Initial Study and Mitigated Negative Declaration

ROAD M ½ REHABILITATION AND RECONSTRUCTION PROJECT

Orland, California

Lead Agency:

City of Orland
815 Fourth Street
Orland, California 95963

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

55 Hanover Lane
Suite A
Chico, California 95973

November 2023

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DRAFT MITIGATED NEGATIVE DECLARATION

Lead Agency:	City of Orland
Project Proponent:	City of Orland
Project Location:	The Project Site is in the City of Orland, in Glenn County, California. The Project Site corresponds to a portion of Section 21, Township 22 North, and Range 3 West (Mount Diablo Base and Meridian) of the Kirkwood, California" 7.5-minute quadrangle (USGS 1958, photo revised 1978), The approximate center of the site is located at latitude 39.445680º and longitude -122.102387º.

Project Description:

The Project is a road rehabilitation project. Road M ½ will undergo reconstruction to improve the appearance and function of the road. Improvements include a complete reconstruction of the roadway surface, new curb and gutter, improvement in utilities function, and a new sidewalk on the west side of the road with ADA-approved ramps on the west side portion of Road M 1/2 at the intersections of East Tehama Street, Bryant Street, and East Walker Street (SR 32). Additionally, a new box culvert will be installed at the north end of Road M ½, along the westside of the existing box culvert to extend its width to allow for a wider crossing over Lateral 40 of the Orland Unit Water Users Association (OUWUA).

Public Review Period: to be determined.

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

BIO-1 – The Project will implement erosion control measures and BMPs to reduce the potential for sediment or pollutants at the Project site. Measures may include:

- Erosion control measures will be placed between Waters of the U.S., and the outer edge of the staging areas, within an area identified with highly visible markers (e.g., construction fencing, flagging, silt barriers) prior to commencement of construction activities. Such identification and erosion control measures will be properly maintained until construction is completed and the soils have been stabilized.
- Fiber rolls used for erosion control will be certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control will not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org/) and will be composed of native species appropriate for the site.
- Trash generated onsite will be promptly and properly removed from the site.
- Any fueling in the upland portion of the Study Area will use appropriate secondary containment techniques to prevent spills.
- A qualified biologist will conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special status species to occur on the Project site. The training will provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for non-compliance.

BIO-2 – To protect nesting birds, no Project activity shall begin from February 1 through August 31 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds and raptors, including bald eagle.

- All Nesting Birds - Within 14 days prior to construction (or less if recommended by CDFW), survey for nesting activity of birds within each Project work area and a 100-foot radius. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Raptors (including bald eagle) – Within 14 days prior to construction, survey for nesting activity of birds of prey within each Project work area and a 500-foot radius. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

Cultural Resources

CUL-1: **Cultural or Archaeological Resource Discovery.** All construction plans and grading plans shall include the following:

If subsurface deposits believed to be cultural or human in origin are discovered during any roadway or future construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City and landowner. If the find is determined to be eligible for inclusion in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR), the City shall consult on a finding of eligibility and implement appropriate treatment measures. Work may not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Glenn County Coroner (in accordance with § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work

radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Orland Planning Department and construction lead*

Geology and Soils

GEO-1: Paleontological or Sensitive Geologic Resource Discovery.

If paleontological or other geologically sensitive resources are identified during any phase of development including roadway development and future developments on the Project Site, the applicant shall cease operation at the site of the discovery and immediately notify the City. The future Project proponent shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less than significant level. In considering any suggested mitigation proposed by the qualified paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the development site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Orland and construction lead*

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Attachment 4.13 – Noise Model Data Outputs, Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Description
°F	Degrees Fahrenheit
AB	Assembly Bill
ADT	Average Daily Trips
AF	Acre-feet
AMSL	Above mean sea level
APE	Area of Potential Effect
APN	Assessor's Parcel Numbers
AQAP	Air Quality Attainment Plan
bgs	Below ground surface
BMPs	Best Management Practices
BRE	Biological Resources Evaluation
C-2	Community Commercial
CAA	Clean Air Act
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH_4	methane
CHL	California Historical Landmark
CHRIS	California Historical Resources Information System
City	City of Orland
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Carbon dioxide equivalent
County	Glenn County
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Places
CWA	Clean Water Act

Acronym/Abbreviation	Description
dB	Decibel
dBA	Decibel is A-weighted
DEIR	Draft Environmental Impact Report
DOC	Department Of Conservation
DOE	California Department of Education
DOF	Department of Finance
DPM	Diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
ECHO	Enforcement and Compliance History Online
EIR	Environmental Impact Report
EO	Executive Order
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GCAPCD	Glenn County Air Pollution Control District
GCTC	Glenn County Transportation Commission
GCWMRA	Glenn County Waste Management Regional Agency
GHG	Greenhouse Gas
gpd	Gallons per day
gpm	Gallon per minute
HUE	Housing Unit Equivalent
I-5	Interstate 5
IS/MND	Initial Study/(Mitigated) Negative Declaration
kv	Kilovolt
L_{eq}	Measure of ambient noise
LOS	Level of Service
mgd	Million gallons per day
MLD	Most Likely Descendent
MRZ	Mineral Resource Zone
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NDMC	National Drought Mitigation Center
NEIC	Northeastern Information Center
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
NO_x	nitrogen oxides
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	Northern Sacramento Valley Planning Area

Acronym/Abbreviation	Description
O_3	Ozone
OPD	Orland Police Department
OPR	Office of Planning and Research
OUSD	Orland Unified School District
OVFD	Orland Volunteer Fire Department
PG&E	Pacific Gas & Electric Company
PI	Plasticity Index
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
ppm	Parts per million
PPV	Peak particle velocity
PRC	Public Resources Code
Project or Proposed Project	Road M ½ Rehabilitation and Reconstruction Project
psi	Pounds per square inch
R-1	Residential One-Family
R-L	Low-Density Residential
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
USACE	United States Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
UCMP	University of California Museum of Paleontology
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled

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1.0 BACKGROUND

1.1 Summary

Project Title:	Road M ½ Rehabilitation and Reconstruction Project
Lead Agency Name and Address:	City of Orland 815 Fourth Street Orland, California 95963
Contact Person and Phone Number:	Scott Friend, City Planner (530) 865-1608
Project Location:	The Proposed Project is located on Road M ½, running north to south between Bryant Street and SR 32 in the City of Orland, California. The Project Site corresponds to a portion of Section 21, Township 22 North, and Range 3 West (Mount Diablo Base and Meridian) of the Kirkwood, California" 7.5-minute quadrangle (USGS 1958, photo revised 1978), The approximate center of the site is located at latitude 39.445680º and longitude -122.102387º.
General Plan Designation:	Low-Density Residential (R-L)
Zoning:	Community Commercial (C-2), Residential One-Family (R-1)

1.2 Introduction

The City of Orland (City) is the Lead Agency for this Initial Study/Mitigated Negative Declaration (IS/MND), which has been prepared to identify and assess the anticipated environmental impacts of the proposed Road M ½ Rehabilitation and Reconstruction Project (Project or Proposed Project) and mitigate potentially significant environmental effects. This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], § 21000 et seq.) and State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of Projects over which they have discretionary authority before acting on those Projects. A CEQA IS/MND is generally used to determine the potentially significant environmental affects and mitigate those to be less than significant.

1.3 Surrounding Land Uses/Environmental Setting

Surrounding land uses include several single-family homes fronting Road M ½ on both sides, the building formerly used as the Butte College Glenn County Branch (now County office building), and Greg's Heating and A/C along the southern segment of the Project Site. To the south across CA Highway 32 is Super Shopper Auto Sales Inc. with a single- and multi-family neighborhood and vacant land beyond. To the north of the Project Site is Bryant Street and vacant land beyond.

Road M ½ The Project Site is flat with elevations ranging from 243 feet to 250 feet above mean sea level (AMSL) over the 0.25-mile Site. No natural waterways such as rivers or creeks exist in the Project Site. A

surface grade culvert (a narrow-width bridge structure) crosses over an irrigation canal (Lateral 40) at the northernmost portion of the Project Site at the Road M ½ and Bryant Street intersection. The Project Site is an existing 2-lane roadway through a residential neighborhood.

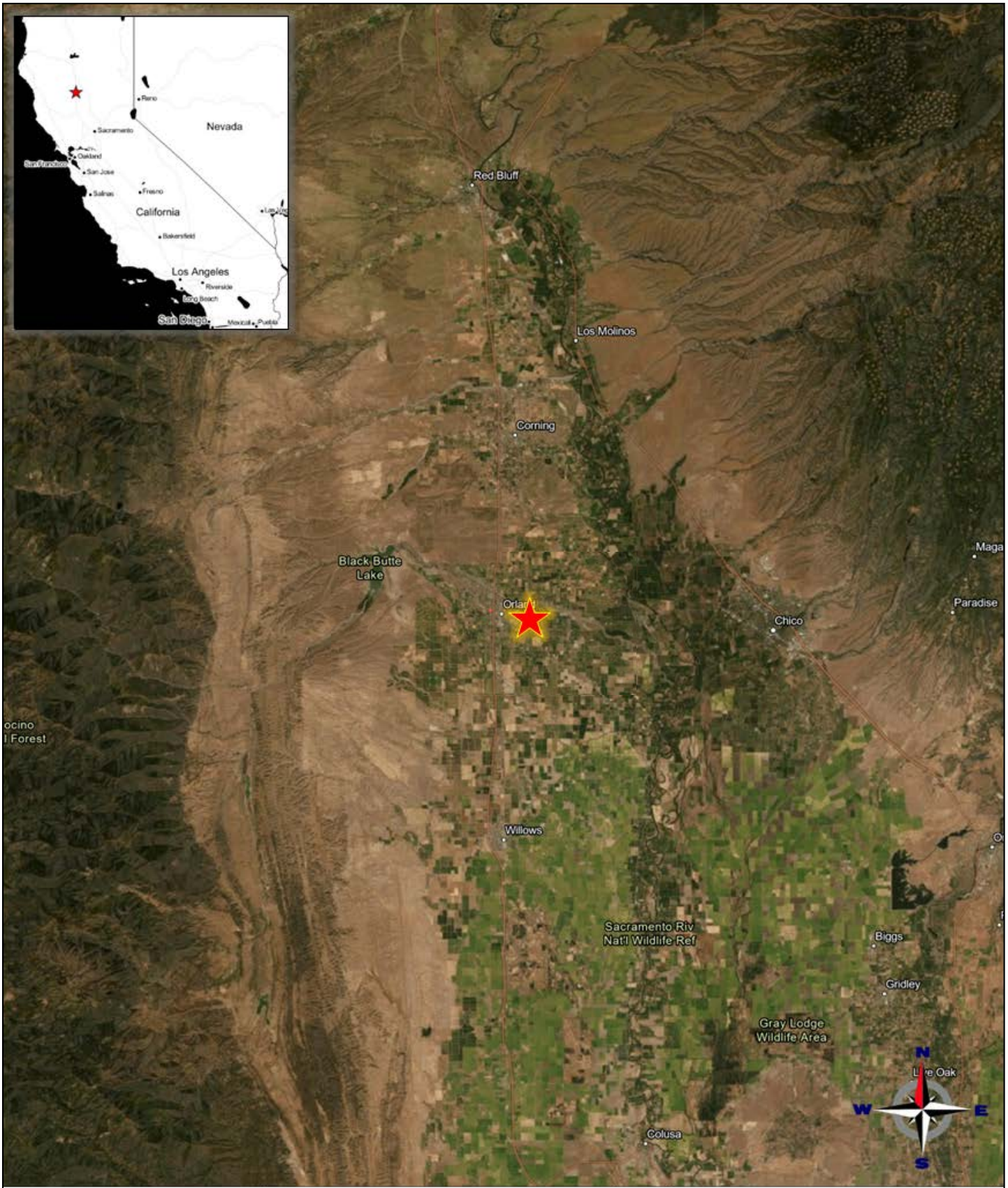

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Figure 1. Regional Location
Road M1/2 Rehabilitation and Reconstruction Project

