticipated, provided the project is completed within this timeframe.

Additionally, personal communications with FISHBIO, the Big Chico Creek Ecological Reserve, and Chico State University revealed that fish count data for Big Chico Creek is limited to the upper reaches, within the Ecological Reserve in the foothills. Studies of CVSR Chinook salmon are primarily conducted in these upper reaches because they offer critical spawning and juvenile rearing habitats, with better water quality and fewer human impacts. The lack of fish count data for the BSA, combined with CDFW's

knowledge of local low flow conditions, pool depth, and warm water temperatures, supports the conclusion that CVSR Chinook salmon are unlikely to be present during the timing of in-river project construction activities.

Project Impacts to CCV Steelhead and CVSR Chinook Salmon

Removal of Riparian Trees

Permanent modification of the riparian habitat will result in the removal of riparian trees at all three erosion repair sites. The removal of riparian vegetation is considered to be an indirect impact. Removal of riparian trees and understory vegetation may reduce the availability of listed salmonid critical habitat elements such as shaded refuge, food sources, and stable creek banks.

Addition of Rock Slope Protection

The placement of RSP within Big Chico Creek will disrupt aquatic critical habitat features necessary for the growth and survival of salmonid species. The addition of hard, impermeable RSP may alter localized water flow patterns reducing the availability of deep pools and slow-moving water areas that provide refuge for juvenile salmonids from strong currents and predators. The placement of RSP is not anticipated to affect the integrity of spawning habitat as the Project is downstream of spawning habitat.

The addition of RSP will also result in temporary and permanent impacts to the riparian corridor, which is considered a PBF of salmonid Critical Habitat. As discussed above, this reach of Big Chico Creek is likely used as a migration corridor (from October 1st to June 30th) between spawning habitat farther upstream in the watershed and marine habitats and juveniles are not likely to take up residence in this reach. The loss of riparian trees and vegetation would have minimal impact on the critical habitat value for salmonids within the BSA.

Temporary Diversion of Stream Channel

Salmonid critical habitat would be temporarily impacted due to the implementation of a temporary water diversion utilized to place the RSP along the eroded banks and scoured bridge structures.

The temporary water diversion proposed by the Project may serve as a physical barrier to salmonids migrating within Big Chico Creek. As mentioned in Section 3.4.4, salmonids are not expected to be present within the BSA or utilize the water diversion during the work window of July 15th to September 30th, as temperatures in Big Chico Creek would be lethal to salmonids. Therefore, no take of salmonids is anticipated as a result of the implementation of a temporary water diversion.

Effects of the Action to CCV Steelhead and CVSR Chinook Salmon

Populations of CCV steelhead and CVSR Chinook salmon within the lower reaches of Big Chico Creek within the BSA are well documented on CNDDB. Additionally, CCV steelhead were observed during the biological surveys conducted on July 30th, 2024. As such, listed salmonids may have a moderate potential to occur within the BSA from October 1st to July 14th.

As discussed above, the proposed Action is likely to alter streamflow dynamics and sediment transport, potentially degrading critical spawning and rearing habitats by increasing sedimentation or reducing habitat complexity. The temporary water diversion could disrupt migration patterns, potentially stranding fish or reducing access to essential habitats for spawning and juvenile rearing. The permanent and temporary loss of riparian vegetation would decrease shading, increasing water temperatures and reducing shelter and food sources for juvenile fish, which could hinder their growth and survival.

Additionally, the loss of riparian habitat may increase predation risks and further degrade water quality, negatively impacting both species throughout their life stages.

In accordance with the species-specific avoidance and minimization measures, in-water work will be limited to the summer (dry) season (July 15th to September 30th) and a focused pre-construction survey will be conducted within Big Chico Creek prior to the installation of the temporary water diversion. During this dry season, CCV steelhead and CVSR Chinook salmon are not expected to be within the BSA, due to a lack of flowing water at the Rose Avenue Bridge site, and lethal water temperatures at all three erosion repair sites.

The Project may still result in increased stress or energy expenditure of CCV steelhead and CVSR Chinook salmon if they are exposed to Project-related stressors, which may have a negative effect on any individuals in the area. If CCV steelhead or CVSR Chinook salmon are identified within the Project footprint during construction, in-water work will be suspended, and NOAA Fisheries will be contacted for further guidance. With the implementation of Mitigation Measures BIO-1 (Environmental Awareness Training), BIO-20 (Restricted In-water Work Window) and BIO-20 through BIO-22 (CCV Steelhead and CVSR Chinook Salmon Mitigation Measures) from the BA, and through the Section 7 Consultation process, potential impacts would be reduced to less than significant.

Migratory Birds and Raptors

Migratory birds and raptors are protected under the Migratory Bird Treaty Act (16 USC 703) and the California Fish and Game Code (CFGC) (§3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA include nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance have the potential to affect bird species protected by the MBTA.

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also states that "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." There is suitable nesting habitat for a variety of ground, shrub, and tree nesting avian species within the study area. The Project would primarily trench through existing roadways, which are not habitat for migratory birds and raptors. However, smaller portions of the Project could trench through and directly affect habitat for migratory birds and raptors. Migratory birds and raptors have potential to roost within the riparian forest habitat within the BSA. With the implementation of Mitigation Measures BIO-1 and BIO-9 from the BA, potential impacts to nesting birds and raptors would be reduced to less than significant.

Offsite Restoration

One potential mitigation alternative that is being considered under mitigation measure BIO-24 is for the City to fund an offsite riparian restoration project at the Big Chico Creek Ecological Reserve, located approximately 13 miles upstream of the Warner Street Bridge (39.86895, -121.707333). The restoration project would include enhancements designed to benefit listed salmonids, including CCV salmon and CVSR spring-run Chinook salmon, by reducing sedimentation and increasing canopy cover along Big Chico Creek. The mitigation efforts will create or enhance structures and conditions that support the

natural behaviors of these fish, such as spawning, rearing, and migration. As the conditions of Big Chico Creek within the Ecological Reserve are currently ideal for salmon, the mitigation effort will focus on indirectly enhancing water quality by stabilizing banks and soils within the riparian corridor above and below the OHWM and re-establishing the riparian forest that was damaged during the 2024 Park Fire. These improvements are expected to indirectly enhance water quality and salmonid critical habitat in the region by reducing sedimentation and increasing canopy cover along Big Chico Creek. The OHWM was delineated using aerial imagery and site photos and has been drawn in to determine the extent of in-stream enhancements below the OHWM. This mitigation project will offset impacts from the erosion repair projects.

With the implementation of Avoidance and Minimization measures BIO-1 (Environmental Awareness Training), BIO-9 (Pre-construction Bird Nesting Survey), BIO-19 (Restricted In-water Work Window), BIO-13 through BIO-18 (VELB Mitigation Measures), BIO-23 (VELB Compensatory Mitigation) and BIO-20 through BIO-22 (CCV Steelhead and CVSR Chinook Salmon Mitigation Measures), impacts to special status species would be reduced to **Less than Significant with Mitigation Incorporated.**

D.2. Less Than Significant with Mitigation Incorporated. As discussed above, there is NOAA Fisheries designated Critical Habitat for CCV Steelhead and CVSR Chinook Salmon in the BSA. In addition, two sensitive natural communities are present within the BSA: Big Chico Creek and associated riparian forest habitat. At the Rose Avenue Bridge, approximately 0.33 acres of Big Chico Creek and 0.79 acres of riparian habitat are present, at the Warner Street Bridge, approximately 0.40 acres of Big Chico Creek and 0.79 acres of riparian habitat are present, and at the Manzanita and Vallombrosa erosion repair site, approximately 0.68 acres of Big Chico Creek and 1.39 acres of riparian habitat are present. The proposed erosion control work is expected to result in both permanent and temporary impacts to these habitat communities.

At the Rose Avenue Bridge, the Project will result in approximately 0.03 acres of permanent impacts to Big Chico Creek due to the installation of RSP below the OHWM as well as approximately 0.10 acres of temporary impacts due to construction access and water diversion installation and implementation. Riparian habitat impacts at this location include approximately 0.04 acres of permanent impacts from the RSP placement and approximately 0.02 acres of temporary impacts from staging and access. The RSP will reinforce the existing creek banks, the northeast abutment footing and wingwalls, and a concrete-encased sewer pipe. The RSP on the creek banks will be based on the Caltrans Mounded Toe RSP design as shown in Highway Design Manual Figure 873.3D with a 1.5:1 slope. The RSP will be underlain with a gravel filter. RSP will extend upstream to protect an existing stream gage. RSP will be placed on the downstream side of the concrete encased sewer pipe to prevent additional scour.

At the Warner Street Bridge, the Project is anticipated to cause permanent impacts to approximately 0.06 acres of Big Chico Creek due to the installation of RSP below the OHWM, as well as temporary impacts of approximately 0.20 acres due to construction access and water diversion installation and implementation. Riparian habitat impacts at this location include approximately 0.03 acres of permanent impacts from RSP placement and approximately 0.03 acres of temporary impacts from staging and tree and shrub removal required for access.

At the Manzanita and Vallombrosa erosion repair site, the Project is anticipated to cause permanent impacts to approximately 0.07 acres of Big Chico Creek due to the installation of RSP below the OHWM, as well as temporary impacts of approximately 0.21 acres due to construction access and water diversion headwall installation. Riparian habitat impacts at this location include approximately 0.04 acres of permanent impacts from RSP placement and approximately 0.04 acres of temporary impacts

from staging and tree removal required for access. Impacts on these sensitive natural communities would be considered significant. With the implementation of Avoidance and Minimization measures BIO-1 through BIO-8, BIO-13 through BIO-22, BIO-23, and BIO-24, as well as the off-site compensatory mitigation, the impacts would be reduced to **Less than Significant with Mitigation Incorporated.**

D.3. Less Than Significant with Mitigation Incorporated. An ARDR (**Appendix C**) was prepared for each of the three sites in June 2025 by Dokken Engineering. The study area contains a total of 0.92-acres of Waters of the United States and Waters of the State. This acreage is less than what was reported in the Biological Assessment prepared for the Project, as the ARDR does not incorporate the 50-meter extended BSA buffer used to account for potential indirect effects on special-status species such as VELB, Central Valley spring-run Chinook salmon, and California Central Valley steelhead. At all three locations, the Project has the potential to permanently impact a total of 0.16-acres of jurisdictional waters due to placement of RSP below the OHWM and temporarily impact a total of approximately 0.51-acres due to construction access and installation of the temporary water diversion. With the implementation of Avoidance and Minimization measures BIO-1 through BIO-7, the impacts would be reduced to **Less than Significant with Mitigation Incorporated.**

D.4. Less Than Significant Impact with Mitigation Incorporated. The proposed Project involves installation of a temporary water diversion system that may intermittently impact the movement of migratory fish and wildlife species within Big Chico Creek. Throughout implementation of the diversion, the natural flow of the channel will be maintained to ensure continuous water movement. This approach is designed to prevent any blockage or significant alteration of aquatic pathways, thereby allowing unimpeded passage of fish and other aquatic wildlife. While the temporary water diversion system may cause short-term disturbances in the creek system, these impacts will be minimized through the implementation of BMPs and Avoidance and Minimization Measures which include timing construction activities outside of critical migratory or breeding periods. With the implementation of measure BIO-19, the Project would not interfere substantially with the movement of any native fish or wildlife species, nor cause fragmentation of an existing wildlife habitat, and impacts would be reduced to **Less than Significant with Mitigation Incorporated.**

D.5. Less than Significant. Through compliance with state and federal regulations protecting sensitive biological resources, including waters of the United States and special-status species, the proposed Project would not conflict with any of the City of Chico General Plan Policies or the Butte County General Plan policies. There would be no impact. Project construction activities are anticipated to occur primarily within existing roadway right-of-way and open space areas. There may be some riparian tree removal on the southern bank of Big Chico Creek at Rose Avenue on two private parcels: 043-681-085-000 and 043-690-032-000. However, since the trees to be removed on these parcels consist only of non-native species, they are exempt from protections listed in the City's Tree Ordinance, and a tree removal permit will not be required. If changes to the Project design affect native trees within any private parcels, those trees should be evaluated for potential protection under local tree ordinances. Therefore, impacts would be **Less than Significant.**

D.6. No Impact. The Butte County Natural Community Conservation Plan (NCCP) and Habitat Conservation Plan (HCP) is a comprehensive conservation initiative aimed at balancing development and environmental preservation for the region. This plan addresses the conservation of species and habitats, while streamlining the permitting process for development projects. It is a dual-purpose document, serving both as a NCCP under California law and an HCP under the FESA. The Butte County NCCP/HCP covers approximately 564,270 acres in Butte County, including the BSA and focuses on protecting natural communities and federally or state-listed species. As of March 2025, there is no

publicly available information confirming that the City of Chico has formally adopted the Butte County NCCP/HCP. While the final draft was completed in 2019, key steps such as finalizing the Implementing Agreement and obtaining necessary findings for the NCCP permit remain outstanding. There are no other local, regional or state HCPs that cover the BSA. Therefore, there would be **No Impact.**

MITIGATION:

BIO-1: All construction personnel will be required to attend an environmental awareness training prior to working on the Project. The training will include an overview of sensitive habitats and special-status species, including but not limited to Big Chico Creek, riparian vegetation, valley elderberry longhorn beetle, CCV steelhead, and CVSR Chinook salmon. The training will include the protective measures that must be complied with.

BIO-2: Prior to the start of construction activities, the Project limits in proximity to the sensitive habitats (Big Chico Creek and riparian corridor) and elderberry shrubs will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into sensitive resources.

BIO-3: Best Management Practices will be incorporated during construction to minimize impacts on the environment including erosion and the release of pollutants (e.g. oils, fuels):

- Exposed soils and material stockpiles will be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities;
- All construction roadway areas will be properly protected to prevent excess erosion, sedimentation, and water pollution;
- All vehicle and equipment fueling/maintenance would be conducted outside of any surface waters;
- Equipment used in and around jurisdictional waters must be in good working order and free of dripping or leaking contaminants;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life will be prevented from contaminating the soil or entering jurisdictional waters;
- All erosion control measures and storm water control measures will be properly maintained throughout construction;
- All temporarily disturbed areas will be re-graded to pre-construction contours;
- All disturbed areas will be revegetated, either through hydroseeding or other means, with native or approved non-invasive exotic species;
- All construction materials will be hauled off-site after completion of construction;
- Upon completion of construction activities, any temporary barriers to surface water flow will be removed to allow flow to resume.

BIO-4: All work will take place outside of areas with flowing or standing water. A temporary water diversion will be installed prior to any in-water work in the channel. The diversion will be designed to accommodate existing and anticipated flows and will be constructed from clean materials in such a way that prevents excessive sedimentation. All materials must be removed from the channel upon completion of in-water work in the channel.

BIO-5: Poured concrete shall be excluded from the channel for a period of 30 days after it is poured. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for the 30-day period may occur.

BIO-6: When feasible, refueling or maintenance of equipment will occur outside of Big Chico Creek and the associated riparian zone. All onsite refueling and maintenance must occur over plastic sheeting, drip pans, or other secondary containment measures to capture accidental spills before they can contaminate the soil. Secondary containment consisting of plastic sheeting or other impermeable sheeting must be installed underneath all stationary equipment to prevent petroleum products or other chemicals from contaminating the soil, riparian corridor or Big Chico Creek. Secondary containment must have a raised edge (e.g. sheeting wrapped around wattles).