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Figure 2. Project Location
Road M1/2 Rehabilitation and Reconstruction Project

Project Site

Surrounding Land Use Areas

- Single-Family Residential
- Vacant Land
- Agricultural Land
- Commercial
- Shools

N W E S

1:2,100

0 0.01 0.03 0.06 mi

0 0.03 0.06 0.11 km

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9/15/2022

Figure 3. Surrounding Land Uses
Road M 1/2 Rehabilitation and Reconstruction Project

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2.0 PROJECT DESCRIPTION

2.1 Project Characteristics

The Proposed Project involves the partial demolition and reconstruction of Road M ½. The existing two-lane road is approximately 25 feet wide and 0.25-mile long. The Project Site would be approximately a 1.0 linear-acre site and includes improvements including the full reconstruction of the roadway, installation of or placement of utilities underground (water and sewer lines currently exist underground, overhead electric lines to be placed underground), storm drain infrastructure, and new curb, gutter, and sidewalk on the west side. The existing gas, electric, cable, and telephone lines will remain in place. The Project will also involve the partial reconstruction of the Orland Unit Water Users Association (OUWUA) Lateral 40 canal. A new three-sided full-span pre-cast box culvert would be constructed at the north end where Road M ½ intersects with Bryant Street to widen the existing canal crossing to a full two-lane roadway width. The proposed box culvert extension would span the full width of the existing irrigation lateral to avoid any disruption to the current canal flow to the extent feasible. A water main will cross under Lateral 40 and tie into the existing main located under Bryant Street.

1. Reconstruction of the existing asphalt road surface and road subgrade.
2. Rehabilitation of the roadway in its entirety including underground infrastructure, curbs, gutters, sidewalks, and ADA-approved ramps at four corners along the western side of Road M ½ (at the intersections of East Tehama Street, Bryant Street, and East Walker Street).
3. Widening of the existing surface grade crossing over Lateral 40.
4. Water main and services to be installed with Department of Water Resources (DWR) drought relief water project; balance of water services to be installed (but not connected to houses) with M ½ Project; water main will connect to existing main in Road M ½, extend across OUWUA Lateral 40 and connect to existing water main in Bryant Street.
5. Sewer main has already been installed; sewer laterals would be installed to the Right of Way (ROW) line with M ½ Project.
6. Storm drain conveyance piping and leach trenches.
7. Electric, cable & telephone: will remain overhead on utility poles; the curb to be "bulbed" out around two poles to avoid relocation.
8. Gas to remain at its current location and is not intended to conflict with the proposed improvements.

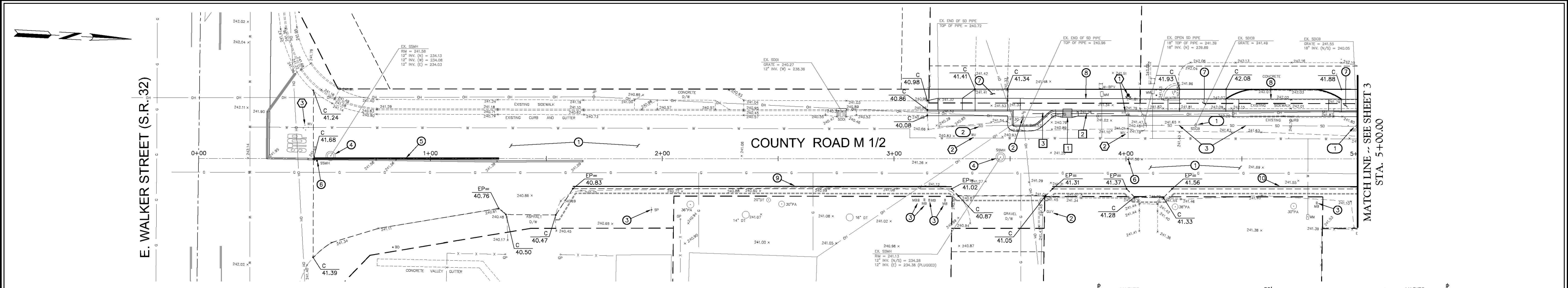
2.1.1 Construction

Construction activities associated with the Proposed Project would require grading, earthwork, excavation, and concrete work. Project construction will also involve utility connections, installation of signage, and painting of pavement striping and markings. Construction is anticipated to begin in summer and/or fall of 2024.

2.2 Regulatory Requirements, Permits, and Approvals

The following approvals and regulatory permits would be required for implementation of the Proposed Project:

- Endangered Species Act
- California Endangered Species Act
- Caltrans Encroachment Permit
- United States Bureau of Reclamation Encroachment Permit
- National Pollutant Discharge Elimination System Construction Permit



DEMOLITION NOTES

1. REMOVE AND DISPOSE OF EXISTING STORM DRAIN CATCH BASIN
2. REMOVE AND DISPOSE OF ±36 LF OF EXISTING 12" DIA. CONCRETE STORM DRAIN PIPE
3. REMOVE AND DISPOSE OF ±93 LF OF EXISTING 18" DIA. CONCRETE STORM DRAIN PIPE

STORM DRAIN CONSTRUCTION NOTES

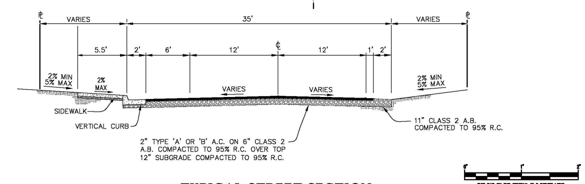
1. INSTALL CITY OF ORLAND STD. 401 TYPE "A" DROP INLET, FL= XXX.XX, 12" INV.= XXX.XX
2. INSTALL 20 LF 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000
3. INSTALL 15 LF 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000

WATER CONSTRUCTION NOTES

1. RELOCATE EXISTING FIRE HYDRANT PER CITY OF ORLAND STD. 301 AND INSTALL ±7 L.F. 6" DIA. CL. 200 C900 PVC WATER PIPE
2. ADJUST WATER VALVE LID TO FINISH GRADE
3. PROTECT EXISTING WATER VALVE CLUSTER IN PLACE

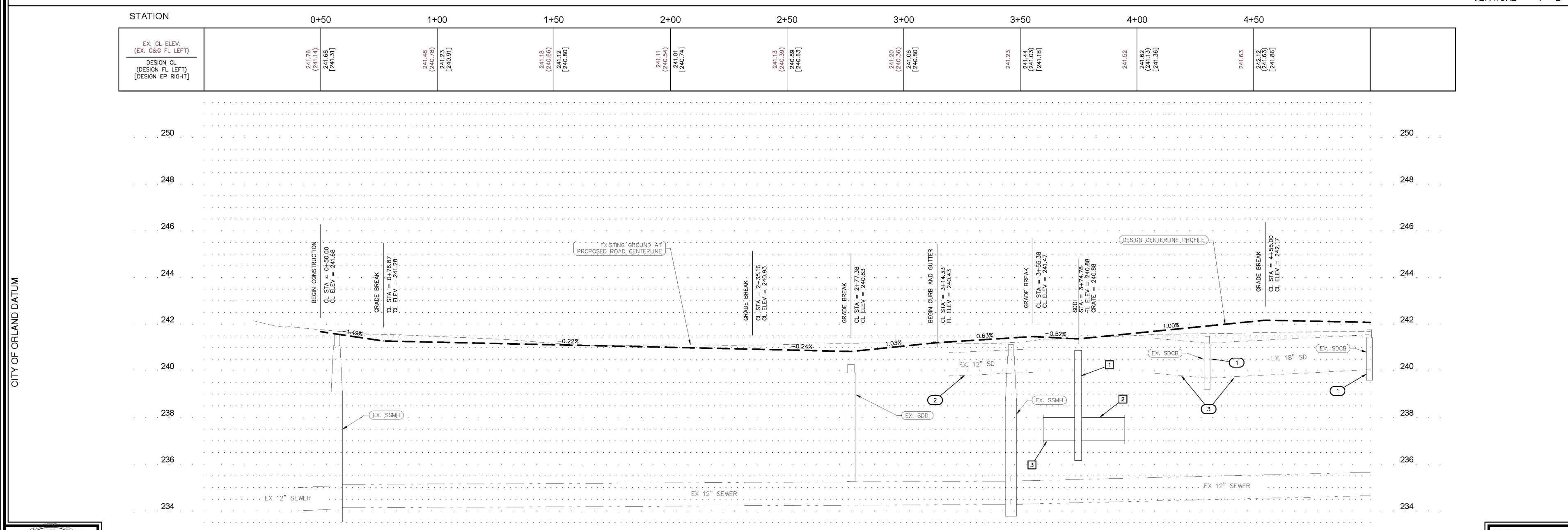
CONSTRUCTION NOTES

1. INSTALL 2" HMA COMPACTED TO 95% RELATIVE COMPACTION ON 6" CLASS 2 A.B. COMPACTED TO 95% RELATIVE COMPACTION OVER 12" OF SUBGRADE SCARIFIED AND COMPACTED TO 95% COMPACTION
2. USE CAUTION WHEN WORKING NEAR UTILITY JOINT POLE, GUY WIRE OR OVERHEAD LINE, PROTECT IN PLACE
3. PROTECT EXISTING SIGN POST OR MAILBOX IN PLACE
4. ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE
5. CONFORM TO EXISTING CENTERLINE STRIPING AND INSTALL 80 LF OF CALTRANS A20A, DETAIL 21 4" YELLOW THERMOPLASTIC TRAFFIC LINES
6. PLACE BLUE REFLECTIVE MARKER AT CENTERLINE OF ROAD AT FIRE HYDRANT LOCATION PER CITY OF ORLAND STD. 301A
7. INSTALL CITY OF ORLAND STD. 205 RESIDENTIAL DRIVEWAY AND CONTIGUOUS SIDEWALK
8. INSTALL CITY OF ORLAND STD. 204 CONTIGUOUS SIDEWALK, VERTICAL CURB AND GUTTER
9. INSTALL ±163 LF OF CALTRANS A20B, DETAIL 27B 4" WHITE THERMOPLASTIC RIGHT EDGE LINE
10. INSTALL ±601 LF OF CALTRANS A20B, DETAIL 27B 4" WHITE THERMOPLASTIC RIGHT EDGE LINE



TYPICAL STREET SECTION
(STA: 3+14.33 TO STA: 5+00.00)
NO SCALE

SCALE: HORIZONTAL 1" = 20' VERTICAL 1" = 2'



APPROVED	PREPARED FOR :	RAR ROLLS ANDERSON & ROLLS CIVIL ENGINEERS 115 YELLOWSTONE DRIVE • CHICO, CALIFORNIA 95973-5811 • TELEPHONE 530-895-1422	PLAN AND PROFILE
DATE JULY, 2022	CITY OF ORLAND		COUNTY ROAD M 1/2 REHABILITATION PROJECT

DESIGNED DJB
DRAWN CAD
CHECKED JIR
DRAWING NO. 2 OF 5
JOB NO. 20014

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Figure 4a. Site Plan
Road M1/2 Rehabilitation and Reconstruction Project

2.2.1 Lead Agency Approval

As the lead agency, the City of Orland has the ultimate authority for Project approval or denial. The Proposed Project may require the following discretionary approvals and permits by the City for actions proposed as part of the Project:

- Grant Approval
- Contract/Budget Approval
- Adoption of the IS/MND

In addition to the above City actions, the Project may require approvals, permits, and entitlements from other public agencies for which this IS/MND may be used, including, without limitation, the following:

- California Department of Fish and Wildlife (CDFW), Region 2
- California Department of Transportation (Caltrans), District 3
- Glenn County Air Pollution Control District (GCAPCD)
- US Bureau of Reclamation (USBR)

2.2.2 Relationship of Project to Other Plans and Projects

2.2.2.1 City of Orland General Plan

California state law requires cities and counties to prepare a general plan describing the location and types of desired land uses and other physical attributes in the city or county. General plans are required to address land use, circulation, housing, conservation, open space, noise, and safety. The *Orland General Plan* is the City's planning document and provides a comprehensive, long-term plan for physical development in the City.

The Orland General Plan Circulation Element aims to establish a system of safe and efficient local, collector, and arterial roads to reduce travel time and improve traffic safety consistent with the land use patterns of the City. It also contains a roadmap used to formulate and adopt circulation design and improvement standards that require a level of service consistent with the demands generated by proposed development, public safety, and the efficient use of public and private resources in the City of Orland Planning Area. Additionally, the Circulation Element paves the way for designing Orland's roadway networks around transportation alternatives to the automobile that safely link important public places within the community (City of Orland 2010a).

2.3 Consultation with California Native American Tribe(s)

Assembly Bill (AB) 52 requires that prior to the release of a CEQA document for a project, an agency begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Proposed Project if:

1. the California Native American tribe requested to the lead agency, in writing, to be informed by the Lead Agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe and

2. the California Native American tribe responds in writing within 30 days of receipt of the formal notification and requests the consultation.

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the 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 Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.	☐
I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.	☐

Peter Carr
City Manager

Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

Views from the Project Site include the Coast Range to the west, and on clear days the Cascade and Sierra Nevada and foothills to the east and northeast.

4.1.1.1 Regional Setting

The City's *General Plan Draft Environmental Impact Report* (DEIR, City of Orland 2010b) identifies views of the Coast Range and the Black Butte Recreation Area, Mount Lassen and the Cascade and Sierra Nevada, and Stony Creek, as the most significant natural scenic resource within the Planning Area of the City. The General Plan does not include any policies for the protection of views or identify any viewsheds, or scenic vistas that should be protected.

State Scenic Highways

The intent of the California Scenic Highway Program is to protect and enhance the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view. No officially designated scenic highways are located within the vicinity of the Project Site (Caltrans 2022).

4.1.1.2 Visual Character of the Project Site

The Project Site is located in the rural eastern portion of the City of Orland, abutting State Route 32 (SR 32). The Project Site is generally bound by single-family residences to the east and west, with a 230-foot segment abutting agricultural land. Bryant Street is located to the north of the Project Site, with vacant land beyond. A heating and A/C service center is located at the southeast boundary of the Project Site, SR 32 is located to the south, and the building formerly occupied by the Butte Community College Glenn Center and now used as a County office building abuts the southwest boundary with additional commercial uses beyond. The Interstate 5 (I-5) and SR 32/Newville Road interchange is located 0.75 mile west of the Project Site. Stony Creek is within 0.05 miles north of the Project Site. The Project Site is relatively level, and elevations range from 243 feet to 250 feet AMSL.

The Project Site is an existing public street fronting a handful of single-family residences. The surrounding lands include developed and undeveloped areas, farmland, commercial, and rural residential development.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒

No impact.

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. While the City's General Plan DEIR identifies views of the Coast Range and the Black Butte Recreation Area, Mount Lassen and the Cascade and Sierra mountains, and Stony Creek, the General Plan does not include any policies for the protection of views or identify any viewsheds, or scenic vistas that should be protected. Distant views of the Coast Range can be seen from the Project Site and surrounding area. However, these views are fragmented by existing development and natural features such as trees and hills.

The Orland General Plan does not identify any areas considered to be scenic vistas that need to be protected and preserved in the City. Additionally, the Project Site is not considered to be in an area of significant visual qualities, nor do these areas have any significant visual features. The Project is a road rehabilitation and reconstruction that would not affect the viewshed or scenic vista of the site. Therefore, the Proposed Project would have no impact on scenic vistas.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No impact.

The Proposed Project is not located within the vicinity of an officially designated scenic highway. The Project is the rehabilitation and reconstruction of an existing road. No impact would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No impact.

The Proposed Project includes the rehabilitation and reconstruction of an existing roadway and surface grade crossing over an irrigation canal. Upon completion of the Project, the visual characteristics of the Site and its surrounding views will be unchanged. No changes to zoning or other regulations governing scenic quality are proposed. Therefore, no impact would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Less than significant.

The Project Site is an existing roadway with existing sources of light or glare from street lighting fixtures, surrounding structures, and turning vehicles. Surrounding land uses and infrastructure provide additional sources of light experienced within the Project Site. However, implementation of the Project would not introduce new sources of daytime glare nor change nighttime lighting and illumination levels. Lighting nuisances typically are categorized by the following:

- Glare – Intense light that shines directly or is reflected from a surface into a person's eyes.
- *Skyglow*/Nighttime Illumination – Artificial lighting from urbanized sources that alters the rural landscape in sufficient quantity to cause lighting of the nighttime sky and reduction of visibility of stars and other astronomical features.
- *Spillover* Lighting – Artificial lighting that spills over onto adjacent properties, which could interrupt sleeping patterns or cause other nuisances to neighboring residents.

The main sources of daytime glare in Project vicinity are from sunlight reflecting from structures with reflective surfaces such as windows. Development under the Proposed Project would not include commercial or residential structures or other potential sources of glare.

Activities associated with Project construction have the potential to increase lighting and glare within and around the Project Site. Sources of additional light and glare would emanate from construction equipment's reflective surfaces. Although there is a potential to increase lighting and glare within and around the Project Site during construction, these sources would be temporary and would cease upon Project completion.

The Proposed Project may result in a slight increase of artificial light and glare into the existing environment; however no new fixtures or sources of light are proposed. The introduction of new sources of light and glare may contribute to nighttime light pollution and result in impacts to nighttime views in the area. However, all development would be subject to Orland Municipal Code Section 17.44.110, which requires the shielding of lighting to prevent illumination of the adjacent properties and to prevent glare or direct illumination of public streets and limits the height of light poles. As such, the Proposed Project would have a less than significant impact for the potential to create light or glare that would adversely affect day or nighttime views.

4.1.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The DOC manages an interactive website, the California Important Farmland Finder, which can be used to identify the farmland classification of a specific area. This website program identifies the southern half of the Project Site as being Urban and Built-Up Land and the northern half as Farmland of Local Importance (DOC 2022). Neither the Site nor adjacent lands are subject to a Williamson Act contract (Glenn County 2022a). The Project Site is not within a forest or timber resource zones and is not zoned for forestland protection or timber production.

4.2.2 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒

No impact.

According to the DOC (2022), no lands within the Proposed Project Site are identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there is no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

No impact.

There are no Williamson Act contract lands on the Site or within the vicinity of the Project Site (Glenn County 2022a). Therefore, the Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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))?	☐	☐	☐	☒

No impact.

The Project Site is not located in a forestland protected or timber production area. The Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No impact.

No identified forest lands exist on the Project Site or within the vicinity of the Project. The Project would have no impact on forest land and would not covert forest land to non-forest use.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) 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?	☐	☐	☐	☒

No impact.

As previously stated,, the Project Site is not located in an area considered to be forest land, timberland. The Project would have no impact in this area.

4.2.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.3 Air Quality

This assessment was prepared using methods and assumptions recommended in the rules and regulations of the Glenn County Air Pollution Control District (GCAPCD). Regional and local existing conditions are presented, along with pertinent pollutant emissions standards and regulations. The purpose of this assessment is to estimate criteria air pollutants attributable to the Project and determine the level of impact the Project would have on the environment.

4.3.1 Environmental Setting

The Project Site is located within Glenn County in the City of Orland. The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Proposed Project is located in Glenn County, which is in the Northern Sacramento Valley Air Basin (NSVAB**Error! Bookmark not defined.**). The NSVAB consists of a total of seven counties: Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the

northern portion of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet AMSL, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as that transported northward on prevailing winds from the Sacramento metropolitan area (Sacramento Valley Air Quality Engineering and Enforcement Professionals 2021).

The environmental conditions of Glenn County are conducive to potentially adverse air quality conditions. The region is characterized by moderately wet winters followed by hot and dry summers. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Glenn County have also contributed to an increase in emissions.

Both the U.S. Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called *criteria* pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulate matter (PM), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The Glenn County portion of the NSVAB is designated nonattainment state standards of Particulate Matter less than 10 microns in diameter (PM_{10}) and is in attainment for all federal standards.

In Glenn County, the air quality regulating authority is the GCAPCD, which adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs. The district also regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality. The GCAPCD develops regulations to improve air quality and protect the health and welfare of Glenn County residents and their environment. GCAPCD rules and regulations most applicable to the Project Site include, but are not limited to, the following:

- **Article IV, Section 76, Visible Emissions.** A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:
    - As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
    - Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection "A" above.

- **Article IV, Section 78, Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public of which endanger the

comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

- **Article IV, Section 85, Particulate Matter Concentration.** Except for emissions from agricultural operations, no person shall discharge into the atmosphere from any source particulate matter in excess of 0.3 grains per cubic foot of gas at standard conditions.

4.3.1.1 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site are residences fronting County Road M 1/2, located directly adjacent to the Project's eastern and western boundary.

4.3.2 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

No Impact.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously described, the GCAPCD is the agency responsible for enforcing many federal and state air quality requirements and for establishing air quality rules and regulations. The GCAPCD attains and maintains air quality conditions in the Glenn County portion of the NSVAB. They achieve this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. As part of this effort, the Sacramento Valley Air Quality Engineering and Enforcement Professionals, made up of the counties that encompass the NSVAB, has developed the SIP in the form of the air quality attainment plans and reports, including the 2021 Air Quality Attainment Plan (AQAP). These plans constitute the SIP for the portion of the NSVAB encompassing the Project and

include plans and control measures for attaining air quality standards. These air quality attainment plans are a compilation of new and previously submitted plans, programs (e.g., monitoring, modeling, permitting), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards.