BIO-7: A chemical spill kit must be kept onsite at all times during work and must be easily accessible for use in the event of a spill.

BIO-8: Vegetation removal will be limited to the trees/shrubs marked on the plans for removal (Figure 5. Project Impacts). Trees will be preferentially trimmed rather than removed and trimming should not exceed 30% of the total canopy of each tree.

BIO-9: Prior to vegetation removal or initial ground disturbance during the nesting bird season (February 1st – September 30th) a pre-construction nesting bird survey must be conducted by a Project biologist prior to the start of work. The nesting bird survey must include the Action Area plus a 300-foot buffer. Within one week of the nesting bird survey, all vegetated areas surveyed, that are designated for removal, must be cleared.

If an active nest is discovered during construction, the contractor must immediately stop work until the appropriate no-work buffer is established, to be determined by a Project biologist. Other avoidance and minimization measures, such as visual and sound barriers, may be considered to avoid take of an active nest but must be approved by a Project biologist prior to implementation. A Project biologist must monitor the initial implementation of alternative avoidance strategies. If the Project biologist determines that avoidance strategies are insufficient to avoid take of active nests, all Project activities shall cease, and work will not resume until the Project biologists determines that the young have fledged.

If a Swainson's hawk nest is observed during the pre-construction survey CDFW will be contacted for further guidance. The contractor is prohibited from conducting work that could result in take of an active nest.

BIO-10: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spread of noxious weeds.

BIO-11: All food-related trash must be disposed into closed containers and must be removed from the Action Area daily. Construction personnel must not feed or otherwise attract wildlife to the Action Area.

BIO-12: If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

The following measures are specifically designed to avoid impacts to VELB.

BIO-13: Prior to construction, the Project biologist will conduct a survey of the Action Area to ensure that no new shrubs, with stems 1 inch or greater, have appeared since the original survey. If new shrubs, with stems 1 inch or greater, are discovered that may be impacted by the Project coordination with USFWS will occur.

BIO-14: Herbicides, insecticides, fertilizers, or other chemicals that might harm the VELB or VELB's host plant will not be used within 100 feet of elderberry shrubs. If required, any chemicals will be applied using a backpack sprayer or a similar direct application method.

BIO-15: To prevent fugitive dust from drifting into adjacent habitat, all clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, demolition activities, or other dust generating activities will be effectively controlled for fugitive dust emissions utilizing application of water or by presoaking.

BIO-16: Project activities will be timed to fall outside of the VELB flight season (March – June).

BIO-17: Elderberry stems ≥ 1 inch in diameter may not be trimmed between March and October.

BIO-18: A qualified biologist will monitor the Action Area at Project during vegetation removal and installation of RSP to assure that all avoidance and minimization measures are implemented.

BIO-23: Prior to the start of construction, the City will propagate elderberry shrubs within an offsite mitigation site along Big Chico Creek with equivalent habitat, and/or purchase VELB mitigation credits from a USFWS-approved mitigation bank in accordance with the final Biological Opinion issued for the Project. If VELB mitigation credits are not available at the time of construction, the City will develop a habitat enhancement plan in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017), to appropriately mitigate for the Project's permanent impacts to VELB habitat in coordination with USFWS.

The following measures are specifically designed to avoid impacts to CCV Steelhead and CVSR Chinook Salmon.

BIO-19: In-water work will be limited to July 15th to September 30th to minimize potential for direct take of CCV steelhead and CVSR Chinook salmon.

BIO-20: A temporary water diversion and fish capture/relocation plan must be submitted to NOAA Fisheries and CDFW prior to the start of project activities in accordance with regulatory agency permitting requirements.

BIO-21: Screens on pumps used for dewatering efforts must follow the NMFS salmonid-screening specifications (CDFW 2010):

- Porosity: The screen surface shall have a minimum open area of 27 percent. We recommend the maximum possible open area consistent with the availability of appropriate material, and structural design considerations. The use of open areas less than 40 percent shall include consideration of increasing the screen surface area, to reduce slot velocities, assisting in both fish protection and screen cleaning.
- Round Openings: Round openings in the screening shall not exceed 2.38mm (3/32in).
- Square Openings: Square openings in screening shall not exceed 2.38mm (3/32in) measured diagonally.

- Slotted Openings: Slotted openings shall not exceed 1.75mm (0.07in).

BIO-22: Erosion control measures shall be in place at all times during construction. Construction shall not start until temporary control materials and devices are in place downslope or downstream of the work site within the riparian area:

- Materials will not contain plastic netting.
- After Project completion, and before close of seasonal work window, all exposed soils shall be stabilized with erosion control measures such as mulch, seeding, and or placement of erosion control blankets.
- Precautions to minimize turbidity/siltation shall be taken into account during Project planning and shall be implemented at the time of construction. This may require placing silt fencing, well-anchored sandbag or sheet pile cofferdams, temporary water bladder dams, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to enter flowing water.

In addition to the impacts listed above to VELB, the Project will result in temporary and permanent impacts to the Big Chico Creek floodplain, including CCV steelhead and CVSR Chinook salmon critical habitat. The following measure is included to offset Project impacts to salmonid critical habitat.

BIO-24: To offset the loss of riparian trees and aquatic resources, the City will either purchase mitigation credits from a mitigation bank (if available) or fund an offsite riparian restoration project. The mitigation ratios will be consistent with the requirements of the applicable regulatory permitting agencies.

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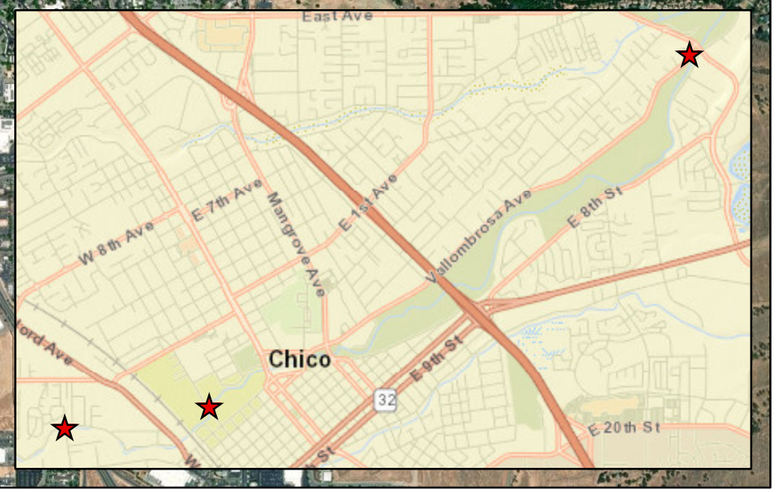
Biological Study Area

Manzanita Avenue and Vallombrosa Aveue

Big Chico Creek

Warner Street Bridge

Rose Avenue Bridge



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Source: ESRI Maps Online; Dokken Engineering 6/4/2025; Created By: jharris

1 inch = 2,000 feet

0 2,000 4,000 6,000 8,000 Feet

Figure 4
Vegetation Communities
Page 1 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (1.33 acres)

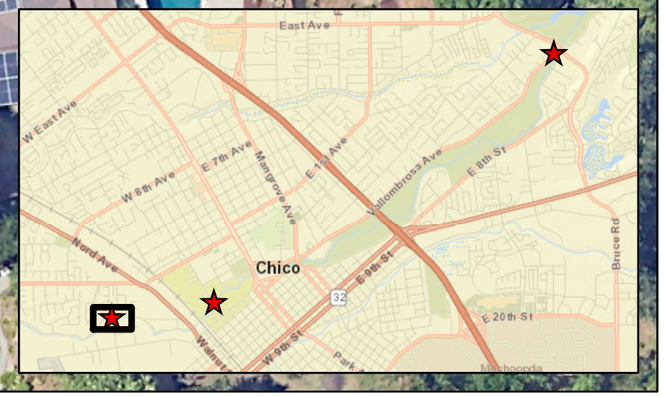
Vegetation Communities

- Perennial Creek (0.33 acres)
- Riparian Forest (0.81 acres)
- Road (0.18 acres)
- Urban/Developed (0.04 acres)
- Elderberry Shrubs
- Non-Native Trees

Bidwell Avenue

Big Chico Creek

Rose Avenue



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Source: ESRI Maps Online; Dokken Engineering 6/23/2025; Created By: jharris

1 inch = 40 feet

0 40 80 120 160 200 Feet

Figure 4
Vegetation Communities
Page 2 of 4
Rose Avenue Bridge
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (1.30 acres)

Vegetation Communities

- Perennial Creek (0.40 acres)
- Riparian Forest (0.79 acres)
- Road (0.12 acres)
- Urban/Developed (0.06 acres)
- Patch of Elderberry Shrubs
- Elderberry Shrubs
- Box Elder Trees

18 Elderberry Shrubs

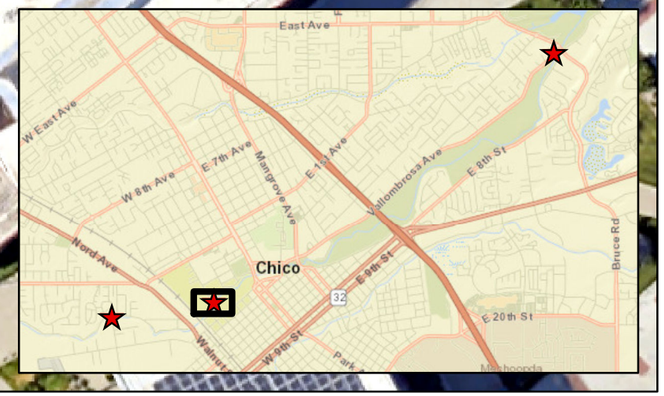
Warner Street

Big Chico Creek

10 Elderberry Shrubs

Ivy Street

24 Elderberry Shrubs



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Source: ESRI Maps Online; Dokken Engineering 6/23/2025; Created By: jharris

1 inch = 50 feet

0 40 80 120 160 200 Feet

Figure 4
Vegetation Communities
Page 3 of 4
Warner Street Bridge
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (3.22 acres)

Vegetation Communities

Riparian Forest (1.28 acres)

Road (0.56 acres)

Urban/Developed (0.70 acres)

Perennial Creek (0.68 acres)

Patch of Elderberry Shrubs

Elderberry Shrubs (~70 Shrubs)

Native Trees

Big Chico Creek

Covell Park Avenue

Manzanita Avenue

Centennial Avenue

Vallombrosa Avenue

18 Shrubs

30 Shrubs

Chico

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Source: ESRI Maps Online; Dokken Engineering 6/24/2025; Created By: jharris

1 inch = 75 feet

0 40 80 120 160 200 Feet

Figure 4
Vegetation Communities
Page 4 of 4
Manzanita Avenue and Vallombrosa Avenue
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

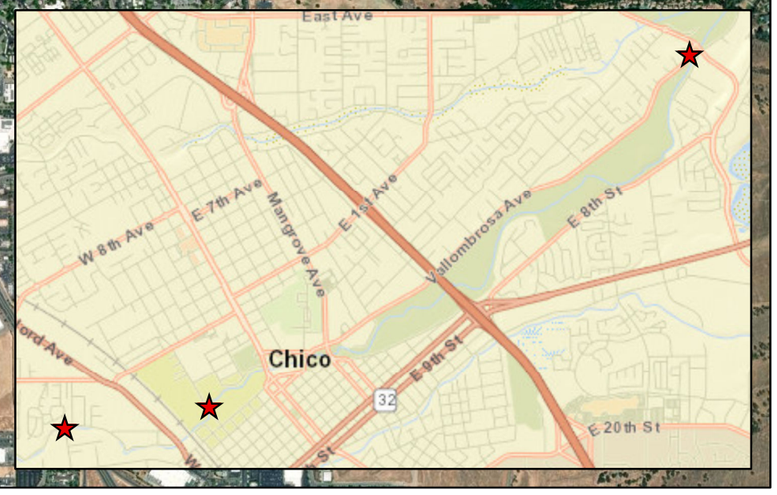
Biological Study Area

Manzanita Avenue and Vallombrosa Aveue

Big Chico Creek

Warner Street Bridge

Rose Avenue Bridge



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Source: ESRI Maps Online; Dokken Engineering 6/4/2025; Created By: jharris

1 inch = 2,000 feet

0 2,000 4,000 6,000 8,000 Feet

Figure 5
Project Impacts
Page 1 of 4

Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (1.33 acres)
Temporary Water Diversion (130 Linear Feet)
Bridge
ESA Fencing

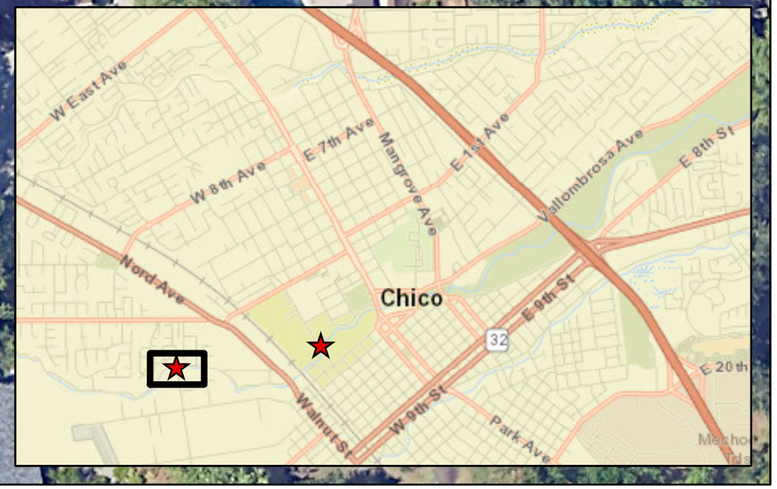
Project Impacts

Permanent Aquatic (RSP Below OHWM - 0.03 acres)
Permanent Riparian (RSP Above OHWM - 0.04 acres)
Temporary Riparian (Access and Staging - 0.03 acres)
Temporary Aquatic (Water Diversion Headwalls - 0.01 acres)
Temporary Aquatic (Water Diversion - 0.10 acres)
Elderberry Shrubs - No Impact (3 Shrubs)
Elderberry Shrubs - Removal (6 Shrubs)
Elderberry Shrubs - Indirect Impacts (7 Shrubs)
Non-Native Trees to be Removed (2 Trees)

Vegetation Communities

Riparian Forest (0.81 acres)
Perennial Creek (0.33 acres)
Road (0.18 acres)
Urban/Developed (0.04 acres)

Glossy Privet
12- Feet from ESA Fencing
Bidwell Avenue
Big Chico Creek
Nettle Tree
Rose Avenue



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Source: ESRI Maps Online; Dokken Engineering 7/1/2025; Created By: jharris

1 inch = 40 feet

0 40 80 120 160 200 Feet

Figure 5
Project Impacts
Page 2 of 4
Rose Avenue Bridge
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (1.30 acres)
Temporary Water Diversion (260 Linear Feet)
Bridge and Pedestrian Bridges
Warner Wingwalls
ESA Fencing