The 2021 AQAP contains air pollutant reduction strategies and demonstrates that the applicable ambient air quality standards can be achieved within the time frames required under federal law. A project conforms with the 2021 AQAP if it complies with all applicable rules and regulations and is consistent with the growth forecasts in the applicable plans (or is directly included in the applicable plan). Projects generating air pollutants below significance thresholds would comply with applicable rules and regulations. Conformity with growth forecasts can be established by demonstrating that the Project is consistent with the land use plan (i.e., City of Orland General Plan) that was used to generate the growth forecast. Growth projections from local general plans adopted by cities in the district are used to develop regional growth forecasts that are used to develop future air quality forecasts for the 2021 AQAP. Development consistent with the growth projections in the City of Orland General Plan is considered to be consistent with the 2021 AQAP. A project is nonconforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan.

The Proposed Project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2021 AQAP. As shown in Table 4.3-1, the Project would not exceed the significance thresholds for construction. Once in operation the Project would not be a source of air pollutant emissions. Therefore, the Project would not conflict or obstruct implementation of any 2021 AQAP control measures and would be consistent with emission-reduction goals. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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?	☐	☐	☒	☐

Less than Significant Impact.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with

both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Glenn County.

Construction Impacts

Regional Construction Significance Analysis

Emissions associated with Project construction would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., tractors, forklifts, pavers), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving and coating activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment 4.3 for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis. Neither the City of Orland nor GCAPCD have established air pollution thresholds under CEQA for the assessment of air quality impacts. Therefore, the Project emissions will be compared with the thresholds established in Sacramento County. As with Glenn County and the Proposed Project Site, Sacramento County is located within the Sacramento Valley Air Basin and thus possesses similar air circulation patterns and temperature inversion layers. Therefore, air quality thresholds of significance developed in that county are appropriate. While air quality standards established in Sacramento County are not binding on Glenn County, they are instructive for comparison purposes.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized above in Table 4.3-1. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the thresholds of significance.

Table 4.3-1. Construction-Related Criteria Air Pollutant Emissions

Construction Year	Pollutant					
	ROG	NOX	CO	SO_2	PM_{10}	$PM_{2.5}$
Daily Emissions (maximum pounds per day)						
Construction Year One	3.83	34.03	33.84	0.06	3.22	1.67
Construction Year Two	3.61	31.55	32.47	0.06	3.08	1.54
Daily Significance Threshold	*None*	*85 pounds/day*	*None*	*None*	*80 pounds/day*	*82 pounds/day*
Exceed Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions (maximum tons per year)						
Construction Year One	0.20	1.75	1.71	0.00	0.17	0.09
Construction Year Two	0.22	1.95	2.05	0.00	0.18	0.09
Annual Significance Threshold	*None*	*None*	*None*	*None*	*14.6 tons/year*	*15 tons/year*
Exceed Annual Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment 4.3 for Model Data Outputs.
Notes: Construction emissions taken from the season (summer or winter) with the highest output.

As shown in Table 4.3-1, emissions generated during Project construction would not exceed the thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur. This impact is less than significant.

Operational Impacts

The Proposed Project consists of the rehabilitation and reconstruction of a City roadway. Once construction is complete it would not be a source of operational emissions. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than Significant Impact.

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site are several residences fronting County Road M 1/2, located directly adjacent to the Project's eastern and western boundary.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of DPM, reactive organic gases (ROG), NO_x, PM_{10} and $PM_{2.5}$ from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. As previously identified, the area of the NSVAB which encompasses the Project Site is designated nonattainment state standards of PM_{10} and is in attainment for all federal standards (CARB 2022). Thus, existing levels of this criteria pollutant in the NSVAB are at unhealthy levels during certain periods. However, the Project would not exceed the Sacramento Metropolitan Air Quality Management District (SMAQMD) significance thresholds for any criteria air pollutant emissions, including PM_{10}.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in significant O_3 precursor emissions (ROG or NO_x) according to Project significance thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions more than any common significance thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal

heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and PM_{10} contains $PM_{2.5}$ as a subset. As with O_3 and NO_x, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed significance thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of air pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots", are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams per mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the NSVAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD) 1992 Federal Attainment Plan for Carbon Monoxide in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the

Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards. Similar considerations are also employed by other air districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour, where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The Project is an implementation project with no operational phase. Therefore, it would not generate operational trips. There is no likelihood of the Project traffic exceeding CO values. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Less than Significant Impact.

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or

recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the Project Site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Project is proposing road reconstruction which does not include any of these uses considered to be associated with odors. Therefore, this impact is found to be less than significant.

4.3.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.4 Biological Resources

A Biological Resources Assessment Letter was completed by ECORP Consulting, Inc. for the Proposed Project (ECORP 2022a). This letter is included as *Attachment 4.4*.

4.4.1 Environmental Setting

The Study Area is located in the City of Orland, California at the north end of Road M ½ (see Figure 1). The Study Area corresponds to a portion of Section 21, Township 22 North, and Range 3 West (Mount Diablo Base and Meridian) of the Kirkwood, California" 7.5-minute quadrangle (USGS 1958, photo revised 1978), The approximate center of the Site is located at latitude 39.445680º and longitude -122.102387º.

The Study Area lacks any significant wildlife habitat elements, such as emergent wetlands or woodlands. The Study Area is surrounded by lands that are comprised of developed and undeveloped areas with extensively travelled paved roads. No animal burrows were found at the Study Area and there is minimal wildlife use on the site. The general vicinity of the Project Site is residential and commercial with a parcel to the north that is currently undeveloped.

According to the CNDDB, there are no previously documented occurrences of special-status species within the Study Area (CDFW 2022a). However, several special-status species occurrences have been documented within the vicinity of the Study Area. Species that are tracked in the CNDDB that are not state or federally listed were not included in the evaluation.

4.4.1.1 Special-Status Plants

Several special-status plants were identified as having potential to occur in the region around the Study Area based on the literature review. However, upon further analysis and after the site visit, all of these

special-status species are absent due to a lack of suitable vernal pool, woodland, or meadow habitat onsite.

4.4.1.2 Special-Status Wildlife

Reptiles

One special-status reptiles were identified as having the potential to occur within the region surrounding the Study Area based on the literature review. However, upon further analysis and after the site visit, the giant garter snake (Thamnophis gigas) was considered absent from the site due to lack of suitable habitat.

Birds

Four special-status bird species were identified as having the potential to occur within the region around the Study Area based on the literature review. Upon further analysis and after the site visit, the four bird species are considered to have low potential to occur at the site due to the lack of suitable habitat. However, due to the proximity of suitable nesting habitat, it is possible for bird to nest or roost within the project vicinity. All native birds, including raptors, are protected under the federal MBTA. As such, to ensure that there are no impacts to protected active nests, construction activities will occur outside of the nesting season (September 1- January 31) and a no-disturbance buffer shall be established by a qualified biologist (Mitigation Measure BIO-2).

Invertebrates

Four special-status invertebrates were identified as having potential to occur within the region surrounding the Study Area based on the literature review. However, upon further analysis and after the site visit, all these special-status species are absent due to a lack of suitable habitat onsite.

Fish

Three special-status fish were identified as having the potential to occur within the region surrounding the Study Area based on the literature review. However, upon further analysis and after the site visit, all three fish species were considered absent from the site due to the lack of suitable habitat.

4.4.2 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

No impact.

No special-status species are known to occur within the Project Site, and there is no potential suitable habitat for any special-status species present. Since the Project will rehabilitate an existing roadway, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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?	☐	☐	☐	☒

No impact.

The Project Site consists of existing paved roadway. There are no sensitive natural communities as defined by CDFW, and there is no riparian habitat onsite. Therefore, the Project will not impact riparian habitat or sensitive natural communities.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No impact.

The Project Site consists of existing roadway and there are no aquatic resources, potential Waters of the U.S. or State, present within the Project Site. The Project would have no impact on state or federally protected wetlands.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) 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?	☐	☐	☒	☐

Less than significant.

The Project Area provides limited migratory opportunities for terrestrial wildlife because of the developed nature of the surrounding lands and the absence of significant wildlife habitat elements onsite. However, there are trees in the vicinity of the Project Area. Project construction is likely to temporarily disturb and displace some wildlife from the vicinity of the Project Site. Some wildlife such as birds or nocturnal species are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume. The Project is not expected to substantially interfere with wildlife movement.

There are no documented nursery sites, and no nursery sites were observed within the Project Area during the site reconnaissance. Therefore, the Project is not expected to significantly impact wildlife nursery sites.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

No impact.

There are currently no adopted or proposed local policies or ordinances that affect the Proposed Project. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

No impact.

The Project Area is not covered by any local, regional, or state conservation plan. Therefore, there would be no impact since the Project would not conflict with a local, regional, or state conservation plan.

4.4.3 Mitigation Measures

BIO-1 – The Project will implement erosion control measures and BMPs to reduce the potential for sediment or pollutants at the Project Area. Measures may include:

- Erosion control measures will be placed between Waters of the U.S., and the outer edge of the staging areas, within an area identified with highly visible markers (e.g., construction fencing, flagging, silt barriers) prior to commencement of construction activities. Such

identification and erosion control measures will be properly maintained until construction is completed and the soils have been stabilized.

- Fiber rolls used for erosion control will be certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control will not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org/) and will be composed of native species appropriate for the site.
- Trash generated onsite will be promptly and properly removed from the site.
- Any fueling in the upland portion of the Study Area will use appropriate secondary containment techniques to prevent spills.
- A qualified biologist will conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special status species to occur on the Project site. The training will provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for non-compliance.

BIO-2 – To protect nesting birds, no Project activity shall begin from February 1 through August 31 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds and raptors, including bald eagles.

- All Nesting Birds - Within 14 days prior to construction (or less if recommended by CDFW), survey for nesting activity of birds within each Project work area and a 100-foot radius. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Raptors (including bald eagle) – Within 14 days prior to construction, survey for nesting activity of birds of prey within each Project work area and a 500-foot radius. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

4.5 Cultural Resources

A Cultural Resources Inventory Report was prepared by ECORP Consulting, Inc. (ECORP 2022b) for the Proposed Project to determine if cultural resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered or buried cultural resources. The information provided below is an abridged version of this report and is provided here to afford a brief context of the potential cultural resources in the Project Area.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code § 6250 et seq.) and California's open meeting laws (The Brown Act, Government Code § 54950 et seq.) protect the confidentiality of Native American cultural place information. Because the disclosure of information about the location of cultural resources is prohibited by the Archaeological Resources Protection Act of 1979 (16 U.S. Code 552 [USC] 470HH) and Section 307103 of the National Historic Preservation Act (NHPA), it is exempted from disclosure under Exemption 3 of the federal Freedom of Information Act (5 USC 552)] Likewise, the Information Centers of the California Historical Resources Information System (CHRIS) maintained by the California Office of Historic Preservation prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a confidential document, which is not intended for public distribution in either paper or electronic format. As such, the Cultural Resources Inventory Report is not included in this IS/MND.

4.5.1 Environmental Setting

The Proposed Project entails the repair, widening, and reconstruction of Road M ½. It also involves the installation of a new pre-cast concrete box culvert along the westside of the existing culvert to extend the width of the crossing over Lateral 40 of the Orland Project where M ½ meets Bryant Street. A water main will cross under Lateral 40 and tie into the existing main located under Bryant Street. The Project Area consists of 3.58 acres of property located in the southern half of the northwestern quarter of Section 21 of Township 22 North, Range 3 West, Mount Diablo Base and Meridian as depicted on the 1949 (photorevised 1969) Kirkwood, California and 1951 (photorevised 1978) Orland, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps. The Project Area consists of a section of road approximately 0.25-mile long and 130 feet wide, with three small areas that will be utilized for staging equipment and supplies during construction. The first staging area consists of 0.13-acre on the northern side of County Road 13/Bryant Street and makes up the northern boundary of the Project Area. It is located in a portion of Assessor's Parcel Number (APN) 046-090-018-0. The second staging area consists of approximately 2,300 square feet within the fenced side yard of 4438 Road M ½ (APN 041-100-019-0). The third staging area consists of approximately 0.7-acre on the northern side of East Tehama Street, approximately 140 feet west of the centerline of Road M ½, in a portion of APN 041-050-019-0. Additionally, a section of East Tehama Street on the western side of Road M ½ that measures approximately 290 feet long by 60 feet wide is included in the Project Area to provide access to the staging areas. The three staging areas and the section of East Tehama Street are contiguous with the main Project Area, which cumulatively totals 3.58 acres.

4.5.1.1 Area of Potential Effects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of a project and includes the area within which significant impacts or adverse effects to historical resources or historic properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations) of the NHPA. For projects subject to CEQA, the term Project Area

or Project Site is used rather than APE. The terms Project Area and APE are interchangeable for the purpose of this document.

The horizontal APE consists of all areas where activities associated with a project are proposed and, in the case of this Project, equals the Project Area subject to environmental review under the National Environmental Policy Act (NEPA) and CEQA. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements in the official Project description.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE for this Project includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project but could extend as deep as 6 to 8 feet below the current surface, and therefore, a review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE is also described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. This Project assumes the above-surface vertical APE will be a maximum of 30 feet above the surface, which is the typical height required for the proposed equipment; however, the APE will be returned to its pre-project profile after construction.

4.5.2 Cultural Resources

ECORP requested a records search for the Project Area at the Northeast Information Center (NEIC) of the CHRIS at California State University, Chico on May 9, 2023 (ECORP 2022b). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NEIC staff completed and returned the records search to ECORP on May 22, 2023.

In addition to the official records and maps for archaeological sites and surveys in Glenn County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for Glenn County; the National Register Information System (National Park Service [NPS]); Office of Historic Preservation (OHP), California Historical Landmarks (CHL); California Points of Historical Interest; Directory of Properties in the Historical Resources Inventory; Caltrans Local Bridge Survey; Caltrans State Bridge Survey; and *Historic Spots in California* (ECORP 2022b).

In addition to the records search, ECORP contacted the California Native American Heritage Commission (NAHC) on May 9, 2023 to request a search of the Sacred Lands File for the Project Area (ECORP 2022b). This search determines whether or not the California Native American tribes within the Project Area have recorded Sacred Lands, because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding TCRs, but the

responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies do not delegate government-to government authority to any private entity to conduct tribal consultation.

4.5.2.1 Ethnography

Prior to the arrival of European-Americans to what was to become California, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited the state. When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one-third of the state's native population, lived in the Central Valley. At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction. Historians and archeologists recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. As a result, California as it relates to indigenous groups, was further subdivided into four subculture areas: Northwestern, Northeastern, Southern, and Central. The Central area encompasses the current Project Area and includes the Wintu and Nomlaki.

Further information regarding the Native Americans of California and potential for impacts tribal cultural resources is provided in Section 4.18.

4.5.2.2 Regional History

After 1821, the Mexican government began welcoming non-Hispanic immigrants to Alta (upper) California. Hundreds of Americans, British, and other foreigners arrived to establish trading relationships; others became naturalized Mexican citizens and applied for land grants. John Sutter, a German-speaking immigrant from Switzerland, built a fort at the confluence of the Sacramento and American rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant; he received nearly 49,000 acres along the Sacramento River in 1841.

Following the Mexican-American War of 1846-1848, Mexico ceded Alta California to the United States. Under the Treaty of Guadalupe Hidalgo, Congress agreed to honor the property rights of former Mexican citizens living within the new boundaries of the United States. That meant recognizing Alta California's Mexican land grants. In 1851, Congress passed the California Land Act creating the Board of Land Commissioners to determine the validity of the individual grants, placing the burden of proof on patentees. The Board, with assistance from U.S. courts, confirmed most of California's Mexican land grants in subsequent decades.

In January 1848, one of John Sutter's hired laborers, James Marshall, discovered gold in the flume of a lumber mill at Coloma on the South Fork of the American River. News of Marshall's discovery spread around the world, leading to the California Gold Rush of 1849. Tens of thousands of prospectors arrived in the Sierra Nevada foothills, prompting the creation of hundreds of small mining camps along streambeds. The cities of Marysville, Sacramento, and Stockton sprang up in the Sacramento and San Joaquin valleys as supply centers for the mines; San Francisco became California's largest city and the focal point for Gold Rush economic activity. In 1850, following a year of rapid growth, Congress admitted California as the 31st

U.S. state. In the following decades, federal surveyors arrived in California to stake out 36- square-mile townships and 1-square-mile sections on California's unclaimed public lands. At general land offices, buyers paid cash for public lands. After 1862, many filed homestead applications to obtain 40, 80, and 160-acre tracts at low upfront costs in exchange for establishing farms.

4.5.2.3 Local History

The California Legislature created Glenn County from parts of Colusa County in 1891; the town of Willows became the county seat. Glenn County took its name from Hugh J. Glenn (1824-1882), the "Wheat King" of the Sacramento Valley. During the 1870s and early 1880s, Glenn annually produced more than a half million bushels of wheat on his 55,000-acre ranch, which traced the western banks of the Sacramento River. In 1876, the Northern Railway Company, a Southern Pacific predecessor, began laying tracks north up the western side of the Sacramento River from Woodland. In October 1878 it reached a willow grove that grew around a pool of natural springs near Willow Creek. Travelers between the foothills and Princeton, a Sacramento River crossing, historically used the willow grove as a directional landmark; locals referred to it simply as *the willows*. A mile to the south of the willow grove, the Northern Railway Company established a station stop and staked out a town it called Willows. Four years later, the railroad reached Orland, a town laid out five years earlier by the members of Chamberlain family on their Stony Creek ranch. Orland, like Willows, became an important station stop on the Northern Railway. Wheat remained eastern Glenn County's major export through the late 19th century. Logging and lumber milling in western Glenn County prompted the federal government to set aside the Stony Creek Reserve in 1907; a year later it became the California National Forest (renamed the Mendocino National Forest in 1932). During the 20th century, rice farming, livestock ranching, and dairying eclipsed grain farming as the major agricultural activities in eastern Glenn County; natural gas extraction also became an important industry in Glenn County.

4.5.2.4 City of Orland

The Chamberlain family, owners of a ranch along Stony Creek in northern Colusa (later Glenn) County, subdivided a portion of their property in 1875 to form a town called Orland. A hotel, store, and other buildings appeared in 1875. All burned in an 1880 fire. In 1883, the Northern Railway Company reached Orland and established a station stop at the town, prompting a flurry of new building activity. The railroad's arrival made Orland a destination for grain farmers in northern Colusa (later Glenn) and southern Tehama counties. Grain farmers hauled their wheat to A. D. Logan's massive grain warehouse built in Orland along the Northern Railway tracks between Walker and Tehama streets. "Orland is surrounded by some of the finest ranches in the State," observed a Colusa County booster in 1887. "The foothills to the west have the best of rich, clay loams, which produce such large yields of wheat…To the south and east are large wheat ranches, some of them embracing thousands of acres".

The intersections of Walker Street and 5th and 6th streets in Orland became the commercial focal point for the region. A carriage shop, blacksmith, wheelwright, and livery stables provided services for grain farmers who hauled wagonloads of wheat into town. A bank, post office, butcher, barber shop, drug store, two hotels, and multiple saloons provided essential services for farmers, visitors, and residents of town. A.

G. Bender's lumber yard alongside the railroad provided building materials that facilitated Orland's physical growth in town and in the countryside. By 1890 the town's population exceeded 400.

The early success of fruit orchards in the vicinity of Orland created much optimism in town. "Fruit trees and vines," noted one observer, "have been tried by a number in this vicinity and they show a remarkable growth and render a most favorable verdict for what they can do in both quantity and quality of fruit". In 1887, farmers on the northern banks of Stony Creek, a mile north of Orland, formed Northern California's first irrigation district, the Orland Irrigation District. Like other early California irrigation districts (including the Orland Southside Irrigation District, organized in 1888) the Orland Irrigation District fell victim to litigation. A private canal company, the Stony Creek Irrigation Company, encountered fewer obstacles; its owners built a ditch that took water from Stony Creek 9 miles northeast of Orland and provided water to orchards and vineyards in the immediate vicinity of town.

4.5.2.5 Project Area History

The Orland Project

It soon became apparent that Stony Creek, with its erratic seasonal flows, could not meet Orland's overall demand for irrigation water. Local leaders in 1902 jumped at the chance to work with the new U.S. Reclamation Service (now the Bureau of Reclamation) to improve the region's irrigation system. In 1909, the federal government acquired the canal system of the Stony Creek Irrigation Company and began drawing up plans for a dam and storage reservoir on Stony Creek in the hills northwest of town. The Orland Project, completed in 1910, included the 139-foot East Park Dam. By 1924 the Project also included 16.9 miles of concrete-lined canals that delivered water to 15,500 acres.

With the advent of irrigation, a patchwork of small family farms appeared in the vicinity of Orland. Oranges, lemons, grapefruit, prunes, figs, peaches, apricots, pears, grapes, olives, and watermelons all thrived. The town of Orland prospered tremendously; its population nearly doubled from 835 residents in 1910 to more than 1,500 in 1920. The Bureau of Reclamation, eager to expand its influence in western states, happily touted Orland's success to national audiences during the Depression years. In its publication, Reclamation Era, the Bureau frequently "sang the praises of a community (Orland) still busy concreting laterals, adding pipeline, constructing homes and planting orange trees. By the early 21st century, the Orland Project irrigated 20,000 acres in northern Glenn County, making it one of the Bureau of Reclamation's smallest projects. But as "one of the oldest federal reclamation projects in the country and one of the first undertaken in California," historians celebrated the Orland Project as a visionary undertaking, one that set the stage for multiple larger projects in western states.

County Roads

During the second half of the 19th century, a period of rapid railroad development, public roads in California and other states became neglected and degraded. By 1900 "the nation with the greatest railway system in the world had the worst roads. Interest in road building revived around the turn of the century when farmers and ranchers, many disillusioned with high railroad rates, began asking county officials for better roads. They were joined by millions of bicyclists who called for smoother roads in town and in the countryside. Joining forces, farmers, ranchers, and bicyclists organized local, state, and national "good

roads" campaigns. In response, the federal government established the Office of Road Inquiry in the Department of Agriculture to study new road building techniques.