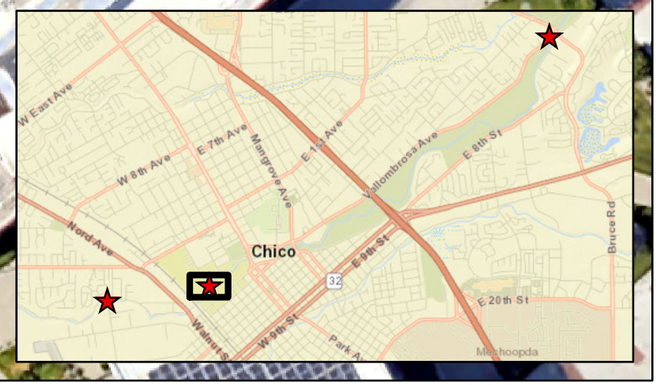
Project Impacts

Permanent Aquatic (RSP Below OHWM - 0.06 acres)
Permanent Riparian (RSP Above OHWM - 0.03 acres)
Temporary Riparian (Access and Staging - 0.03 acres)
Temporary Aquatic (Water Diversion Headwalls - 0.01 acres)
Temporary Aquatic (Water DIversion - 0.19 acres)
Patch of Elderberry Shrubs - No Impact (43 Shrubs)
Patch of Elderberry Shrubs - Indirect Impacts (9 Shrubs)
Elderberry Shrubs - No Impact (12 Shrubs)
Native Box Elder Trees to be Removed (5 Trees)

Vegetation Communities

Riparian Forest (0.79 acres)
Perennial Creek (0.40 acres)
Road (0.12 acres)
Urban/Developed (0.06 acres)

Warner Street
Big Chico Creek
Ivy Street



V:\2833_Chico_On_Call_Structural_Engineering\Biology\F5_Project Impacts Warner.mxd

Source: ESRI Maps Online; Dokken Engineering 6/23/2025; Created By: jharris

1 inch = 50 feet

0 50 100 150 200 250 Feet

Figure 5
Project Impacts

Warner Street Bridge
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

Biological Study Area (3.22 acres)

Temporary Water Diversion (200 Linear Feet)

Project Impacts

Permanent Aquatic (RSP Below OHWM - 0.07 acres)

Permanent Riparian (RSP Above OHWM - 0.04 acres)

Temporary Riparian (Access and Staging - 0.04 acres)

Temporary Aquatic (Water Diversion Headwalls - 0.02 acres)

Temporary Aquatic (Water Diversion - 0.19 acres)

Patch of Elderberry Shrubs - No Impact (~48 Shrubs)

Elderberry Shrubs - No Impact (~70 Shrubs)

Native Trees to be Removed

Vegetation Communities

Riparian Forest (1.28 acres)

Road (0.56 acres)

Urban/Developed (0.70 acres)

Perennial Creek (0.68 acres)

Big Chico Creek

Covell Park Avenue

Manzanita Avenue

Vallombrosa Avenue

Centennial Avenue

East Ave

W 8th Ave

E 7th Ave

Mangrove Ave

E 1st Ave

Vallombrosa Ave

E 8th St

Chico

E 9th St

32

E 20th St

V:\2833_Chico_On_Call_Structural_Engineering\Manzanita and Vallombrosa\EF5_Project Impacts.mxd

Source: ESRI Maps Online; Dokken Engineering 6/24/2025; Created By: jharris

1 inch = 75 feet

0 75 150 225 300 Feet

Figure 5
Project Impacts
Page 4 of 4
Manzanita Avenue and Vallombrosa Avenue
Big Chico Creek Erosion Repair Project
City of Chico, Butte County, California

E. Cultural Resources

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
3. Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

AFFECTED ENVIRONMENT: Dokken Engineering conducted a cultural resources investigation for the proposed Project (See **Appendix D**). Efforts to identify cultural resources in the Area of Potential Effects (APE) include background archival research, a search of site records and inventory reports on file at the Northeast Information Center (NEIC), of the California Historical Resources Information System (CHRIS) a search at the Native American Heritage Commission (NAHC), and a pedestrian surface survey.

The APE is defined to include all ground disturbing activities required for the installation of RSP along the banks of Big Chico Creek at the three repair locations to prevent further erosion of its banks and eventual failure. The Warner Street Bridge APE is approximately 0.85 acres, the Rose Avenue Bridge APE is 0.37 acres, and the Manzanita and Vallombrosa Avenue APE is 0.73 acres, for a total APE area of 1.95 acres.

Background Research

In order to determine the necessary level of historic property identification efforts for the proposed undertaking and to better understand the types of cultural resources likely to be encountered in the APE during subsequent survey, a variety of resources were consulted. Sources included a records search via the California Historical Resource Information System (CHRIS) at the Northeast Information Center (NEIC) in Chico, and literature and historical map review.

A record search request for the Warner Street Bride and Rose Avenue Bridge was submitted to the NEIC (File # NE24-394) on July 16, 2024. The search was conducted by Kyle Piercy, NEIC Senior Research Associate, and results were provided on August 7, 2024. A record search request for the Manzanita and Vallombrosa erosion repair site was submitted to the NEIC (File # NE25-119) on March 13, 2025. The search was conducted by Casey Hegel, NEIC Senior Research Associate, and results were provided on April 14, 2025. The searches examined the National Register, the California Register of Historical Resources (California Register), the Directory of Properties in the Historic Property Data File, the California Historic Landmarks (1996), and the California Inventory of Historic Resources (1976). Additional research efforts conducted outside the NEIC included review of historic USGS topographic and aerial maps, and other pertinent historic data specific to Butte County.

The record search identified one previous survey (NEIC-668) within the Warner Street Bridge APE boundary, and 17 additional reports conducted within the ¼-mile search boundary. For the Rose Avenue Bridge, one previous survey (NEIC-9749) was identified within the APE boundary, with an additional seven reports within a 1/4-mile radius. In total, 35 previous reports were reviewed within

the search boundaries for both bridges. No previously recorded resources were identified within either APE, although 25 resources were noted within the 1/4-mile search radius. For the Manzanita and Vallombrosa erosion repair site, the NEIC identified one previous survey (NEIC-3550) which intersects the northern end of the APE, while 31 additional reports were conducted within the ½-mile search boundary. No previously recorded resources within the APE. A total of 10 resources were reported within the ½-mile search radius.

A review of historic aerial photography, historic USGS topographic maps, and the GLO maps for the repair locations was also conducted. The 1866 and 1967 GLO Plat maps for Township 22 North, Range 1 East contains no relevant information regarding either of the proposed repair locations however the "Road from Shasta to Marysville" travels in a northwest/southeast alignment at this date which is approximately where State Route 99 resides today. The 1867 GLO map provides more details southeast of the two locations, but no additional information is provided regarding the APEs.

For the Warner Street Bridge location, the earliest topographic map available from 1912 indicates that neither the bridge nor Ivy Street were constructed yet. By 1950, Ivy Street is in its current alignment and the bridge is shown crossing over Big Chico Creek. By 1953, CSUC had begun expanding towards the APE and the APE vicinity is largely labeled as part of CSUC's campus. Subsequent maps dating to 1955, 1965, 1968, 1971 show little change to the APE. By 1978, additional buildings associated with CSUC are shown on the northern side of Big Chico Creek. Aerial imagery of Warner Street Bridge dating to 1947 confirms this assessment. The earliest topographic map available for the Rose Avenue Bridge location dates to 1912 and indicates that Rose Avenue had not yet been constructed. It depicts small residences along the north bank of Big Chico Creek. The next available topographic map dating to 1950 shows Rose Avenue in its current alignment in addition to Oak Lawn Avenue and Bidwell Avenue. Early aerial imagery of the APE depicts the bridge, constructed in 1938, with no development immediately surrounding it. Later, in 1947, agricultural plots are shown scattered within the Project vicinity appear to contain orchards of various trees. These ranches consisted of large parcels of land which later became a residential neighborhood with plots of land no larger than an acre (1984). Over the next few decades further expansion of the neighborhood appears northwest of the APE to what is seen today (Historic Aerials 2024).

At the Manzanita and Vallombrosa erosion repair site, the 1869 and 1878 GLO Plat maps for Township 22 North, Range 2 East depict the APE along the border of the Rancho Arroyo Chico with no topographic features delineated within Section 18. Big Chico Creek, named "Chico Creek" on the map, is delineated as the boundary of the Rancho and falls generally along the current creek alignment. Drainages and general topography shading is delineated in the eastern half of the map as well as "Sierra Flume and Lumber Co's Flume", "Little Chico Creek", and Butte Creek". The earliest topographic maps available from 1912 and 1922 indicate that no development had occurred in the immediate Project area yet. By the 1940s, as seen in topo maps and aerial imagery, Manzanita and Vallombrosa erosion repair site are in their current alignment with a few dispersed homes depicted, as well as Bidwell Park to the north. Home density steadily increases from this time, with the area adjacent to the APE becoming densely populated by the 1984 aerial image.

Site Sensitivity

To determine the surface and buried site potential within the APE, a review of geological landforms, soils, previously recorded sites, and modern development were reviewed. The Project vicinity would have been a targeted location of indigenous peoples' activity along Big Chico Creek. While geological mapping indicated that Pleistocene age formations make up the APE, geoarchaeological investigations

by Meyer and Rosenthal (2008) suggest that younger Holocene age deposits may be present. From this assessment and the known previously recorded resources adjacent to Warner Bridge, the overall vicinity may have high surface and buried resource sensitivity.

Modern disturbances at the three locations, however, have been significant. The Warner Bridge location has been disturbed by construction of the original bridge, two adjacent pedestrian bridges in approximately the early 1990s, as well as adjacent construction related to CSUC. At Rose Avenue Bridge, the immediate and surrounding area was disturbed by construction of the original bridge, decades of agricultural activities, and more recently residential development. Furthermore, Project activities will occur primarily within previously disturbed bank and channel areas of the creek and adjacent construction staging will occur on paved surfaces. For these reasons, the potential for the Project to impact intact cultural resource deposits in the APE is low.

At the Manzanita and Vallombrosa erosion repair site, geological mapping indicates that early Pleistocene age formations make up the APE landforms and conform with geoarchaeological investigations by Meyer and Rosenthal (2008) which suggest very low potential to encounter buried archaeological resources within the APE. From this assessment and the known previously recorded resources within the vicinity, the overall vicinity has *low* buried resource sensitivity.

Additionally, modern disturbances, including roadway and trail construction within the APE, have impacted the potential for surface resources. Project activities will occur primarily within Pleistocene-age bank and channel areas of the creek. For these reasons, the potential for the Project to impact intact cultural resource deposits in the APE is *low*.

Native American Consultation

Consultation efforts for the Rose Avenue and Warner Street Bridges included a Sacred Lands File search, which was requested from the NAHC on July 16, 2024. On July 22, 2024, the results returned as negative. A Sacred Lands File (SLF) search was requested from the NAHC on March 13, 2025 for the Manzanita and Vallombrosa Avenue erosion repair site. On March 13, 2025, the results returned as positive.

Pursuant to a 2008 Memorandum of Understanding between the Mechoopda Indian Tribe of the Chico Rancheria and City of Chico, a Project notification outreach effort was conducted in July 2025 and no comments from the Tribe have been received to date. Under Section 106 of the NHPA, USACE is assumed to be responsible for conducting consultation with federally recognized Native American tribes that may have sensitive resources or areas within the APE Project. USACE will be responsible for all outreach and consultation under Section 106.

Field Investigation

On August 23, 2024, archaeologist Gabrielle Zachoszaj, B.A., conducted a ground surface inventory of the APEs for Warner Street Bridge and Rose Avenue Bridge. On May 9, 2025, archaeologist Michelle Campbell, M.A., conducted a ground surface inventory of the APE for the Manzanita and Vallombrosa erosion repair site. Linear pedestrian transects no more than 5 meters apart were used within the APE, to inspect the visible ground surface with the exception of paved surfaces. All cut banks, burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits.

No indigenous or historic-era archaeological resources were identified during the August 23, 2024, pedestrian survey; however, both bridges within the APE are over 50 years old. These bridges have been previously determined as Category 5 not eligible bridges as part of the Caltrans Historic Bridge

Inventory, as concurred upon by the State Historic Preservation Officer (SHPO), which remains valid. No other resources were identified during the pedestrian survey.

Surface visibility throughout the APE varied by location. The Warner Street Bridge location consisted of dense vegetation; however, sections of Big Chico Creek were exposed, especially the sections where erosion damage has occurred, resulting in 0-60% visibility along the banks of the creek. The banks of Big Chico Creek at Rose Avenue Bridge were largely obscured along the southeast, southwest, and northwest by dense vegetation which largely obscured the erosion damage near the southeast abutment of the bridge resulting in 0-10% visibility. Possibly to provide clear access to the metal catwalk adjacent to the northeast abutment, visibility ranged between 0-30% visibility. The remainder of the APE consisted of paved surfaces. At the Manzanita and Vallombrosa erosion repair site, surface visibility throughout the APE varied. Sections of Big Chico Creek were exposed, especially the sections where erosion damage has occurred, resulting in 50-80 percent visibility along the banks of the creek. The upper channel top was densely vegetated with trees, shrubs, and low grass resulting in 10-50 percent visibility. The remainder of the APE consisted of paved or graveled surfaces.

DISCUSSION: E.1. No Impact; E.2–E.3. Less Than Significant with Mitigation Incorporated. Based on a comprehensive review of maps, previous archaeological surveys, and current investigations, the potential for the proposed Project to impact cultural resources that qualify as either historical resources under CEQA or historic properties under the NHPA is considered low. The only cultural resources identified within the APE are two previously evaluated bridges (12C0276 and 12C0325).

The overall finding of this investigation is that no historical or archaeological resources recognized under CEQA were identified within the APE. Accordingly, the Project is not expected to affect any historical resources. While the potential for encountering intact cultural resources during ground-disturbing activities is low, the possibility cannot be entirely ruled out. To address this, Mitigation Measures CR-1 and CR-2 will be implemented to ensure that any inadvertently discovered resources are appropriately managed, thereby reducing potential impacts to **Less than Significant with Mitigation Incorporated**.

MITIGATION:

CR-1: If non-human bones, pottery fragments, or other potential cultural resources are unearthed during construction, the Contractor shall immediately cease work within 25 feet of the resources and notify City of Chico Public Works Engineering at (530) 879-6900. The supervising contractor shall be responsible for reporting any such findings to the Engineer. No work may occur within the 25-foot buffer until a qualified archaeologist has conducted onsite meetings with the Contractor and determined mitigation measures.

CR-2: If human remains are unearthed during construction, the Contractor shall immediately cease work within 100 feet of the remains and notify City of Chico Public Works Engineering at (530) 879-6900, pursuant to Health and Safety Code 7050.5. The supervising contractor shall be responsible for reporting any such findings to the Engineer. No work may occur within the 100-foot buffer until the City has made the necessary findings as to the origins and dispositions of the remains pursuant to the Public Resources Code 5097.98.

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F. Energy

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

AFFECTED ENVIRONMENT: Electric service within the City is provided by Pacific Gas and Electric, which provides electric service to approximately 15 million people throughout a 70,000 square mile service area in northern and central California. Electricity purchased from Pacific Gas and Electric by local customers in Butte County, including Chico, is generated and transmitted to the area by a statewide network of power plants and transmission lines. Various transmission and distribution lines traverse Butte County, serving to carry electrical power from power plants within and outside the county to electrical substations where power is converted to voltages suitable for distribution to end users (City of Chico 2010b). A comprehensive list of goals and policies related to Energy is provided in the Sustainability Element of the City's General Plan (City of Chico 2010a).

DISCUSSION: F.1–F.2. Less Than Significant. RSP will be placed along the areas of scour at all three erosion repair sites to prevent further damage and reinforce the banks and structures to better withstand future storm events. All construction equipment would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation. CARB standards for construction equipment include measures to reduce emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements and imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles, thereby minimizing wasteful energy consumption during construction activities (Impact H.1 and H.2). Project construction would also be required to comply with all applicable BCAQMD rules and regulations.

The Project would adhere to all relevant standards and regulations related to energy conservation and fuel efficiency, ensuring that future activities are as energy efficient as possible. The operation of the

bridges would remain the same, with no increase or change in energy demand or consumption beyond existing levels. As a result, the Project would not lead to wasteful, inefficient, or unnecessary energy use, and the impacts on energy would be ***less than significant***.

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010a. *Chico 2030 General Plan, Sustainability Element*. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Chico-2030-General-Plan/2._sustainability_element.pdf. Accessed: November 26, 2024.

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G. Geology/Soils

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
b. Strong seismic ground shaking?			X	
c. Seismic-related ground failure, including liquefaction?			X	
d. Landslides?			X	
2. Result in substantial soil erosion or the loss of topsoil?		X		
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
5. Have soils incapable of adequately supporting the use of septic tanks or				X

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
alternative wastewater disposal systems where sewers are not available for the disposal of wastewater, or is otherwise not consistent with the Chico Nitrate Action Plan or policies for sewer service control?				
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

AFFECTED ENVIRONMENT: The Project areas are situated in the southwestern area of the City, featuring relatively flat topography with elevation ranges between 185 to 270 feet above sea level. The three Project sites are comprised of one soil type, Vina fine sandy loam, sandy substratum, 0 to 2 percent slopes, MLRA 17 (NRCS 2024). Excavation will occur at all three Project sites, primarily in the banks of Big Chico Creek due to mounded toe RSP installation, as well as around the existing piers and sewer line at Rose Avenue.

DISCUSSION: G.1a–G.1d. Less Than Significant. The Project is not expected to directly or indirectly result in significant adverse effects, such as the risk of loss, injury, or death due to fault rupture, strong seismic ground shaking, seismic-related ground failure, or landslides. Butte County does not contain any Alquist-Priolo Earthquake Fault Zones. The only active fault in the area is the Cleveland Hills Fault, part of the Foothills Fault System, located about 17 miles southeast of the Chico City limits. This system is complex and discontinuous, with most faults being less than 15 miles in length, indicating that any earthquakes along these faults would likely be moderate, with magnitudes not exceeding moment magnitude (Mw) 6.5. Additionally, the fault system exhibits very low rates of activity (Sites Project Authority, 2017). The Cleveland Hills fault is within an Earthquake Fault Zone as mapped by the Alquist-Priolo Earthquake Fault Zoning Act. A large earthquake on the Cleveland Hills Fault could potentially generate strong ground shaking at the Project areas, depending on the earthquake's magnitude and proximity to the City. The August 1975 Oroville earthquake was associated with the Cleveland Hills Fault, which was felt in Chico, but there was no recorded damage. Thus, the potential for ground rupture or damage, injury, or death associated with seismic activity within the Chico area is considered very low. Most of the mapped faults in Butte County are not considered active, and most of them are very short and likely not capable of producing severely damaging earthquakes (City of Chico 2010).

The Project design will incorporate all applicable development standards and comply with all required permits and certifications. Seismic requirements and grading activities will be addressed through adherence to the City of Chico Municipal Code/Grading Ordinance, the California Building Code (CBC), and other relevant construction standards. The City of Chico has adopted the CBC in Chapter 16R.02 of its Municipal Code, mandating that all new development and redevelopment projects meet CBC standards. These standards include design criteria for seismic loading and other geologic hazards, providing guidelines for geologically induced loading, structural member sizing, and calculation methods to support safe and effective design (City of Chico, 2010). Additionally, the CBC outlines engineering practices that require specialized design and construction techniques to minimize or eliminate potential impacts related to expansive soils.

Landslides can be triggered by both natural processes and human activities that lead to slope instability. Butte County has a documented history of landslides, primarily occurring in areas with previous slide

activity. The highest landslide risk is concentrated in the county's mountainous central region, where well-developed soils rest on impermeable bedrock along steep slopes, which are vulnerable during periods of heavy rainfall. Most of the City of Chico has a low to negligible risk of landslides; however, the eastern foothill areas of the City are subject to a moderate to high landslide potential (City of Chico, 2010). The Project areas are situated outside these high-risk zones, resulting in minimal to no landslide risk in the Project vicinity. Therefore, the Project would have a **less-than-significant impact** concerning the risk of loss, injury, or death related to fault rupture, ground shaking, ground failure, or landslides.

G.2. Less Than Significant with Mitigation Incorporated. According to the City of Chico General Plan Safety Element (2011), the Project areas are situated in regions with moderate to highly expansive soils. The Project aims to mitigate soil erosion and enhance bank stabilization along Big Chico Creek. By reinforcing the channel banks, it will effectively reduce soil erosion and prevent topsoil loss, resulting in a positive overall impact on the area. Therefore, the Project is not expected to cause substantial soil erosion, topsoil loss, or issues related to expansive or unstable soils. Additionally, erosion control BMPs—such as installing straw wattles and silt fences—will be implemented before any work begins within Big Chico Creek and its riparian corridor, in accordance with Measure BIO-23 from Section D. Biological Resources. See Section IV.D, *Biological Resources*, of this Initial Study for mitigation measure specifics. This measure would effectively minimize risks related to soil erosion and the loss of topsoil during construction, reducing impacts to **Less than Significant with Mitigation Incorporated.**

G.3-G.4. Less Than Significant. The Project areas are located on relatively flat terrain and are outside areas of high landslide potential and unstable geologic formations. As a result, the likelihood of on- or off-site landslides is considered minimal.

The Project must comply with the City's *Design Criteria and Improvement Standards* (CMC §18R) and incorporate site-specific measures outlined in the CBC grading standards. These standards address unstable soils and soil shrink-swell conditions by requiring appropriate construction methods to mitigate geologic risks. In addition, the City and the BCAQMD mandate the use of all applicable fugitive dust control measures, further limiting the potential for construction-related erosion. Before excavation begins, the City will ensure that the Project incorporates all necessary site-specific construction and design measures in accordance with CMC §18R. Consequently, potential impacts related to erosion, soil stability, and expansive soils would be **less than significant**.

G.5. No Impact. No septic tanks, sewer, or alternative wastewater disposal systems are proposed as part of the Project. Therefore, the Project would result in **no impact** related to consistency with the Chico Nitrate Action Plan or policies for sewer service control.

G.6. Less Than Significant. The Project is not anticipated to cause a substantial adverse change in the significance, directly or indirectly destroy a unique paleontological resource or site, geological feature, or unique geological feature. The excavation depth at Rose Avenue Bridge will generally be 3-4 feet below the current creek bed, but could be up to approximately 12 feet within the northeast bank of Big Chico Creek. At Rose Avenue, bank reshaping for approximately 50 feet on both north and south sides of the creek will occur requiring approximately 2 feet of disturbance. A search of the University of California Museum of Paleontology (UCMP)collections database indicated that 25 sites with the fossilized remains of plants, invertebrates, and mammalian vertebrates have been discovered along Big Chico Creek (University of California, Berkeley, 2009). However, the planned excavation and reshaping activities are shallow in most areas (1-4 feet), with maximum depths of 10 and 12 feet at the Rose Avenue Bridge only. Given the localized nature and limited depth of these disturbances, the potential to encounter surface-level paleontological resources is considered low. If resources are inadvertently

discovered, implementation of mitigation measure CR-1 in Section E. Cultural Resources, would reduce impacts to a less-than-significant level. See Section IV.E, *Cultural Resources*, of this Initial Study for mitigation measure specifics. Therefore, Project impacts related to the significance of a unique paleontological resource or site, geological feature, or unique geological feature would be considered **less than significant**.

MITIGATION: Mitigation BIO-23 in Section IV.D, Biological Resources; **Mitigation CR-1 in Section IV.E, Cultural Resources**

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H. Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

AFFECTED ENVIRONMENT: This section describes the environmental setting related to GHG emissions and climate change. GHG emissions adversely affect the environment by contributing, on a cumulative basis, to global climate change.

Climate change is caused by increasing levels of GHGs in the atmosphere – primarily the result of burning fossil fuels and deforestation. GHGs trap energy from the sun in Earth's atmosphere in a process called the greenhouse effect, which creates conditions warm enough to sustain life on Earth. Increasing emissions of GHGs over time amplifies the greenhouse effect and leads to trapping of dangerous

amounts of heat in the atmosphere that result in global changes in climate patterns. Increases in heat trapped in the atmosphere can result in more intense storms, drought, heat and sea level rise globally.

On a smaller scale, the main sources of GHG emissions in cities are buildings, transportation, waste and water. Local governments policies can influence high-emissions behaviors, mitigate climate change effects and prepare the community for a more resilient future through local land use planning, building standards, and public and private partnerships to develop behavior-changing policies (City of Chico, 2021). In response to the need for climate action, the City has created a Climate Action Plan (CAP) (2012) and CAP Update (2021) which includes specific actions to reduce local GHG emissions and achieve the City's target of carbon neutrality by 2045.

Principal Greenhouse Gases

GHGs consist of both natural and synthetic gases that trap heat in the atmosphere. These include carbon dioxide (CO2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (USEPA, 2025a). The state CEQA Guidelines (§15364.5) also identify these six gases as GHGs. Each GHG is discussed below:

- Carbon dioxide (CO_2) – Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., cement production). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- Methane (CH_4) – Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in solid waste landfills.

- Nitrous oxide (N_2O) – Nitrous oxide is emitted during agricultural, land use and industrial activities; combustion of fossil fuels and solid waste, as well as during treatment of wastewater.

- Fluorinated gases – Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are synthetic, powerful greenhouse gases that are emitted from a variety of household, commercial, and industrial applications and processes. Fluorinated gases are typically emitted in smaller quantities than other greenhouse gases, but are still considered potent greenhouse gases.

Different GHGs affect Earth's warming in varying ways, depending on their ability to absorb energy, known as "radiative efficiency," and their duration in the atmosphere, or "lifetime". Since 1990, the Intergovernmental Panel on Climate Change (IPCC) used the Global Warming Potential (GWP) metric to compare the global warming impacts of different gases. GWP quantifies how much energy the emission of one ton of a specific gas will absorb over a given period, relative to the emission of one ton of carbon dioxide. A larger GWP indicates a greater warming effect compared to carbon dioxide over the same period. By providing a common unit of measure, GWP enable analysts to compare and combine emissions estimates of different gases to compile a national GHG inventory; and aid policymakers in evaluating emissions reduction strategies across sectors and gases (USEPA 2025b). Table H-1 lists the GWP of CO_2, CH_4, and N_2O and their atmospheric lifetimes.

Table H-1. Greenhouse Gases' Global Warming Potential

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)
CO_2	1	100

CH_4	28	12
N_20	273	109

Sources: Center for Climate and Energy Solutions 2020.
CH_4 = methane; CO_2 = carbon dioxide; N_2O = nitrous oxide; ppb =parts per billion; ppm = parts per million

Greenhouse Gas Emission Inventories

At the global level, the IPCC develops comprehensive assessment reports that evaluate the latest scientific knowledge on climate change, including greenhouse gas emissions, their sources, and their impact on the global climate system. These reports synthesize data from multiple scientific studies and provide policymakers with guidance on mitigation and adaptation strategies. The IPCC also produces special reports, methodology guidelines, and technical papers to support international climate policy and decision-making (IPCC 2025).

At the federal level, the EPA develops an annual report called the Inventory of U.S. Greenhouse Gas Emissions and Sinks (Inventory), that tracks greenhouse gas emissions and sinks in the United States by source, economic sector and greenhouse gas data going back to 1990. The gases covered by the Inventory include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. Key findings from the latest Inventory show that emissions increased in 2022 by one percent compared to the previous year, driven largely by an increase in CO_2 emissions from fossil fuel combustion. In 2022, CO_2 emissions from fossil fuel combustion increased by 1 percent relative to the previous year (USEPA, 2024).

At the state level, the CARB is responsible for preparing, adopting, and updating California's greenhouse gas inventory under Assembly Bill (AB) 1803 (2006). The Global Warming Solutions Act of 2006 (AB 32), also tasks CARB with determining the statewide 1990 GHG emission level and approving a statewide greenhouse gas emissions limit, equal to the 1990 level, to be achieved by 2020. CARB has developed many resources to estimate, understand, evaluate, and track greenhouse gas emissions from industrial, mobile, natural, and other sources of emissions (CARB 2025).

Locally, the City of Chico has conducted a GHG emissions inventory of community-wide GHG emissions for each year between 2005 and 2017. The 2017 inventory was used for the 2021 CAP Update as the most up-to-date picture of GHG emissions in Chico. Chico's annual inventories include emissions from gasoline and diesel sales, electricity and natural gas usage in homes, offices, and other residential and commercial buildings, and waste sent to the landfill from all residential and commercial properties. Chico's GHG emissions have decreased 27% overall since 2005, despite a population increase of approximately 27% (City of Chico, 2021).

Table H-2 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential Project-related emissions.

Table H-2. Global, National, State, and Local Greenhouse Gas Emissions Inventories

Emissions Inventory	CO_2e (metric tons per year)
2022 IPCC Global	57,400,000,000
2022 USEPA National	5,489,000,000
2022 CARB State	371,100,000
2017 City of Chico	466,366

Sources: IPCC 2021; USEPA 2022; CARB 2024; City of Chico 2021.

CO_2e = carbon dioxide equivalent; IPCC = Intergovernmental Panel on Climate Change; USEPA = U.S. Environmental Protection Agency; CARB = California Air Resources Board.

The City of Chico's CAP and its Update provide a roadmap for reducing GHG emissions in alignment with the state's target of achieving a 40% reduction below 1990 levels by 2030, as set by Senate Bill (SB) 32. These documents will also contribute to advancing the state's long-term objective of carbon neutrality by 2045, as outlined in Executive Order (EO) B-55-18 (City of Chico, 2021). The development and implementation of the CAP are guided by various goals, policies, and actions outlined in the City's General Plan (Sustainability Element, Land Use Element, Circulation Element and Open Space and Environment Element), as well as relevant state and federal policies. The growth and development assumptions incorporated in the CAP align with the level of development projected in the General Plan EIR. Strategies in the General Plan that will help reduce greenhouse gas emissions include promoting compact, walkable, infill and mixed-use development; focusing redevelopment along transit corridors and at other central locations; promoting the efficient use of energy and resources; improving local air quality; directing waste diversion and reduction; and establishing energy and water conservation measures in building, landscaping, and municipal operations (City of Chico, 2020).

Currently, the BCAQMD has not established thresholds of significance for toxic air contaminants and GHGs, leaving the lead agency to exercise its discretion in making those determinations.

DISCUSSION: H.1–H.2. Less Than Significant. The Project is consistent with the goals, policies and regulations adopted and outlined in the City's CAP and its associated Update, as well as relevant local, state and federal policies. There are no permanent changes that would occur as a result of the proposed Project that would have an impact on GHG emissions. Transportation is one of the main sources of GHG emissions in cities, and the Project will not require permanent changes in traffic patterns, nor would it create additional vehicle trips. Therefore, operational emissions will be negligible compared to existing conditions, and there will be no long-term operational GHG impact.