Dusty during summer months and muddy during the winter and spring, unpaved roads played havoc with wagons, carriages, and bicycles. Overcoming mud and dust became a point of emphasis. Plank roads made from lumber first appeared in California in the 1850s. Gravel roads and macadam, a form of compacted gravel coated with oil, came into use during the late 19th century. Finally, after 1900, concrete roads topped by a mixture of bitumen, aggregate, and sand called asphalt became the standard modern road surface. Durable, smooth, and impervious to water, asphalt withstood winter weather, reduced vehicular wear and tear, and better facilitated drainage.

The task of grading and paving rural roads fell to county boards of supervisors. The most heavily trafficked rural roads such as those leading to towns, cities, and schools, or those leading to major sites of production such as ranches, mines, quarries, and mills, received priority attention. Thousands of other rural roads derived from the Public Land Survey System, the checkerboard of square-mile sections and 36-square-mile townships established by federal surveyors to facilitate the sale of western public lands. Because they marked property boundaries, section and quarter-section lines became mutually beneficial roadways for neighboring property owners. To create roads, property owners deeded equal strips of land along section lines to counties in exchange for grading, paving, and other improvements.

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐

Less than significant.

The Cultural Resources Report recommends a finding of "No Adverse Effects/Less-Than-Significant Impact" for an NRHP/CRHR-eligible segment of Lateral 40 of the Orland Project, P-11-734. The Project involves the installation of a new pre-cast concrete box culvert over Lateral 40 of the Orland Project; this new culvert will conjoin with, and thus extend the existing culvert (OM-03) to facilitate the crossing of Road M ½ over Lateral 40 to its intersection with Bryant Street.

The federal government defines Effect as any "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR § 800.16). Similarly, the State of California defines a Less-Than-Significant Impact on a historical resource as a project action "conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings" (14 CCR § 15126.4(b)(1)). The federal government, furthermore, defines Standards for Rehabilitation as "the act or process of making possible a compatible use for a property through repair, alterations, and additions

while preserving those portions or features which convey its historical, cultural, or architectural values" (36 CFR § 68.2).

The Project involves placing a new concrete culvert along the westside of the existing culvert to allow for vehicles and pedestrians to cross over Lateral 40 of the Orland Canal (P-11-734). This action will slightly diminish P-11-34's Integrity of Materials (its 1920 concrete materials) and Integrity of Workmanship (its 1920 concrete construction). This, however, is not enough to compromise P-11-34's overall integrity, or its NRHP/CRHR eligibility. P-11-34 qualifies for inclusion in the NRHP/CRHR under Criterion A/1 (Event) "for its association with the development of irrigated agriculture in the Sacramento Valley"; it does not qualify for inclusion under Criterion C/3 (Design/Construction). This means that in order to retain integrity, P-11-34 must retain "the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or persons" (ECORP 2022b). It need not, however, necessarily "retain most of the physical features that constitute that style or technique" (ECORP 2022b). ECORP determined that a 1920 concrete box culvert on Lateral 40 of the Orland Canal (OM-03) does not constitute an essential physical feature of P-11-734. As a 20-foot-wide structure facilitating a crossing over a canal that extends for several miles, the concrete box culvert does little to express the canal's early- 20th-century character and appearance. The Cultural Resources Report determined that extending the culvert will not compromise P-11-734's NRHP/CRHR eligibility or its ability to convey its historical, cultural, or architectural values.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

No Impact.

No pre-contact resources were identified on the site during the September 15, 2021, field survey or as a part of the Cultural Resources Report. While the Project Area was surveyed for archaeological resources, there remains the possibility that unknown sub-surface archaeological resources may be discovered during Project construction. Therefore, mitigation measure **CUL-1** is provided to address the potential for the discovery of any unrecorded or previously unknown archaeological resources. With implementation of this mitigation, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

As discussed above, there are no known formal or informal cemeteries within the Project Area. Regardless, there is a possibility of the unanticipated and accidental discovery of human remains during ground-disturbing Project-related activities. Therefore, mitigation measure **CUL-1** is provided to reduce potential impacts to a level that is considered less than significant.

4.5.4 Mitigation Measures

CUL-1: **Cultural or Archaeological Resource Discovery.** All construction plans and grading plans shall include the following:

If subsurface deposits believed to be cultural or human in origin are discovered during any roadway or future construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- The lead agency shall ensure that a Contractor Awareness Training Program is delivered to train equipment operators about cultural resources. The program shall be designed to inform construction personnel about: federal and state regulations pertaining to cultural resources and tribal cultural resources, the subsurface indicators of resources that shall require a work stoppage, procedures for notifying the lead agency of any occurrences, project-specific requirements and mitigation measures, and enforcement of penalties and repercussions for non-compliance with the program.

  The training shall be prepared by a qualified professional archaeologist and may be provided either through a brochure, video, or in-person tailgate meeting, as determined appropriate by the archaeologist. The training shall be provided to all construction supervisors, forepersons, and operators of ground disturbing equipment. All personnel shall be required to sign a training roster. The construction manager is responsible for ensuring that all required personnel receive the training. The Construction Manager shall provide a copy of the signed training roster to the lead agency as proof of compliance.

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City and landowner. If the find is determined to be eligible for inclusion in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR), the City shall consult on a finding of eligibility and implement

appropriate treatment measures. Work may not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.

- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Glenn County Coroner (in accordance with § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Orland Planning Department and construction lead*

4.6 Energy

The consumption of energy resources results in direct and indirect environmental impacts through the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emissions of pollutants during energy production. The Proposed Project is a roadway rehabilitation and reconstruction project with no operational component that would generate energy use from electricity, natural gas, nor fuel consumption, therefore the energy source to analyze in this ISMND would be Project on-road construction fuel only.

4.6.1 Environmental Setting

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity followed by renewables, large hydroelectric and nuclear (California Energy Commissions [CEC] 2022). Pacific Gas and Electric Company (PG&E) provides electricity and natural gas to Glenn County. It generates or buys electricity from hydroelectric, nuclear, renewable, natural gas, and coal facilities. PG&E

provides natural gas and electricity to most of the northern two-thirds of California, from Bakersfield and Barstow to near the Oregon, Nevada and Arizona state lines. It provides 5.2 million people with electricity and natural gas across 70,000 square miles. In 2019, PG&E announced that 100 percent of the company's delivered electricity comes from GHG emission-free sources, including renewables, nuclear, and hydropower.

Energy Consumption

Vehicle fuel use is typically measured in gallons (e.g., of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh. Total automotive fuel consumption in Glenn County from 2018 to 2022 is shown in Table 4.6-1. As shown, automotive fuel consumption has decreased since 2018.

Table 4.6-1. Automotive Fuel Consumption in Glenn County 2018 – 2022

Year	Total Fuel Consumption (gallons)
2022	36,890,481
2021	37,135,760
2020	33,637,032
2019	37,653,106
2018	37,591,139

Source: CARB 2022

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Less than Significant Impact.

Operations of the Proposed Project would not result in the consumption of electricity or natural gas and thus, would not contribute to the countywide usage. The one quantifiable source of energy associated with the Project includes the equipment fuel necessary for construction. For the purpose of this analysis, Project increases in construction fuel consumption are compared with the countywide fuel consumption in 2022, the most recent full year of data. The amount of total construction-related fuel used was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1.

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use. For the purposes of this analysis, the amount of fuel necessary for Project construction is calculated and compared to that consumed in Glenn County.

Table 4.6-2. Proposed Project Energy and Fuel Consumption

Energy Type	Project Annual Fuel Consumption	Percentage Increase Countywide
Construction Year One	32,217 gallons	0.087 percent
Construction Year Two	39,409 gallons	0.107 percent

Source: Attachment 4.6 for Fuel Consumption calculations.
Notes: The Project increase in construction-related fuel consumption is compared with the countywide fuel consumption in 2022, the most recent full year of data.

Fuel necessary for Project construction would be required for the operation and maintenance of construction equipment and the transportation of materials to the Project Site. The fuel expenditure necessary for construction would be temporary, lasting only as long as Project construction. As indicated in Table 4.6-2, the Project's gasoline fuel consumption during the one-time construction period is estimated to be 32,217 gallons during the first year of construction and 39,409 gallons during the second year of construction. This would result in an annual increase of gasoline fuel use in the county by 0.087 percent and 0.107 percent, respectively. As such, Project construction would have a nominal effect on local and regional energy supplies, especially over the long-term. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

Operations of the Project would not generate any fuel consumption as it would not be contributing to any mobile sources. As such, fuel consumption associated with vehicle trips generated by the Project during operation would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

For these reasons, this impact would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

No Impact.

The Proposed Project consists of the rehabilitation and reconstruction of a City roadway and does not include the provision of new buildings or any other substantial energy consuming components. The Project would not conflict or obstruct any state or local plans for renewable energy or energy efficiency. No impact would occur.

would occur.

4.6.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.7 Geology and Soils

4.7.1 Environmental Setting

4.7.1.1 Geomorphic Setting

The Project Site is located within the Great Valley Geomorphic Province (Great Valley), which includes the area known as the Great Central Valley of California. The Great Valley extends 400 miles north-south and 60 miles east-west and is encompassed by the Coast Ranges (metamorphic), the Klamath Ranges (metamorphic), the Cascade Range (volcanic), and the Sierra Nevada Range (granitic and metamorphic). The Great Valley consists of an elongated structural trough that has been filled with a sequence of sedimentary deposits ranging in age from Jurassic to recent. Geophysical evidence suggests that the Great Valley is underlain at depth with granitic rocks of the Sierra Nevada Province. The majority of rocks and deposits found within the Great Valley Geomorphic Province are sedimentary. The age of these rocks and deposits ranges from Upper Jurassic (between 154 and 135 million years ago to recent. (California Geological Survey [CGS] 2002).

4.7.1.2 Site Geology

The geology of the Sacramento Valley as a large, asymmetric, structural trough (syncline) formed by westward-tilting blocks of plutonic and metamorphic rocks on the eastern side, and highly folded and faulted blocks of metamorphic rocks (Franciscan) on the western side. This basin has been partially filled by a thick sequence (up to 12.4 miles [20km] thick) of sedimentary rocks and alluvial deposits that range from late Jurassic to Historical in age. During the Pleistocene, erosion of the Sierra Nevada led to the deposition of large alluvial fans at the base of the foothills along the eastern side of the Sacramento Valley. Glacial conditions are generally credited for the deposition of these fans, while subsequent interglacial periods are marked by landscape stability, soil formation, and channel incision. Subsequent depositional cycles during the Holocene progressively buried downstream sections of many older alluvial fans and also led to the formation of inset stream terraces and nested alluvial fans along the foothills (Rosenthal and Willis 2017).

About 4,000 years ago, most of Sacramento Valley had large amounts of alluvium deposited across it, forming a continuous plain extending from southern Glenn County through Yolo County in the west, and from northern Butte County to Sutter County in the east. Along modern streams and rivers in the lower

Sacramento Valley, these late Holocene deposits were in part eventually eroded and/or buried by the Latest Holocene and historic period soil deposits. These latest Holocene deposits often bury older archaeological deposits (Rosenthal and Willis 2017).