Construction activities for the Project may lead to short-term emissions of CO_2, CH_4, and N_2O due to the operation of heavy equipment and vehicles. However, given the small scale and short duration of the Project as well as the minimal use of heavy equipment, emissions will be significantly lower compared to larger road or building construction projects. The methodology used to calculate GHG emissions generated during construction is the same as described above for air quality (see Section IV.C, Air Quality). Based on RCEM modeling, these sources would emit a total of approximately 136.27 metric tons (45.15 metric tons from Rose Avenue, 45.56 metric tons from Warner Street, and 45.56 metric tons from Manzanita and Vallombrosa) of carbon dioxide equivalent (MT CO_2e) over the duration of Project construction (Appendix A). As previously stated, BCAQMD does not have an adopted GHG threshold. Emissions are nonetheless far below numeric construction thresholds adopted by other regional air quality districts (e.g., SMAQMD's 1,100 MT CO_2e/year threshold and Placer County Air Pollution Control District's threshold of 10,000 MT CO_2e/year).

The erosion repair work in Big Chico Creek will result in a temporary increase in GHG emissions, primarily in the form of CO_2 due to the use of heavy equipment such as excavators and loaders. These emissions will be short-term and intermittent, without long-term effects on GHG levels. The construction phase will last approximately 6 to 8 weeks, with limited equipment use, thereby minimizing emissions. Given the temporary and small-scale nature of the activities, the overall impact on GHG emissions is considered minor.

Additionally, the construction activities, including the use of heavy-duty vehicles, will not exceed the levels already anticipated, analyzed, and mitigated in the Chico 2030 General Plan EIR. The Project is

also consistent with the development assumptions used in the Chico 2030 General Plan EIR and the City's CAP. Since the Project does not involve new development but rather stabilization of the Big Chico Creek banks to prevent future erosion, it will not impact the City's ability to meet the GHG reduction targets outlined in the CAP.

Based on the analysis above, development of this Project would result in neither a significant impact on the environment, nor conflict with the City's or other agencies GHG plans, policies, or regulations. Implementation of BCAQMD-recommended best management practices, and compliance with City of Chico policies/requirements and BCAQMD rules would further reduce short-term construction GHG emissions. As a result, this impact is considered **less than significant.**

MITIGATION MEASURE: None required.

BCAQMD Best Management Practices for GHG:

To minimize GHG emissions resulting from Project construction, the Project proponent shall implement BCAQMD-recommended best management practices derived from the CEQA Air Quality Handbook, including, but not limited to:

- Improve fuel efficiency from construction equipment:
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than three minutes (a five-minute limit is required by the State Airborne Toxics Control Measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]) and provide clear signage posting this requirement for workers at the entrances to the site;
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated;
- Train equipment operators in proper use of equipment;
- Use the proper size of equipment for the job; and
- Use equipment with new technologies (repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Use alternative fuels for generators at construction sites such as propane or solar or use electrical power.
- Use an Air Resources Board approved low carbon fuel for construction equipment.
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).
- Use locally sourced or recycled materials for construction materials (goal of at least 20% based on volume for roadway, parking lot, sidewalk, and curb materials).
- Minimize the amount of concrete for paved surfaces or utilize a low carbon concrete option.
- Produce concrete on-site if determined to be less emissive than transporting ready mix.
- Use SmartWay certified trucks for deliveries and equipment transport (USEPA 2023).
- Develop a plan to efficiently use water for adequate dust control.

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I. Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

AFFECTED ENVIRONMENT: A search of the State Water Resources Control Board GeoTracker database did not identify any active sites within the Project vicinities of the proposed erosion control activities (SWRCB 2025). The nearest known open cleanup program site to any of the repair sites is the Hunt & Sons Petroleum Spill, located approximately 1,200 feet southwest of the bridge crossing along Warner

Street. Since no Project activities are proposed within the contaminated parcel, there is no potential for the Project to encounter contaminated soils associated with the Hunt & Sons Petroleum Spill cleanup program site and further evaluation or protection measures are not warranted. Furthermore, a review of the California Department of Toxic Substances Control's EnviroStor mapping database did not identify any known sites or facilities being tracked for cleanup, permitting, enforcement, or investigation efforts within or adjacent to the Project areas.

DISCUSSION: I.1 and I.2. Less Than Significant: While hazardous materials would be used during construction activities (e.g., equipment maintenance, fuel, solvents, roadway resurfacing and re-striping materials), all hazardous material use would be required to comply with all applicable local, state, and federal standards associated with the release, handling, and storage of hazardous materials. The Hazardous Materials Regulations, which implement the federal hazmat law, govern the transportation of hazardous materials by highway, rail, vessel, and air. These regulations address hazardous materials classification, packaging, hazard communication, emergency response information, and training. Hazardous materials transported through Butte County, including the Project areas, would be carried by truck on the state highway system or via the rail line. Registered hazardous waste haulers may use all county roadways to transport hazardous materials. To date, regulators have not placed restrictions on roadways available for the transportation of hazardous waste. Refer to Section 4.4 of the City's Draft EIR General Plan 2030 for more information on transportation of hazardous materials in Butte County and additional detail regarding hazardous material regulations (City of Chico 2010). Because Project use, handling, routine transport use, or disposal of hazardous materials during construction would be in accordance with federal, state, and local laws, impacts related to the accidental release of hazardous materials would be **less than significant.**

I.3. Less Than Significant. The Warner Street Bridge is located within the CSUC campus. No other schools are located within a quarter mile of any of the Project sites. Accidental release of hazardous materials at the Warner Street location during construction would be considered a significant impact, however, as discussed in *Discussion 1.1 and 1.2*, there is a low potential for Project construction or operation to cause a significant hazard through transport, use or disposal of hazardous materials. These activities would be required to comply with the regulations, standards, requirements, and guidelines established by federal and state law and overseen by the regulatory agencies. Accordingly, the potential for hazardous materials releases near an existing or proposed school are low. Therefore, the potential for impacts on school facilities would be **less than significant.**

I.4. No Impact. The State of California Hazardous Waste and Substances Site List (also known as the Cortese List) is a planning document used by state and local agencies and by private developers to comply with CEQA requirements in providing information about the location of hazardous materials sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency to annually update the Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list. The Project areas are not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List); therefore, there would be **no impact**.

I.5. Less Than Significant Impact. The Chico Regional Airport is located approximately 4.74 miles north of the Warner Street Bridge, 4.88 miles north of the Rose Avenue Bridge, and 4 miles north of the Manzanita and Vallombrosa site. As such, the Project areas are outside the airport's runway protection zones, safety zones, airspace protection zones, and other designated Airport Influence Areas (AIAs) as

defined by the Chico Regional Airport's Land Use Compatibility Plan. The Ranchaero Airport, a private airstrip, is located about 0.65 miles southwest of the Rose Avenue Bridge, 1.41 miles southwest of the Warner Street Bridge, and 4.8 miles southwest of the Manzanita and Vallombrosa erosion repair site. The Rose Avenue Bridge location falls within the Ranchaero Airport's AIA and is located within Compatibility Zone D. All development and land use actions proposed within the Airport Compatibility Overlay Zone must adhere to the criteria outlined in the Butte County Airport Land Use Compatibility Plan (BCALUCP), except where specific criteria have been overruled by the Board of Supervisors, as per Public Resources Code Section 21676 (BCAG, 2017). Zone D, referred to as the "Other Airport Environs Zone," is characterized by lower noise impacts and reduced safety and airspace protection risks compared to the more restricted zones (A, B, or C). Being beyond the 55-CNEL (Community Noise Equivalent Level) contour, Zone D generally experiences lower noise levels. However, some overflight noise may still occur, which could affect sensitive land uses, such as residential areas, schools, or hospitals (Caltrans Aeronautics, 2011). Since the Project does not propose sensitive land uses (such as large residential developments, hospitals, or schools), there are no factors that could interfere with airport operations or create safety hazards for Project workers or nearby residents. The Project will comply with the BCALUCP, ensuring compatibility with airport operations in terms of safety, noise, and overflight impacts. Therefore, the Project is not expected to result in any safety hazards or excessive noise for individuals residing or working in the Project areas, and impacts related to airport hazards are anticipated to be **less than significant.**

I.6. Less than Significant. The Project would not interfere with an adopted emergency response plan or emergency evacuation plan, including the Butte County Emergency Operations Plan (BCEOP) (Butte County 2022). As outlined in responses to *Transportation Q.1–Q.4*, access along the Warner Street Bridge and the pedestrian bridge west of it will remain open throughout construction. Access along Vallombrosa and Manzanita Avenue will also remain open throughout construction. However, the pedestrian bridge and bike trail east of the Warner Street Bridge will be temporarily closed during project implementation. The Rose Avenue Bridge is expected to experience intermittent closures during construction, but access to adjacent private properties will be maintained at all times. Temporary closures will be short in duration (6 to 8 weeks) and are not anticipated to impact emergency evacuation routes. Emergency access will be preserved throughout construction, and any impacts on ground transportation will be temporary, occurring only during active construction periods. Therefore, impacts with regard to conflict with an adopted emergency response plan or emergency evacuation plan would be **Less than Significant**.

I.7. No Impact. The Project areas are not located in an area of high sensitivity to wildland fire risks per the California Fire Hazard Severity Zone Viewer (CalFire 2024). No buildings or dwelling units are proposed as part of the Project, and the Project areas are not in a wildland area. The Project areas are all identified as areas outside of CalFire's 'Very High Fire Hazard Severity Zone' (i.e., it is a non-VHFHSZ) as identified by CalFire. The Project areas are all located in a Local Responsibility Area (LRA) pursuant to the Fire Hazard Severity Zone. All three erosion repair sites are surrounded by urban uses and the area is within the service area of the City of Chico Fire Department. The Project does not include any design elements that would expose people or structures to significant risk of loss, injury, or death involving wildland fire. Therefore, there would be **no impact** associated with wildland fires.

MITIGATION: None required.

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J. Hydrology/ Water Quality

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?			X	
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
a. result in substantial erosion or siltation on- or off-site;			X	

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
c. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
d. impede or redirect flood flows?			X	
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?			X	
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

AFFECTED ENVIRONMENT: The City of Chico, in the Sacramento Valley, is in the north-central portion of the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles). The City is located approximately 10 miles east of the Sacramento River (City of Chico 2010). The Project areas, located in western Chico, are relatively flat and include two primary hydrologic crossings at Big Chico Creek: the Rose Avenue Bridge and Warner Street Bridge (Appendix C – ARDR). Both crossings and the Manzanita and Vallombrosa erosion repair site fall within the FEMA Special Flood Hazard Area (SFHA) Zone AE. Zone AE is classified as a Base Floodplain, meaning there is a 1% annual chance of flooding, also known as the 100-year flood. In Zone AE, the Base Flood Elevation (BFE) is generally provided for each property, indicating the anticipated height of floodwaters in the event of a 100-year flood. All of the locations at Big Chico Creek are also identified as regulatory floodways under FEMA guidelines. These areas are highly susceptible to flooding, as they are the primary flow channels for floodwaters during a 100-year flood event, representing the highest flood risk.

The Project will involve the installation of a temporary water diversion system within Big Chico Creek at all three repair sites. Once the diversion is established, RSP will be placed along both banks at Rose Avenue, along the northern bank at Warner Street, and along the west bank at Vallombrosa Avenue. Temporary aquatic impacts include approximately 0.01 acres of Big Chico Creek at Rose Avenue, approximately 0.01 acres of Big Chico Creek at Warner Street, and approximately 0.02 acres at the Manzanita and Vallombrosa site due to water diversion headwall installation. In addition, the Project will temporarily impact approximately 0.19 acres of Big Chico Creek at Warner Street due to the temporary water diversion, approximately 0.10 acres of Big Chico Creek at Rose Avenue, and approximately 0.19 acres at Manzanita and Vallombrosa.

DISCUSSION: J.1. Less Than Significant. Water quality for all Sacramento Valley surface and ground waters is regulated under the jurisdiction of the California Regional Water Quality Control Board's Central Valley Region. Prior to work within Big Chico Creek, a 401 Water Quality Certification (WQC) will be obtained from the Central Valley Regional Water Quality Control Board (CVRWQCB), which will contain measures to reduce impacts to water quality. In addition, per Phase II of the NPDES Program, the City has a Storm Water Management Program (SWMP); the Project would be constructed in full

compliance with applicable standards of the SWMP, which includes both construction activity and post-construction storm water discharge BMPs. Therefore, the Project would not violate any waste discharge requirements. Compliance with the SWMP and existing regulations would minimize potential impacts relating to water quality and waste discharge requirements. Therefore, impacts related to surface or groundwater quality would be **less than significant.**

J.2. Less Than Significant. Construction activities related to the installation of RSP along the banks of Big Chico Creek would potentially require temporary dewatering of excavated areas. However, this disturbance would be short-term, and no new long-term sources of groundwater extraction would be introduced. The Project would not significantly affect groundwater recharge or hinder sustainable groundwater management in the basin. Therefore, the Project would have **a less than significant impact** on groundwater supply or rechange.

J.3a–J.3d. Less Than Significant. The Project would involve installation of RSP along the banks of Big Chico Creek, which will add 1,200 sq ft of new impervious surface at Rose Avenue, 2,600 sq ft of impervious surface at Warner Street, and 4,800 sq ft of impervious surface at Manzanita and Vallombrosa. However, this is not anticipated to substantially alter the existing drainage pattern of the sites, as RSP will be installed specifically in areas that have already experienced significant scour and erosion. These areas are typically characterized by excessive water flow, which causes soil loss and destabilizes the bank. The primary objective of the RSP is to stabilize these banks and prevent further erosion, rather than to change or redirect the natural flow of the creek. By placing RSP only in areas that are already prone to erosion, the Project is essentially reinforcing the existing conditions rather than altering the natural hydrology. The rocks used for RSP will be carefully placed to follow the contours of the existing creek bank, allowing water to flow as it naturally would, but in a more controlled manner to prevent further erosion. The material itself, though generally impervious, will not significantly disrupt the flow of water because it is designed to prevent soil movement without obstructing the creek's natural drainage.

Furthermore, the Project would not alter the existing drainage patterns at the site, result in substantial erosion or siltation on- or off-site, or create excessive runoff because prior to construction the Project would have to demonstrate compliance with City and State post-construction storm water management requirements including the General Construction Permit requirements of the NPDES and the requirements listed in the 401 WQC. With the application of the existing regulations outlined above, the Project would not substantially degrade water quality drainage systems or provide substantial additional sources of polluted runoff. Under existing City and State requirements for the Project to implement BMPs and incorporate low impact development design standards, stormwater impacts from anticipated future construction and operation of the Project would be **less than significant**.

J.4. Less Than Significant. Although all the Project areas are located within FEMA-designated SFHAs, no significant risk of pollutant release due to inundation is anticipated. The Project areas do not contain any known pollutants or hazardous materials that would be susceptible to release in the event of flooding. SFHAs, particularly those identified as Zone AE (base floodplain), indicate areas with a 1% annual chance of flooding, but these zones do not inherently contain hazardous or pollutant-generating materials unless specifically noted. The Project areas, as currently understood, do not store materials such as chemicals, fuels, or industrial waste that could pose a risk in the event of a flood or tsunami. Additionally, standard BMPs during Project implementation, including containment and safety measures, would ensure that any materials brought to the site are stored and handled in a manner that minimizes the risk of contamination during extreme weather events, including flooding. Given that the Project does not involve the storage of hazardous substances in flood-prone zones, the risk of pollutant

release due to inundation is negligible. As a result, the Project is expected to have minimal or no impact on water quality from pollutants in the event of flooding. Therefore, this impact would be **less than significant**.

J.5. Less Than Significant. The Project is not expected to substantially degrade water quality with the implementation of BMPs and all permit requirements from the CVRWQCB. The Project would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, the Project would have **a less than significant impact.**

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010. Draft EIR Chico 2030 General Plan. Section 4.9 Hydrology and Water Quality. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.9hydrologyandwaterquality.pdf. Accessed: December 2, 2024.

Federal Emergency Management Agency (FEMA). 2024. *FEMA Map Service Center.* Available: https://msc.fema.gov/portal/home. Accessed: December 2, 2024.

K. Land Use and Planning

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Physically divide an established community?				X
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

AFFECTED ENVIRONMENT: The proposed Project was identified in the City of Chico's Capital Improvement Program (City of Chico 2023) and is consistent with the City of Chico 2030 General Plan.

DISCUSSION: K.1. No Impact. All construction activity would be temporary and short in duration (6 to 8 weeks). By enhancing the safety and longevity of these critical crossings, the Project will improve accessibility for both pedestrians and motorists who rely on the bridges for daily travel. Rather than causing division, the Project will support community connectivity by maintaining vital infrastructure and mitigating risks associated with flooding and erosion. Therefore, the Project is not anticipated to divide an established community and will have **no impact**.

K.2. No Impact. The proposed erosion repair Project would not result in a significant environmental impact due to conflict with any land use plan, policy, or regulation. The Project aligns with the City of Chico 2030 General Plan, particularly its goals of maintaining public infrastructure and minimizing environmental risks. By addressing erosion along critical creek banks, the Project contributes to reducing flood risks and ensuring long-term stability in areas susceptible to soil loss. Specifically, the Project complies with policies in the General Plan that prioritize flood risk reduction and environmental stewardship. By stabilizing eroded banks, it mitigates future risks of sedimentation and flooding, which could otherwise impact water quality and downstream infrastructure. Furthermore, the Project avoids introducing new incompatible uses or altering existing land use patterns, ensuring adherence to land

use regulations aimed at environmental protection. Through these efforts, the Project is both consistent with and supportive of the City's broader objectives to enhance community resilience to natural hazards while preserving environmental quality. Therefore, the Project would have **no impact** on land use.

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010. Draft EIR Chico 2030 General Plan. Section 4.1 *Land Use*. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.1landuse.pdf. Accessed: December 2, 2024.

City of Chico. 2023. *Capital Improvement Program FY 2023-2024*. Available: https://chico.ca.us/documents/Departments/Administrative-Services/Finance/Annual%20Budget/2023-24-City-of-Chico-Capital-Improvement-Program.pdf. Accessed: December 2, 2024.

L. Mineral Resources

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

AFFECTED ENVIRONMENT: There are no active mines and no known areas of mineral resource deposits within the City of Chico, although historically several areas along Butte Creek were mined for gold, sand, and gravel. Most of the closest mining operations are located to the southeast, outside of the City (City of Chico 2010). Refer to page 9, section 4.8, Geology and Soils of the Draft EIR Chico 2030 General Plan for complete information regarding mineral resources in the City of Chico.

DISCUSSION: L.1–L.2. No Impact. Mineral resources are not found in significant quantities within the City of Chico, nor are they present at either of the Project areas. As a result, the Project would have ***no impact*** on mineral resources.

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010. Draft EIR Chico 2030 General Plan. Section 4.8, *Geology and Soils*. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.8geologyandsoils.pdf. Accessed: December 2, 2024.

M. Noise

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
2. Generation of excessive groundborne vibration or groundborne noise levels?			X	
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

AFFECTED ENVIRONMENT: The City of Chico 2030 General Plan Update Draft Environmental Impact Report (General Plan EIR) documents existing noise levels in Chico, including monitored noise data and major noise sources. This information is primarily used to evaluate potential land use compatibility issues (City of Chico 2010).

DISCUSSION: For this Project, the potentially affected noise-sensitive uses, including those with defined outdoor activity areas, consist of single-family residences located along Rose Avenue and Bidwell Avenue, as well as Plumas Hall on the CSUC campus. Plumas Hall is located approximately 60 feet north of the proposed repairs along Warner Street within Big Chico Creek. The nearest private residence to the Rose Avenue location is approximately 40 feet southeast of the proposed repairs within Big Chico Creek. At the Manzanita and Vallombrosa erosion repair site, the nearest sensitive receptor is a private residence approximately 150 feet northwest of the planned repair work. The Project areas are surrounded by developed and built-up suburban land uses. The ambient noise within the Project areas are all generated primarily by vehicles traveling on several roadways, including SR 32 and W. 1st Street. All three Project areas also encompass areas of open space consisting of Big Chico Creek and its associated riparian corridor.

The magnitude of sound, whether wanted or unwanted, is usually described by sound pressure (a dynamic variation in atmospheric pressure). The human auditory system is sensitive to fluctuations in air pressure above and below the barometric static pressure. These fluctuations are defined as sound when the human ear is able to detect pressure changes within the audible frequency range.

To better accommodate and assess the varying noise levels typically associated with traffic patterns, a time-averaged, single-number descriptor known as the Level equivalent (Leq) is frequently employed. The Leq, expressed in decibels (dB), represents the average energy content of sounds over a specified time. The A weighting filter (dBA) is commonly used to create a scale more compatible with human perceptions of sound. It includes both steady background sounds, transient, and short-term sounds. It represents the level of a steady sound which, when averaged over the sampling period, is equivalent in energy to the time-varying (fluctuating) sound level over the same period.

Table M-1 shows typical equipment noise levels for various construction equipment and activities, including measured sound levels at a distance of 25 and 50 feet from the source. Noise sources associated with Project construction would include excavation, construction truck traffic, and other noises typically associated with a construction site.

Table M-1. Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) @ 25 Feet from Source[a]	Actual Measured Lmax @ 50 feet from Source (dBA)
Excavators	**87**	81
Scrapers	**90**	84
Loaders/Backhoes	**85**	79
Air Compressors	**84**	78
Generator Sets	**87**	81
Pumps	**87**	81
Chainsaw	**90**	84

Source: Federal Highway Administration 2006.
[a] Values that exceed the limit of 83 dBA at 25 feet, per City of Chico Municipal Code Section 9.38.060, are bolded and underlined.

M.1. Less Than Significant with Mitigation Incorporated. During the construction phases of the Project, noise from construction activities will intermittently dominate the surrounding area of active work. Construction noise is subject to municipal regulations, including those set forth by the City of Chico. As all construction activities must adhere to relevant noise generation regulations, compliance with existing noise attenuation standards will help minimize impacts related to construction-generated noise.

Temporary or intermittent increases in noise levels are expected during construction activities within and adjacent to Big Chico Creek at all three erosion repair sites. The Project is expected to last approximately 6 to 8 weeks, meaning the noise impacts will be short-term and periodic. Elevated noise levels will primarily occur during specific construction phases, including clearing and grubbing, excavation and grading, and the placement of RSP. The intensity of the construction noise will fluctuate based on site conditions, daily activities, and the type and number of equipment being used. For this Project, an excavator and a skid-steer loader are the only pieces of heavy equipment which are expected to be utilized at all three locations, thereby limiting the extent of heavy equipment noise. To further reduce noise impacts, construction activities will comply with relevant noise regulations, such as maintaining equipment in good working condition and restricting noise-generating operations to designated working hours.

Project construction would generate noise that could affect sensitive receptors within the Project vicinity. The FHWA defines a noise-sensitive receptor as a property where frequent outside human use occurs and where a lowered noise level would be beneficial. Nearby noise-sensitive receptors include residences near Rose Avenue and CSUC near Warner Street. The nearest sensitive receptor to Warner Street is Plumas Hall on the CSUC campus, located approximately 60 feet north of the proposed repairs within Big Chico Creek. The nearest sensitive receptor to Rose Avenue is about 40 feet southeast of the proposed repairs. At the Manzanita and Vallombrosa erosion repair site, the nearest sensitive receptor is a private residence approximately 150 feet northwest of the planned repair work.

The City of Chico's Noise Ordinance in Chapter 9.38 of the City's Municipal Code states, "…no person shall produce, suffer or allow to be produced on public property by human voice, machine, animal, or device, or any combination of same, a noise level that exceeds sixty (60) dBA at a distance of 25 feet or more from the source" (City of Chico 2024). Per Section 9.38.060, construction-related source noise is exempt from the provisions set forth in the noise ordinance except "(i) individual pieces of equipment shall not exceed 83 dBA at a distance of 25 feet; (ii) the construction-related noise must not exceed 86 dBA at any point outside of the property plane of the Project; and (iii) construction noise-generating activities are restricted to the hours of 7:00 a.m. to 9:00 p.m., Monday through Saturday and 10:00 a.m. to 6:00 p.m. on Sunday and holidays" (City of Chico 2024).

Although sensitive receptors are generally further than 25 feet from all Project sites, construction equipment may operate within 25 feet of existing noise-sensitive land uses in the Project area. During construction, the two loudest pieces of equipment that may operate at one time would be an excavator and chainsaw as well as an excavator and skidsteer loader. At a distance of 25 feet, construction equipment is expected to produce a maximum noise level of up to 90 dBA, and an average noise level of approximately 85 dBA, depending on the construction phase. The maximum and average noise levels and the two loudest pieces of equipment for each phase are shown in Table M-2. The Project will involve minimal heavy equipment use, primarily a skid-steer loader and an excavator, with only one piece of equipment in operation at a time. Other equipment, such as generators, temporary water diversion equipment (including pumps, sandbags, coffer dams, and pipes), and chainsaws, will be used during specific phases of the Project. Chainsaws will be employed for clearing and grubbing, while temporary water diversion equipment will remain in use throughout construction until the water diversion is removed.

Table M-2. Construction Phase Noise Levels

Construction Phase	Combined Noise Level (dBA) 25 Feet from Source	Two Loudest Pieces of Equipment
Grubbing/Land Clearing	L_{max}: **90**	Chainsaw
	L_{eq}: 82	Excavator
Grading/Excavation	L_{max}: **87**	Loader
	L_{eq}: 80	Excavator

Source: Federal Highway Administration 2006.

[a] Values that exceed the limit of 86 dBA at the property line, per City of Chico Municipal Code Section 9.38.060, are bolded and underlined.

As shown in Table M-2, noise levels from individual pieces of construction equipment would exceed the 83 dBA limit at 25 feet, as specified in Section 9.38.060 of the City's municipal code. However, because most sensitive receptors are located farther than 25 feet from the Project areas, they would experience lower noise levels than those listed in Table M-2. Portions of these receptors may be within 25 feet of the construction site or experience short-term increases in noise above ambient levels. Nevertheless, noise levels during construction are not expected to continuously exceed the municipal code limit of 86 dBA, as indicated in Table M-2.

Construction noise will be further minimized due to the limited duration of the work and the small, localized impact area. Each Project area is under one acre, which means construction-related noise will be confined to a small area, avoiding significant disturbances to the surrounding community. Sensitive receptors located within 25 feet of the Project areas may experience 25-foot construction noise for short periods of time during the working days. Overall, heavy-duty equipment noise from Project construction

would be temporary, localized and intermittent, with the total Project duration estimated at 6 to 8 weeks across all three locations. However, noise levels may exceed City of Chico limits during construction. To mitigate these impacts, **Mitigation Measure M.1** will be implemented to minimize and avoid significant construction-related noise impacts. With the implementation of Mitigation Measure M.1, construction noise impacts exceeding established standards would be reduced to ***less than significant*** levels.

After construction is completed, the operational phase of the Project would begin, which would be limited to standard bridge inspections and maintenance. Project operations would not result in noticeable changes to the ambient noise environment, because there would be no above-ground sources of noise.

M.2. Less Than Significant. Three types of receivers can be adversely affected by groundbourne vibrations, including people, structures and equipment. Groundbourne vibrations in residential or sensitive environments can cause discomfort or annoyance to people, and may disrupt normal activities such as working, sleeping or studying. Vibrations can also cause damage to structures, especially those that are old, fragile or not well maintained. Finally, groundborne vibrations also have the potential to disrupt the operation of vibration sensitive research and advanced technology equipment (Caltrans 2020).

The duration and amplitude of groundbourne vibrations generated by construction and maintenance equipment varies widely depending on the type of equipment and the purpose for which it is being used. Construction of this Project will mainly involve groundbourne vibrations from excavation equipment, including an excavator and loader, which generally have a low amplitude and longer, continuous duration of vibrations. The construction of the Project will not involve the installation of piles or the use of equipment that generates high amplitude, short duration vibrations. Vibration impacts during construction were assessed using the vibration modeling methods recommended by the U.S. Department of Transportation. The maximum anticipated vibration levels have been calculated and compared to the Caltrans Vibration Guidelines for Damage and Annoyance, as outlined in Tables M-3 and M-4.

Table M-3. Caltrans Vibration Guidelines for Potential Damage to Structures

	Maximum Peak Particle Velocity (PPV, in/sec)	
Structure Type and Condition	**Transient Sources**	**Continuous/Frequent Intermittent Sources**
Extremely fragile historic buildings	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2020.
Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV = peak particle velocity.

Table M-4. Caltrans Guidelines for Vibration Annoyance Potential

Human Response	Maximum PPV (in/sec)

	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2020.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity.

Table M-5 summarizes typical vibration levels generated by construction equipment at a reference distance of 25 feet and at intervals up to 100 feet. Table M-5 focuses on the types of equipment included in the Federal Transit Administration's guidance that are anticipated to be included in the Project's equipment fleet. However, additional equipment may be represented by the equipment in this table. For example, an excavator and a loader, which would be used for Project construction, would result in similar vibration levels as those indicated for a large bulldozer.

Table M-5. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet
Large bulldozer	0.089	0.032	0.017	0.011
Loaded trucks	0.076	0.027	0.015	0.010

Source: Federal Transit Administration 2018.

PPV = peak particle velocity.

A large bulldozer, representing an excavator and loader, would produce the highest vibration level of about 0.089 in/sec PPV at a distance of 25 feet. Loaded trucks, which may be used during construction, would generate a vibration level of about 0.076 in/sec PPV. Rubber-tired vehicles are not typically associated with substantial groundborne vibration. As noted above, the shortest anticipated distance between the Project work areas and existing noise-sensitive land uses is 25 feet. This level of vibration would be below the damage threshold of 0.1 in/sec PPV for fragile buildings.

In general, groundborne vibration is a concern almost exclusively inside buildings. Although the motion of the ground may be perceived outdoors, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. Therefore, outdoor use areas are not considered to be sensitive to groundborne vibrations (Caltrans 2020). Operation of heavy construction equipment during construction could result in intermittently perceptible levels of groundborne vibration in the immediate vicinity of sensitive land uses near the Project areas. As discussed above, the nearest sensitive receptor to Warner Street is Plumas Hall on the CSUC campus, located approximately 60 feet away from the disturbance area. While the nearest sensitive receptor to Rose Avenue is a private residence located approximately 40 feet away from the disturbance area. However, construction is not expected to exceed the Caltrans criterion of 0.04 in/sec PPV for annoyance from distinctly perceptible vibration for a sustained period. While occasional vibration from an individual excavator or loader may exceed the distinctly perceptible threshold at each Project area, it would remain below the strongly perceptible threshold. Such vibration events would be infrequent, with a maximum predicted vibration level of 0.089 in/sec PPV occurring at a distance of 25 feet.

Use of heavy equipment during construction of the Project would be temporary and would cease once construction is complete. Because the types of equipment scheduled for use in the Project area work areas would not produce vibration levels in excess of the Caltrans guidelines for damage or strongly perceptible vibration, and operation of the Project would not generate excessive levels of vibration, this impact would be **less than significant**.