4.7.1.3 Regional Seismicity and Fault Zones

In California, special definitions for active faults were devised to implement the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates development and construction in order to avoid the hazard of surface fault rupture. The State Mining and Geology Board established policies and criteria in accordance with the act, which defined an active fault as one which has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault was considered to be any fault that showed evidence of surface displacement during Quaternary time (the last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria to limit zoning to only those faults with a relatively high potential for surface rupture. Thus, the term *sufficiently active* was defined as a fault for which there was evidence of Holocene surface displacement. This term was used in conjunction with the term *well-defined*, which relates to the ability to locate a Holocene fault as a surface or near-surface feature (CGS 2010).

According to the Orland General Plan Update EIR (City of Orland 2010b), the primary seismic hazard associated with the Orland planning area is minor ground shaking. The Project Site is not located within an Alquist-Priolo earthquake hazard zone. The closest active fault system is the 40-mile-long Willows fault, located about 10 miles west of Orland (CGS 2015).

4.7.1.4 Soils

According to the U.S. Department of Agriculture's (USDA) NRCS via the Web Soil Survey database, the Project Site is composed of three soil units: Cortina gravelly fine sandy loam, shallow; Wyo loam, deep over gravel; Wyo gravelly loam, moderately deep over gravel; and Omr Orland loam, moderately deep over gravel, 0 to 2 percent slopes, MLRA 17 as shown in Table 4.7-1, below. The Web Soil Survey also identifies drainage, flooding, erosion, runoff, frost action, and the linear extensibility potential for the Project soils. According to this survey, the Project soils are moderately well drained and poorly drained, have a low to moderate runoff potential, and have no or rare potential for flooding or frost action. The Project Site soils also have a slight erosion potential and low linear extensibility (shrink-swell) (USDA 2023).

Table 4.7-1. Project Site Soil Characteristics

Soil (Map Unit Symbol, Map Unit Name)	Percentage of Site	Drainage	Flooding Frequency Class	Frost Action[1]
Czk, Cortina gravelly fine sandy loam, shallow	34.1%	Somewhat excessively drained	Rare	None
Wg, Wyo loam, deep over gravel	6.5%	Well drained	None	None
Wn, Wyo silt loam	55.8%	Well drained	None	None
Omr, Orland loam, moderately deep over gravel, 0 to 2 percent slopes, MLRA 17	3.5 %	Well drained	Occasional	None
	Runoff Potential[2]	**Linear Extensibility[3]**	**Erosion Hazard[4]**	**Plasticity Rating[5]**
Czk, Cortina gravelly fine sandy loam, shallow	A (low)	1.5%, low	Slight	0.4%
Wg, Wyo loam, deep over gravel	B (moderate)	1.5%, low	Slight	5.0%
Wh, Wyo gravelly loam, moderately deep over gravel	B (moderate)	1.5%, low	Slight	3.3%
Omr, Orland loam, moderately deep over gravel, 0 to 2 percent slopes, MLRA 17	B (moderate)	1.2%, low	Slight	9.8%

Source: NRCS 2023

Notes:

1. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.
2. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation.
Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet.
Group B: Soils having a moderate infiltration rate when thoroughly wet.
Group C: Soils having a slow infiltration rate when thoroughly wet.
Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.
3. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3%, moderate if 3 to 6%, high if 6 to 9%, and very high if more than 9%. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.
4. The ratings are both verbal and numerical. The hazard is described as *slight*, *moderate*, *severe*, or *very severe*. A rating of "*slight*" indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and offsite damage are likely, and erosion-control measures are costly and generally impractical.

Table 4.7-1. Project Site Soil Characteristics				
Soil (Map Unit Symbol, Map Unit Name)	**Percentage of Site**	**Drainage**	**Flooding Frequency Class**	**Frost Action[1]**

5. Plasticity index (PI) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid. The plastic limit is the water content that corresponds to an arbitrary limit between the plastic and semisolid states of a soil. The liquid limit is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state. Soils that have a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material. Highly and moderately plastic clays have large PI values. Plasticity index is used in classifying soils in the Unified and American Association of State Highway and Transporting Officials classification systems. For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A *representative* value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

4.7.1.5 Paleontological Resources

A paleontological records search was completed by ECORP from the University of California Museum of Paleontology (UCMP) on May 16, 2023. The search included a review of the institution's paleontology specimen collection records for Glenn County, including the Project Site and vicinity. The purpose of the assessment was to determine the sensitivity of the Project Site, whether known occurrences of paleontological resources are present within or immediately adjacent to the Project Site, and whether implementation of the Project could result in significant impacts to paleontological resources. Paleontological resources include mineralized (i.e., fossilized) or unmineralized bones, teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

The results of the search of the UCMP indicated that 242 paleontological specimens were recorded from 29 identified localities and 213 unidentified localities in Glenn County. Paleontological resources include fossilized remains of birds, mammals, reptiles, and amphibians (UCMP 2023).

4.7.2 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☐

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
i) 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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒

Less than significant.

i) The Project Site is not located within an Alquist-Priolo Earthquake Zone (CGS 2011, 2015). There would be no impact related to fault rupture.

ii) According to CGS' Earthquake Shaking Potential for California mapping, the Proposed Project Site is located in an area that is distant from known, active faults and will experience lower levels of ground shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking in the area (CGS 2016). The Proposed Project includes the rehabilitation and reconstruction of an existing roadway and construction activities would not produce strong seismic ground shaking.

iii) Liquefaction occurs when loose sand and silt saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures
- Lateral spreading – soils slide down gentle slopes or toward stream banks
- Flow failures – soils move down steep slopes with large displacement
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking
- Flotation – floating of light buried structures to the surface
- Settlement – settling of ground surface as soils reconsolidate
- Subsidence – compaction of soil and sediment

Liquefaction potential has been found to be greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. DOC provides mapping for area susceptible to liquefaction in California. According to this mapping, the Project Site is not located in an area identified for the risk of liquefaction (CGS 2022). Additionally, all structures would be required to comply with the California Building Code (CBC), including any required liquefaction analysis. As such, the Proposed Project would result in less than significant impacts with regard to seismic-related ground failure, including liquefaction.

i) The Project Site is of minimal elevation gain and the site does not have steep hillsides or other formations susceptible to landslides during a seismic event. As such, the Project would have no impact regarding the potential for landslides.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒

No Impact.

As shown in Table 4.7-1 (Web Soil Survey), the Project soils have low erosion potential. A rating of *low or very low* indicates that erosion is unlikely under ordinary climatic conditions. In addition, the Project Site is flat, which reduces the potential for substantial erosion.

A predominant instigator of erosion on construction sites are storm events and the resulting stormwater runoff. Erosion from stormwater runoff is controlled through adherence to City of Orland General Plan Policy 5.6.A, which requires the preparation of a stormwater pollution prevention plan (SWPPP) in order to comply with the Regional Water Quality Control Board's General Construction Storm Water Permit. The SWPPP will identify best management practices (BMPs) to be implemented on the Project Site to minimize soil erosion. SWPPP generally include the following BMPs:

- Diversion of offsite runoff away from the construction area;
- Prompt revegetation of proposed landscaped areas;
- Perimeter straw wattles or silt fences and/or temporary basins to trap sediment before it leaves the site;
- Regular sprinkling of exposed soils to control dust during construction during the dry season;
- Installation of a minor retention basin(s) to alleviate discharge of increased flows;
- Specifications for construction waste handling and disposal;
- Erosion control measures maintained throughout the construction period;

- Preparation of stabilized construction entrances to avoid trucks from imprinting debris on city roadways;
- Contained wash out and vehicle maintenance areas;
- Training of subcontractors on general construction area housekeeping;
- Construction scheduling to minimize soil disturbance during the wet weather season; and
- Regular maintenance and storm event monitoring.

Note that the SWPPP is a *living* document and should be kept current by the person responsible for its implementation. Preparation of, and compliance with a required SWPPP would effectively prevent Proposed Project onsite erosion and the loss of topsoil from Project implementation. This impact is less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No Impact.

As discussed previously, the Project Site has no potential for landslides due to the flat topography of the Site.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other *free* face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion and unconsolidated material or, more commonly, by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope, resulting in gravitationally driven movement. One indicator of potential lateral expansion is frost action. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. The Web Soil Survey identifies the Project Site as having soils with no classification for frost action potential. As such, the potential for impacts due to lateral spreading would be less than significant.

With the withdrawal of fluids, the pore spaces within the soils decrease, leading to a volumetric reduction. If that reduction is significant enough over an appropriately thick sequence of sediments, regional ground subsidence can occur. This typically only occurs within poorly lithified sediments and not within competent rock.[1] No oil, gas, or high-volume water extraction wells are known to be present in the Project

[1] The processes by which loose sediment is hardened to rock are collectively called lithification.

Site. According to the U.S. Geological Survey (USGS), the Project Site is not located in an area of land subsidence (USGS 2018). As such, the potential for impacts due to subsidence would be less than significant.

Collapse occurs when water is introduced to poorly cemented soils, resulting in the dissolution of the soil cementation and the volumetric collapse of the soil. In most cases, the soils are cemented with weak clay (argillic) sediments or soluble precipitates. This phenomenon generally occurs in granular sediments situated within arid environments. Collapsible soils will settle without any additional applied pressure when sufficient water becomes available to the soil. Water weakens or destroys bonding material between particles that can severely reduce the bearing capacity of the original soil resulting in damage to buildings and foundations. Because of the required compliance with the City's Improvement Standards, the CBC seismic mitigation standards and the distance from active faults the potential for that settlement/collapse at the site is considered unlikely. As such, there is no potential for impacts.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) 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?	☐	☐	☒	☐

Less than significant.

Expansive soils are types of soil that shrink or swell as the moisture content decreases or increases. Structures built on these soils may experience shifting, cracking, and breaking damage as soils shrink and subside or expand. Expansive soils can be determined by a soil's linear extensibility. There is a direct relationship between linear extensibility of a soil and the potential for expansive behavior, with expansive soil generally having a high linear extensibility. Thus, granular soils typically have a low potential to be expansive, whereas clay-rich soils can have a low to high potential to be expansive. The shrink-swell potential is low if the soil has a linear extensibility of less than three percent, moderate if three to six percent, high if six to nine percent, and very high if more than nine percent. If the linear extensibility is more than three, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. As shown in the Web Soil Survey, the Project Site soils exhibit a linear extensibility value of 1.5 and 1.2 percent. Soils with linear extensibility at this range correlate to having a low expansion potential. As such, the Project would have a less than significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

No impact.

The Proposed Project is a road rehabilitation and reconstruction in which underground lines would connect to the City wastewater sewer system and would not require the construction of septic tanks or alternative wastewater disposal systems. Thus, there is no impact associated with Project Site soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Less than significant with mitigation incorporated.

A search of the UCMP failed to indicate the presence of paleontological resources on the Project Site (UCMP 2023). Although paleontological resources sites were not identified in the Project Site, there is a possibility that unanticipated paleontological resources will be encountered during Project construction and related ground-disturbing activities. Therefore, impacts to unknown paleontological resources would be less than significant with incorporation of Mitigation Measure **GEO-1**.