M.3. Less Than Significant. The Ranchaero Airport is located approximately 0.65 miles southwest of the Rose Avenue Bridge, 1.41 miles southwest of the Warner Street Bridge, and 4.8 miles southwest of the Manzanita and Vallombrosa erosion repair site. The Rose Avenue Bridge falls within the Ranchaero Airport's AIA and is situated in Compatibility Zone D. Zone D, or the "Other Airport Environs Zone," is characterized by lower noise levels and reduced safety and airspace protection risks compared to the more restricted zones (A, B, or C). This zone is located beyond the 55-CNEL contour, which indicates that noise levels in Zone D are generally lower than those in closer zones (Caltrans Aeronautics, 2011). While the Project areas are within two miles of Ranchaero Airport, the Warner Street Bridge is outside the AIA, and the Rose Avenue location is within the AIA but in Zone D. Zone D is known for its reduced noise impacts, meaning that people residing or working within the Project area would not be exposed to excessive noise levels. As such, the noise levels in this area are not expected to exceed thresholds that would significantly affect the health or well-being of individuals in the vicinity of the Project, and potential noise impacts related to airports will be **less than significant**.

MITIGATION:

NOI-1: To avoid substantial construction-period noise impacts to nearby sensitive receptors, the best practices listed below will be implemented during Project construction.

- Use of heavy equipment shall be limited to hours allowed by the City: 7:00 a.m. to 9:00 p.m. Monday to Saturday, and 10:00 a.m. to 6:00 p.m. on Sunday.
- Stationary equipment (e.g., generators, compressors, cement mixers, idling trucks) shall be located as far as possible from noise-sensitive land uses.
- Construction equipment powered by gasoline or diesel engines shall be required to have sound control devices that are at least as effective as those originally provided by the manufacturer; all equipment shall be operated and maintained to minimize noise generation.
- Excessive noise shall be prevented by shutting down idle vehicles or equipment.
- Noise-reducing enclosures shall be used around noise-generating equipment.
- Adjacent residents shall be notified in advance of construction work.

REFERENCES CITED:

Butte County. 2010. Butte County General Plan Draft EIR. Available: https://www.buttecounty.net/DocumentCenter/View/1883/General-Plan-2030-EIR-Public-Review-Draft-PDF?bidId=. Accessed: January 6, 2025.

California Department of Transportation. 2020. *Transportation and Construction Guidance Manual*. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed: January 6, 2025.

California Department of Transportation, Division of Aeronautics (Caltrans Aeronautics). 2011. *California Airport Land Use Planning Handbook*. Available: https://dot-drp.dot.ca.gov/-/media/dot-

media/programs/aeronautics/documents/californiaairportlanduseplanninghandbook-a11y.pdf. Accessed January 6, 2025.

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City of Chico. 2024. Chico, California Code of Ordinances. Division VI. Offenses Against Property, Chapter 9.38, Noise. Available: https://codelibrary.amlegal.com/codes/chico/latest/chico_ca/0-0-0-7601#JD_Chapter9.38. Accessed: January 6, 2025.

Federal Highway Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. September. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: January 6, 2025.

———. 2006. Roadway Construction Noise Model User's Guide. January. Available: https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf. Accessed: January 6, 2025.

N. Population and Housing

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

AFFECTED ENVIRONMENT: The proposed Project was identified in the City of Chico's Capital Improvement Program (City of Chico 2023) and is consistent with the City of Chico 2030 General Plan. None of the locations are identified as Special Planning Areas in the General Plan.

DISCUSSION: N.1. No Impact. The purpose of the Project is to repair bank scour along Big Chico Creek at two bridge crossing locations within the City in order to enhance safety and reduce flood risk during future large storm events. The Project does not include the construction of new homes, businesses, or infrastructure; therefore, it would not contribute to unplanned population growth. Employees involved in the Project will work temporarily in the City and will not relocate permanently. Upon completion, these workers will transition to other job sites requiring their skills. Consequently, the Project's construction activities would not lead to an unplanned increase in the City's population.

Project operations would not induce direct population or housing growth on the Project areas because the primary function of the Project is to reinforce the banks of Big Chico Creek to prevent further erosion. Refer to Section 4.3 of the Draft EIR Chico 2030 General Plan for detailed information regarding the City's plan and policies regarding population and housing (City of Chico 2010). No existing housing

or residents will be displaced by the Project. Since the Project will not directly or indirectly cause population growth beyond what is anticipated in the City's 2030 General Plan, it will have **no impact** on population growth.

N.2. No Impact. The Project would not displace any residents or housing units as there are no housing units directly on the Project areas. Project construction may require temporary lane closures that could affect driveways and residential roads, but these would be temporary closures, with access ensured at all times apart from this. Access along the Warner Street Bridge as well as the pedestrian bridge located west of the bridge will remain open throughout construction. However, the pedestrian bridge and the bike trail located east of the Warner Street Bridge will temporarily close during Project implementation. The Rose Avenue Bridge is anticipated to be closed intermittently during construction. Access for residents living south of the Rose Avenue Bridge will be maintained through Oak Park Avenue, south of the proposed repairs. Access at Vallombrosa Avenue and Manzanita Avenue will remain open throughout construction. Therefore, the Project would have no direct impact related to the displacement of housing units or people, nor would the Project necessitate construction of replacement housing elsewhere that could result in physical environmental effects. There would be **no impact** on housing.

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report, Section 4.3 *Population and Housing*. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.3pophousingemployment.pdf. Accessed: December 3, 2024.

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O. Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?				X
b. Police protection?				X
c. Schools?				X
d. Parks?				X
e. Other public facilities?				X

AFFECTED ENVIRONMENT:

Fire Protection

The Chico Fire Department (CFD) provides fire protection and emergency medical services to a 31-square-mile service area that includes the City of Chico. CFD services include fire suppression, emergency medical service, rescue service, hazardous material emergencies service, public assists fire prevention and life safety, and emergency preparedness including operation of the Emergency Operations Center at the Fire Training Center. The CFD has mutual aid agreements with the California Department of Forestry and Fire Protection and the Butte County Fire Department. In areas not covered by the Chico Urban Area Fire and Rescue Agreement, Butte County and the Chico Fire Department can still call each other for backup "mutual aid" in addition to their first due response engine. Refer to Section 4.12, Page 5, 6, and 10 of the City's Draft EIR 2030 General Plan which provides a complete list of relevant policies and strategic plans related to Fire Protection Services in the City of Chico.

Police Protection

The Chico Police Department (CPD) provides law enforcement services to the City of Chico. If requested by the Butte County Sheriff's Office or the California Highway Patrol, the CPD may provide assistance in the surrounding unincorporated territory on a case-by-case basis. While the CPD service area comprises the Chico City limits, the department also provides law enforcement services to the unincorporated parts of the Chico urban area daily. Refer to Section 4.12, Pages 16 through 20 of the City's Draft EIR 2030 General Plan which provides a complete list of relevant policies and strategic plans related to Protection Services in the City of Chico.

Schools

Founded in 1887 as the Northern Branch of the California State Normal School, CSUC is the second-oldest campus in the California State University (CSU) system. Initially established to train teachers, it evolved over time to offer a broad array of undergraduate and graduate programs. The institution was renamed Chico State Teachers College in 1921, then Chico State College in 1935, and finally California State University, Chico in 1972, reflecting its expansion into a comprehensive university. Located in downtown Chico, California, the campus is known for its historic buildings, proximity to Bidwell Park, and a strong commitment to sustainability and community engagement. Today, Chico State serves as a hub for higher education in Northern California, fostering academic excellence and innovation across diverse disciplines.

DISCUSSION: O.1–O.5. No Impact.

Fire Protection

The CFD currently operates six fire stations. The closest fire station to the Project areas is Chico Fire Station #1 located at 842 Salem Street, which is approximately 0.68 miles southeast of the Warner Street Bridge, approximately 1.39 miles southeast of the Rose Avenue Bridge, and approximately 3.7 miles southwest of the Manzanita and Vallombrosa erosion repair site. The Project involves installing erosion control along bank scour at three locations in Big Chico Creek. It will not physically modify fire protection facilities, create a need for new facilities, or alter emergency routes or evacuation plans. As a result, it will not affect service ratios, response times, or other performance objectives related to fire protection or emergency services.

Police Protection

The Chico Police Department located at 1460 Humboldt Road is approximately 1.80 miles northeast of the Warner Street Bridge, approximately 2.60 miles northeast of the Rose Avenue Bridge, and 2.60 miles southwest of the Manzanita and Vallombrosa erosion repair site. As outlined in Section IV.Q, Transportation, of this Initial Study, access across both bridges and adjacent roadways will be maintained throughout construction, ensuring that emergency services and routes remain uninterrupted.

Schools

The Warner Street Bridge is situated on the Chico State University campus, while the Rose Avenue Bridge is located approximately 0.70 miles west of the campus. Additionally, Rosedale Elementary School is located approximately 0.70 miles east of the Rose Avenue Bridge. The nearest school to the Manzanita and Vallombrosa erosion repair site is Sierra View Elementary School approximately 1.2 miles to the southwest. Since the scope of the Project is limited to installation of RSP along the banks of Big Chico Creek, it will not contribute to population growth in the area or increase the demand for school services. No new roads or infrastructure is proposed as part of the Project.

Parks

The impacts on parks and recreational facilities are addressed in Section IV.P, *Recreation*, of this Initial Study. Overall, the Project would not result in a direct increase in population, changes in land use, or increased traffic capacity or volumes that would affect or require alteration to fire, police, schools, parks and recreation facilities. Once the Project is completed, roadways, bicycle paths and pedestrian walkways along the Project alignments would be restored to their existing conditions. Therefore, the Project would have **no impact** on public services.

MITIGATION: None required.

REFERENCES CITED:

California State University Chico. 2024. Our History. Available: https://www.csuchico.edu/traditions/history/index.shtml. Accessed: December 3, 2024.

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report. Section 4.12. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.12publicservicesandutilities.pdf. Accessed: December 3, 2024.

P. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
2. Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

AFFECTED ENVIRONMENT: Park, recreation, and open space resources, facilities, and services in Chico are provided by both the City of Chico Park Division and the Chico Area Recreation and Park District. The City of Chico currently maintains a total of 4,317 acres of park, recreation, and open space areas. For more detailed information about parks and recreation, refer to Section 4.12 of the City's Draft EIR for the 2030 General Plan (City of Chico 2010). While there are no parks located within or adjacent to the Rose Avenue or Warner Street Bridges, Big Chico Creek and its riparian corridor are present at both bridge locations, offering opportunities for recreational activities within the City. In addition, there is an existing Class II bike lane along the Warner Street Bridge. The Manzanita and Vallombrosa erosion repair site is located within a five-mile recreational area associated with Lower Bidwell Park and is the site of recreational use.

DISCUSSION: P.1 and P.2. Less Than Significant Impact. The Project does not involve activity that would lead to a direct increase in population, nor does the Project include the development of recreational facilities or other structures that would necessitate the development or modification of any recreational facilities. There are no park resources located within or adjacent to the Rose Avenue or Warner Street Bridges. The closest park to the Warner Street Bridge is Children's Park, approximately 0.35 miles northeast of the Project area, and the nearest park to the Rose Avenue Bridge is Oak Way Park, located about 0.72 miles northwest of the Project area. The Manzanita and Vallombrosa erosion repair site is located within a five-mile recreational area associated with Lower Bidwell Park and is the site of recreational use.

The erosion control work for the Project, including the installation of RSP within Big Chico Creek and associated riparian habitat, is not expected to increase public use of the surrounding open space or contribute to the physical deterioration of recreational resources. Instead, the placement of RSP will stabilize the banks of Big Chico Creek, enhancing safety for recreational users. The proposed repair at Manzanita and Vallombrosa would remove a public safety hazard and improve the safety of recreational users at the site. The existing Class II bike lane on the Warner Street Bridge will remain open during construction, with no anticipated impacts to its operation. No additional recreational facilities are located within the Project vicinity that could be affected by the proposed work, and the Project does not require the construction or expansion of recreational facilities that could have an adverse environmental impact.

Big Chico Creek and its associated riparian corridor provide open space recreation opportunities for local residents at both bridge locations and near the Manzanita and Vallombrosa erosion repair site. Permanent and temporary impacts to riparian habitat are discussed in Section IV.B, *Biological Resources*. Although these impacts are minimal, the installation of RSP is essential for reducing flood risk within the City and improving the safety and stability of the creek system to prevent future erosion. Overall, the Project would not generate demands on other parks and recreational facilities such that it would cause substantial physical deterioration of the facility to occur or be accelerated. Overall, the Project would have a **less-than-significant** impact on recreation**.**

MITIGATION: None required.

REFERENCES CITED:

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report, Section 4.12.8. *Parks and Recreation.* Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.12publicservicesandutilities.pdf. Accessed: December 3, 2024.

Q. Transportation

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
2. Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
4. Result in inadequate emergency access?			X	

AFFECTED ENVIRONMENT: Project activities consist of site preparation, installation of temporary water diversion and/or dewatering system, grading and excavation, installation of rock slope protection, removal of temporary water diversion and/or dewatering system, demobilization & site cleanup, and post-construction revegetation. Project construction activities would occur along portions of roadways that provide access to the community.

DISCUSSION: Q.1–Q.4. Less Than Significant. Access along the Warner Street Bridge as well as the pedestrian bridge located west of the bridge will remain open throughout construction. Access along Manzanita Avenue and Vallombrosa Avenue will also remain open throughout construction. However, the pedestrian bridge and the bike trail located east of the Warner Street Bridge will temporarily close during Project implementation. The Rose Avenue Bridge is anticipated to be closed intermittently during construction. Access for residents living south of the Rose Avenue Bridge will be maintained through Oak Park Avenue, south of the proposed repairs. Ultimately, emergency access would be maintained throughout construction, and all impacts on ground transportation would be temporary and exist only during construction. Therefore, the Project would have a less than significant impact with regard to conflict with an adopted emergency response plan or emergency evacuation plan, including the BCEOP (Butte County 2022).

The proposed Project is not expected to generate additional traffic, as it does not involve the construction of any facilities, whether residential, commercial, or otherwise. The Project would not conflict with any relevant plans, ordinances, or policies related to the circulation system, nor would it interfere with a congestion management program, alter air traffic levels, or affect air traffic patterns. No permanent modifications or design changes would be made to existing roads, and there would be no above-ground structures associated with the Project. In terms of traffic and transportation, the proposed Project would result in a **less-than-significant impact**.

MITIGATION: None required.

REFERENCES CITED:

Butte County. 2022. Butte Operation Area Emergency Operations Plan. Available: https://www.buttecounty.net/DocumentCenter/View/7071/2022-Butte-County-EOP-PDF?bidId=. Accessed December 5, 2024.

City of Chico. 2010.Chico 2030 General Plan Update Draft Environmental Impact Report, Section 4.5. *Traffic.* Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.5traffic.pdf.

R. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

AFFECTED ENVIRONMENT: The APEs are classified as areas of High Sensitivity on the Archaeological Sensitivity Areas Map in the Chico General Plan. The APEs are located within the traditional boundaries of the Konkow, or Valley Maidu tribe. Historically, the Konkow inhabited a large geographic area that encompassed the Sacramento River and east to the Sierra/Cascade canyons and foothills east of Chico. Local to the Chico area are the people of Mechoopda. The ancestral village of the Mikćapdo was located on Little Butte Creek, less than 4 miles south of downtown Chico. The people of Mechoopda survived based on strategies, technologies and knowledge associated with a "hunting and gathering" economy. Today, the Mechoopda Indian Tribe is a federally recognized tribe comprised of 560 Tribal Members and governed by a Tribal Council elected by the General Membership (Mechoopda Indian Tribe 2024).

*Settlement*s

Settlement patterns of the Konkow are “village communities” (Kroeber 1925) and an individual village community was autonomous and consisted of several, smaller, villages. The center village often displayed the largest *ḱúm* (a semisubterranean earth-covered lodge) which was used as a ceremonial assembly chamber (Riddell 1978). The center village most likely was the home of the “most authoritative man of the village community” (Kroeber 1925) and used the *ḱúm* as his primary residence. This “high authority” man was more of an advisor than appointed or inherited leader, smaller surrounding villages were self-sufficient and were not bound by strict laws (Riddell 1978).

The surrounding villages contained approximately seven houses, and each home was estimated to house roughly 5 people and combined most likely did not exceed an estimated 200 inhabitants (Riddell 1978). In the winters, the Konkow primarily resided within deep canyons and along the Feather, Yuba, or American rivers and in the summer months men often went into the mountains for hunting where dried deer meat was brought back to the villages for winter months (Riddell 1978).

Subsistence

An annual food gathering cycle of the Konkow consisted of processed acorn meat, grass seeds (like wild rye), roots, and fish. In the summers, the Konkow went into the mountains to hunt deer and other fauna which was then brought back to the village to dry for consumption in the winter months. In the spring, grasses and seeds were collected in local valleys by both woman and children. In the winter, the Konkow primarily stayed within their village and ate food from their stores. Other sources of food include yellow jacket larvae, angleworms, locusts, grasshoppers, crickets, eels, salmon. In Konkow culture, the first caught salmon of the season was a common cause for celebration and ceremony. The shaman would prepare the fish, and each man would consume a piece once it was cooked (Riddell 1978). This often triggered an emphasis on fishing as a food source.

Clothing and Adornment

Animal hides were used to make clothing, accessories (such as headbands and belts), and sinew for tools (Riddell 1978). Different than the Maidu, Konkow men were mostly naked in the summers and women wore apron skirts (Riddell 1978). For colder climate, robes made of deer or mountain lion skin was draped over the shoulders for warmth when necessary. Hair was commonly worn shorter than the Maidu and men were known to even pluck their beard and mustache hairs. Women commonly pierced their ears and men often pierced their septum and often adorned them with woodpecker feathers and scalps. These accessories were commonly made of shell, bone, feathers, and wood (Dixon 1905).

Technology

Konkow tools for hunting include knives, spears, and bows and arrows (Riddell 1978). Hard black basalt was harvested and used primarily for making knives and spears which was fastened to a handle or wooden staff then secured with pitch or sinew (Riddell 1978). Obsidian was obtained primarily from trade with neighboring communities and used mostly for arrow heads (Riddell 1978).

Basketry was used as an art and a necessity in storying and collecting food. The Konkow used a simple twining, and designs were worked in with multiple colors from redbud, willow, and pine root dyed black with charcoal (Dixon 1905). The Konkow employed a diagonal twining for burden baskets and weave in designs using different colored materials.

Tule leaves were commonly used to make mats, seats, beds, skirts, rafts, roofing, and doors (Kroeber 1925). These leaves could also be turned into twine and used to make baskets and bags.

DISCUSSION: R.1a–R.1b. Less Than Significant with Mitigation Incorporated. A Tribal Cultural Resource is a site feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe. According to Butte County constraints mapping, the APEs are in an area considered to have a high archaeological sensitivity. Often, cultural resources are found in foothill areas, areas with high bluffs, rock outcroppings, areas overlooking deer migratory corridors, or near bodies of water. The APEs are in the Sacramento Valley and have been extensively disturbed by residential and transportation infrastructure development.

No prehistoric or historic-era sites have been recorded or otherwise identified within the APE boundaries on records maintained at the NEIC. The NAHC has no record of Sacred Land listings within, adjacent or close to the APE. The data file and determinations of effect for the Office of Historic Preservation also failed to document resources in the Project. Lastly, the California Inventory and Historic and General Land Office maps failed to identify potential historic resources within the APE.

Consultation with Interested Parties: The NAHC identified no sacred lands within the APE (response date July 22, 2024 for Rose Avenue and Warner Street Bridge, March 13, 2025 for Manzanita and Vallombrosa erosion repair site). Pursuant to a 2008 Memorandum of Understanding between the Mechoopda Indian Tribe of the Chico Rancheria and City of Chico, a Project notification outreach effort was conducted prior to circulation and no comments from the Tribe have been received to date. Under Section 106 of the NHPA, USACE is responsible for conducting consultation with federally recognized Native American tribes that may have sensitive resources or areas within the APE Project. USACE will be responsible for all outreach and consultation under Section 106.

The Project is not anticipated to cause a substantial adverse change in the significance of a tribal cultural resource. In the event that resources are inadvertently discovered, implementation of **Mitigation Measure CR-2** would reduce impacts to **Less than Significant with Mitigation Incorporated.**

MITIGATION:

CR-2: If human remains are unearthed during construction, the Contractor shall immediately cease work within 100 feet of the remains and notify City of Chico Public Works Engineering at (530) 879-6900, pursuant to Health and Safety Code 7050.5. The supervising contractor shall be responsible for reporting any such findings to the Engineer. No work may occur within the 100-foot buffer until the City has made the necessary findings as to the origins and dispositions of the remains pursuant to the Public Resources Code 5097.98.

REFERENCES CITED:

Dixon, R. B. 1905. The Northern Maidu. *Bulletin of the American Museum of Natural History* 17(3):119-346. New York.

Kroeber, A. L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Washington, D.C. Reprinted in 1976 by Dover Publications, Inc., New York, New York.

Riddell, F. A. 1978. Maidu and Konkow. In California, edited by R.F. Heizer, pp.370-386. Handbook of North American Indians, Vol. 8, W.C. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

S. Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction				X

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
or relocation of which could cause significant environmental effects?				
2. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
3. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?				X
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

AFECTED ENVIRONMENT: The City's collection system consists of sewer mains, trunk sewers, lift stations, and flow diversions that collect and convey wastewater to the City's Water Pollution Control Plant (WPCP), which is located west of the City on Chico River Road. The City's existing sanitary sewer collection system is comprised of roughly 283 miles of gravity collection system pipes up to 39-inches in diameter.

The majority of solid waste generated in the City of Chico is disposed of at the Neal Road Recycling and Waste Facility, which is owned by Butte County and operated by the Butte County Public Works Department. Located at 1023 Neal Road in unincorporated Butte County, approximately 7 miles southeast of Chico, the facility spans 190 acres, with 140 acres dedicated to solid waste disposal. The Neal Road Recycling and Waste Facility is permitted to accept municipal solid waste, inert industrial waste, demolition materials, and special wastes, including tires, non-friable asbestos shingles and siding, and uncontaminated dirt and other construction debris (Butte County, 2024).

DISCUSSION: S.1. No Impact. The Project involves erosion repair activities at three locations along Big Chico Creek and would not require or result in the relocation or construction of new or expanded water, stormwater drainage, electric power, natural gas, or telecommunications facilities. The Project would not alter wastewater requirements or result in an increase in wastewater generation. No utility updates are required in association with the Project, nor would the Project require or result in the construction of other facilities, or expansion of existing facilities, beyond those included and analyzed in this document. Therefore, there would be **no impact**.

S.2. No Impact. The Project would not contribute to population growth or increase demand for water supplies and, therefore, there would be **no impact** related to water supply.

S.3. No Impact. The Project is limited to erosion control work and does not involve activities, facilities, or population increases that would produce additional wastewater. The existing WPCP in the City has adequate capacity to handle existing commitments, and since the Project will not generate additional wastewater, no changes to the provider's infrastructure or operations are necessary. Therefore, there would be **no impact**.

S.4–S.5. Less Than Significant. The Project would not produce solid waste beyond State or local standards, nor would it exceed the capacity of local waste management infrastructure or hinder progress toward solid waste reduction goals. During construction, only a limited amount of waste would be generated, which would be sent to permitted landfills with sufficient capacity for construction waste. The Project would not result in a long-term source of solid waste requiring disposal. Materials generated by the erosion repair activities would be managed and disposed of in compliance with all applicable Federal, State, and local regulations. Therefore, impacts related to solid waste would be **less than significant**.

MITIGATION: None required.

REFERENCES CITED:

Butte County. 2024. Dumping Guidelines. Available: https://www.buttecounty.net/917/Dumping-Guidelines. Accessed: December 3, 2024.

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report. Section 4.12, *Public Services and Utilities*. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.12publicservicesandutilities.pdf. Accessed: December 3, 2024.

City of Chico. 2023. *Capital Improvement Program FY 2023-2024*. Available: https://chico.ca.us/documents/Departments/Administrative-Services/Finance/Annual%20Budget/2023-24-City-of-Chico-Capital-Improvement-Program.pdf. Accessed: December 2, 2024.

T. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

AFFECTED ENVIRONMENT: The Project areas are identified as an area outside of CalFire's 'Very High Fire Hazard Severity Zone' (i.e., it is a non-VHFHSZ) (CalFire 2024). The Project areas are not located in or near any state responsibility areas but are located within a LRA (CalFire 2024).

DISCUSSION: T.1. No Impact. Access will remain along both bridges and Manzanita and Vallombrosa Avenue throughout the duration of construction, and emergency evacuation routes will remain intact. The Project is not anticipated to impair any adopted emergency response plan or emergency evacuation plan, including the Butte County Emergency Operations Plan and the Community Wildfire Protection Plan. Therefore, there would be **no impact**.

T.2. No Impact. The Project, which involves stabilizing the banks of Big Chico Creek, would not exacerbate wildfire risks or expose Project occupants to pollutant concentrations from wildfires. The Project areas are located in riparian areas, which naturally reduce fire spread due to moisture-retaining vegetation and soil. While slope and prevailing winds can influence wildfire behavior in upland areas, these factors are mitigated by the dense vegetation and the Project's locations near the creek. Additionally, the Project does not involve the development of permanent structures or an increase in population density, meaning there are no long-term occupants who would be exposed to wildfire-related pollutants. Workers would be present only temporarily and could evacuate, if necessary, further reducing any associated risk. The Project areas are in a LRA pursuant to the Fire Hazard Severity Zone and is served by the City of Chico Fire Department as shown in the State Responsibility Area map. The construction of the proposed Project would take place in accordance with the policies and procedures laid out in the City of Chico General Plan Draft EIR. Refer to Section 4.4 of the Draft EIR Chico 2030 General Plan for a complete list of general plan policies related to preventing wildfire risks and hazards. Therefore, there will be **no impact** from the Project on wildfire hazards or related pollutant exposure.

T.3. No Impact. The Project does not require installation or maintenance of infrastructure that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. The Project involves the installation of RSP on the banks of Big Chico Creek, which is unlikely to directly exacerbate fire risk, as the materials are typically composed of non-combustible materials such as geotextiles, rocks, concrete and soil. Therefore, there would be **no impact**.

T.4. Less Than Significant Impact. The proposed erosion repair Project at Big Chico Creek involves installation of RSP, riparian tree and shrub removal as well as installation and removal of a temporary water diversion system. While vegetation removal in the riparian zone and the installation of the temporary water diversion may cause minor and short-term changes to slope stability or runoff dynamics, these effects are not expected to result in long-term impacts on flooding, landslides, post-fire slope instability, or drainage patterns. The installation of RSP will stabilize the creek banks and mitigate future erosion reducing long-term risks of instability and sedimentation. However, it will also slightly increase impervious surface area—by approximately 2,600 square feet at the Warner Street Bridge, 1,200 square feet at the Rose Avenue Bridge, and 4,800 feet at the Manzanita and Vallombrosa erosion

repair site—potentially contributing to a minor increase in runoff entering the creek. To counteract these effects, the project will incorporate erosion control BMPs during construction and the City will either purchase mitigation credits from a mitigation bank if available, or fund a riparian restoration project at the Big Chico Creek Ecological Reserve to offset the loss of riparian trees, per measure BIO-3 and BIO-24, from the Project's BA. With these measures in place, the project is not anticipated to expose people or structures to significant risks and will instead provide long-term stability and ecological benefits to the creek system. Impacts would be **Less than Significant**.

MITIGATION: None required.

REFERENCES CITED:

CalFire. 2024. SRA Fire Hazard Severity Zone Map. Effective April 1. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed December 3, 2024.

City of Chico. 2010. Chico 2030 General Plan Update Draft Environmental Impact Report. Section 4.4, Human Health Risk of Upset. Available: https://chico.ca.us/documents/Departments/Community-Development/Planning-Division/General-Plan--Other-Planning-Documents/Draft-EIR-Chico-2030-General-Plan/4.4humanhealthriskofupset.pdf. Accessed: December 4, 2024.

U. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
2. Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
3. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

DISCUSSION: U.1–U.3. Less-Than-Significant. As outlined in Section I.K. Project Description, the proposed Project is designed to fulfill objectives set forth in the Chico 2030 General Plan, including Policy OS-2.5, which aims to preserve and enhance Chico's creeks and riparian corridors for their aesthetic, drainage, habitat, flood control, and water quality values. Additionally, Goal S-2 of the General Plan focuses on minimizing risks to life and property from flooding and inundation (City of Chico 2011). The Project was also included in the City of Chico's Capital Improvement Program for the years 2023-2024 as Project Number 50497 (City of Chico 2023).

Based on the analyses in Sections D and E (Biological and Cultural Resources), the Project is not expected to significantly degrade the quality of the environment or substantially reduce wildlife habitats. It will not cause fish or wildlife populations to drop below self-sustaining levels, nor will it threaten to eliminate any plant or animal communities or restrict the range of rare or endangered species. The potential impacts on biological resources, such as fish or wildlife populations, are expected to be minimal, especially with the implementation of mitigation measures. These measures will ensure that the Project does not threaten to eliminate any plant or animal communities and/or reduce the range of endangered species. Additionally, no significant adverse effects on historical or prehistoric resources are anticipated, as identified in the Cultural Resources section.

While the Project may have short-term, localized environmental impacts, these are not expected to be cumulatively considerable when considered alongside the effects of past, present, and future projects. The incremental effects of this Project are minimal and would not add substantially to the environmental burden in the area. The application of mitigation measures will ensure that potential impacts related to aesthetics, biological resources, cultural resources, geology/soils, noise, and tribal

cultural resources will remain less than significant, which will prevent significant cumulative impacts from occurring. Therefore, when evaluating the Project within the broader context of regional development, its environmental effects are not expected to contribute to any cumulative environmental degradation.

Finally, the Project will not cause significant adverse effects on human beings, either directly or indirectly. The analyses conducted for aesthetics, biological resources, cultural resources, geology/soils, noise, and tribal cultural resources have shown that any impacts can be mitigated through the implementation of existing regulations and identified mitigation measures. These measures will prevent any substantial harm to human health, safety, or quality of life. By aligning with the City of Chico's goals for flood control and environmental preservation, the Project also supports community well-being and reduces public health risks. Therefore, consistent with the Chico 2030 General Plan and incorporating the mitigation measures identified in earlier sections of this IS/MND, the Project will result in **Less than Significant Cumulative Impacts with Mitigation Incorporated**.

Appendix A: Road Construction Emissions Model (Version 9.0.1) Estimates

Appendix B: Biological Assessment

Appendix C: Aquatic Resource Delineation Report

Appendix D: Cultural Resources Inventory Report