4.7.3 Mitigation Measures

GEO-1: Paleontological or Sensitive Geologic Resource Discovery.

If paleontological or other geologically sensitive resources are identified during any phase of development including roadway development and future developments on the Project Site, the applicant shall cease operation at the site of the discovery and immediately notify the City. The future Project proponent shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less than significant level. In considering any suggested mitigation proposed by the qualified paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the development site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Orland and construction lead*

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

GHG emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Estimates of GHG emissions are often presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

The CEQA Guidelines Appendix G thresholds for GHG's do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The City of Orland General Plan (2010) acknowledges the necessity to quantify, manage, and reduce its contributions to GHG emissions in order to help protect the health of the community, ecosystems, and biodiversity from the effects of climate change. More specifically, Policy 5.5.A aims to comply with the AB 32 Scoping Plan and its governing regulations to the full extent of the City's abilities, and Policy 5.5.G plans to continue to monitor the efforts of CARB and other organizations responsible for the preparation of GHG-reducing standards. However, neither the City of Orland nor the GCAPCD promulgate GHG emission thresholds. Therefore, the Project will be assessed for consistency with GHG significance thresholds promulgated by the SMAQMD. While air quality standards established in Sacramento County are not binding on Glenn County or the City of Orland, they are instructive for comparison purposes.

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less than Significant Impact.

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 4.8-1 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 4.8-1. Construction Related Greenhouse Gas Emissions

Description	**CO_2e Emissions (Metric Tons/Year)**
Construction Year One	327
Construction Year Two	400
Significance Threshold	*1,100*
Exceed Threshold?	**No**

Sources: CalEEMod version 2022.1. Refer to Attachment 4.3 for Model Data Outputs

As shown in Table 4.8-1, construction-generated emissions would not exceed the Project significance threshold. Once construction is complete, the generation of these GHG emissions would cease. Due to the nature of the Project being a construction only project, operational GHG emissions were not addressed and therefore there would be no impact associated with operational emission.

For these reasons, this impact is found to be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

No Impact.

The City of Orland has not established any specific plans for the purpose of reducing GHG emissions. The Proposed Project would not conflict with any of the plans and policies set out by the City's General Plan. Within the General Plan, Policy 5.5.A aims to comply with the AB 32 Scoping Plan and its governing regulations to the full extent of the City's abilities. The CEQA GHG thresholds developed by the SMAQMD are developed in compliance with AB 32 Scoping Plan. As shown in Table 4.8-1, the Proposed Project would be under the construction GHG thresholds set out by the SMAQMD. Therefore, the Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. No impact would occur.

4.8.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code, § 25501 as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A hazardous material is defined in Title 22, § 662601.10, of the CCR as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

Under Government Code § 65962.5, both the Department of Toxic Substances Control (DTSC) and the State Water Resource Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their

websites. A search of the DTSC (2022) and SWRCB (2022) lists identified no open cases of hazardous waste violations on, or within ½ mile of the Project Site.

The USEPA maintains the Enforcement and Compliance History Online (ECHO) program. The ECHO website provides environmental regulatory compliance and enforcement information for approximately 800,000 regulated facilities nationwide. The ECHO website includes environmental permit, inspection, violation, enforcement action, and penalty information about USEPA-regulated facilities. Facilities included on the site are CAA stationary sources; Clean Water Act facilities with direct discharge permits, under the National Pollutant Discharge Elimination System (NPDES); generators and handlers of hazardous waste, regulated under the Resource Conservation and Recovery Act; and public drinking water systems, regulated under the Safe Drinking Water Act. ECHO also includes information about USEPA cases under other environmental statutes. When available, information is provided on surrounding demographics, and ECHO includes other USEPA environmental data sets to provide additional context for analyses, such as Toxics Release Inventory data. According to the ECHO program, the Project Site is not listed as having a hazardous materials violation (USEPA 2022).

4.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

Less than significant.

Some hazardous materials, such as diesel fuel, would be temporarily used at the Project Site during construction. The transport of hazardous materials by truck is regulated by federal safety standards under the jurisdiction of the U.S. Department of Transportation. The use of such materials for the construction of the Proposed Project would be temporary and would not create a significant hazard to the public. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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?	☐	☐	☒	☐

Less than significant.

As discussed in Issue a), the Project would not result in the routine transport, use, disposal, handling, or emission of any hazardous materials that would create a significant hazard to the public or the environment. Potential construction-related hazards could be created during the course of Project construction, given that construction activities involve the use of heavy equipment, which uses small and incidental amounts of oils and fuels and other potentially flammable substances. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials used during construction. The construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be implemented such that any materials released are appropriately contained and remediated as required by local, state, and federal law.

All hazardous materials on the Project Site would be handled in accordance with city and state regulations. Therefore, this impact would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No impact.

The nearest public school to the Project Site is Orland High School, approximately 1 mile from the Project Site. Therefore, the Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) 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?	☐	☐	☐	☒

No impact.

Under Government Code § 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC and SWRCB lists identified no open cases of hazardous waste violations on the Project Site. Therefore, the Project Site is not on a parcel included on a list of hazardous

materials sites compiled pursuant to Government Code § 65962.5 (DTSC 2022 SWRCB 2022). As a result, this would not create a significant hazard to the public or to the environment and would have no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) 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 for people residing or working in the Project Site?	☐	☐	☐	☒

No impact.

The Orland Haigh Field Airport is approximately 2.4 miles southeast of the Project Site. The Project Site is not located in the airport's safety areas as shown on Map 2 of the Comprehensive Airport Land Use Plan for the Orland Haigh Field Airport (Glenn County Airport Land Use Commission 1991). Furthermore, the Project is a road rehabilitation and reconstruction Project and does not propose any new structures which may impede aircraft operations. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

No impact.

Standard evacuation routes have not been designated in Glenn County or Orland. However, the Glenn County Sheriff's Office of Emergency Services has an online link to an emergency preparedness web page stating that in the event of mandatory evacuation, residents will be advised of safe routes to follow, locations of shelters, and other actions that may need to be taken.

According to the Orland General Plan DEIR, it is likely that Caltrans facilities such as SR 32 and I-5 would be used to evacuate the community in an emergency. Major county roads such as Sixth Street (County Road 99W) and South Street are also suited to evacuation, depending on the location of the emergency (City of Orland 2010b).

The Proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. All construction activities would not impede the use of surrounding roadways in an emergency evacuation. The Project involves the rehabilitation and reconstruction of Road M½ and would not impede or restrict an emergency response or evacuation plan actions. Implementation of the Proposed Project would result in no impact and would not impair emergency evacuation plans.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Less than significant.

The Project Site is not in an area designated by California Department of Forestry and Fire Protection (CAL FIRE, 2007) as a Fire Hazard Severity Zone. Furthermore, no Very High Fire Hazard Severity Zones are located nearby. Finally, the location of the Project Site is readily accessible by emergency personnel and vehicles in the event of a wildland fire. For these reasons, this impact would be less than significant.

4.9.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

4.10.1.1 Regional Hydrology

Surface Water

The City of Orland is located in the greater Sacramento River hydrologic region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Butte, Colusa, El Dorado, Glenn, Glenn, Lake, Lassen, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Solano, Sutter, Tehama, Yolo, Yuba counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border to the Sacramento-San Joaquin Delta (DWR 2006).

The City of Orland and the Project Site are located within the boundaries of the Stony Creek watershed. The Stony Creek watershed encompasses approximately 700 square miles and is the second largest Sacramento River tributary on the west side of the Sacramento Valley (City of Orland 2010b). There are three major impoundments on Stony Creek: Black Butte, East Park, and Stony Gorge reservoirs.

Groundwater

The Project Site is underlain by the Sacramento Valley Groundwater Basin and the Colusa Subbasin (DWR 2022a). The City of Orland uses groundwater as the source for potable water in the city. This groundwater is extracted from the Colusa Groundwater Subbasin. According to the California DWR, the Colusa Subbasin covers an area of approximately 1,434 square miles (918,380 acres) (DWR 2006). The storage capacity of the subbasin was projected based on estimates of specific yield for the Sacramento Valley as developed in DWR Bulletin 118 (DWR 2006). The estimated storage capacity to a depth of 200 feet is

approximately 13,025,887 acre-feet or 4.24 trillion gallons. Estimates of groundwater extraction for the Colusa Subbasin are based on surveys conducted by the California DWR during 1993, 1994, and 1999. Surveys included land use and sources of water. Estimates of groundwater extraction for agricultural, municipal, and industrial, and environmental wetland uses are 310,000 acre-feet (AF), 14,000 AF, and 22,000 AF, respectively. Deep percolation from applied water is estimated to be 64,000 AF. The DWR has not identified the Colusa Subbasin as overdrafted in its DWR Bulletin 118. Also, there has been no indication of any existing or anticipated overdraft condition in studies prepared by other entities (DWR 2006).

The DWR Sustainable Groundwater Management Act (SGMA) provides groundwater levels throughout the state. Among other things, this interactive online tool can illustrate the change in groundwater depth of a certain time period for a particular location, such as the City of Orland. According to the SGMA information, the distance from groundwater to ground surface in the Project Site has increased by approximately 120 feet between spring 2011 and spring 2021. In other words, the groundwater water surface was 30 feet below ground surface (bgs) in 2008 and was approximately 150 feet below ground surface in 2021 (DWR 2022b).

Table 4.10-1. Depth to Groundwater

Year	Season	
	Spring (ft bgs[1])	Fall (ft bgs[1])
2011	30	n/a
2012	40	n/a
2013	40	90
2014	90	90
2015	100	100
2016	100	100
2017	90	100
2018	100	110
2019	100	80
2020	80	120
2021	150	N/A

Source: DWR 2022b
Note: 1) ft bgs = feet below ground surface

The SGMA directs DWR to identify groundwater basins and subbasins in conditions of critical overdraft. As defined in the SGMA, "A basin is subject to critical overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts." The Colusa groundwater subbasin is not listed as a critically overdrafted

basin (DWR 2018a). DWR is currently working on an update to the Bulletin 118 groundwater report. However, more up-to-date information of the Colusa subbasin is not available at this time.

4.10.1.2 Site Hydrology and On-Site Drainage

The are no existing natural hydrological features in or on the 1.0-acre Project Site. There is an irrigation canal adjacent to the northern boundary of the Project Site that Road M ½ crosses over with a surface grade crossing. As shown in Figure 4b, reconstruction of the proposed roadway would result in the undergrounding of 12-inch diameter perforated piping to drain into a standard concrete drop inlet (catch basin) located on the western side of Road M ½ at the curb.

The topography of the Site is flat with little elevation change, varying from approximately 243 feet to 250 feet AMSL over the 1.0-acre Site. Upon completion of the Proposed Project, the Project Site topography would be the same as pre-Project conditions.

Orland experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 8.9 months, from September 17 to June 15, with a sliding 31-day rainfall of at least 0.5 inch. The most rain falls during the 31 days centered around February 16, with an average total accumulation of 5.9 inches. The rainless period of the year lasts for 3.1 months, from June 15 to September 17. The least rain falls around July 31, with an average total accumulation of 0.2 inches (Weather Atlas 2022).

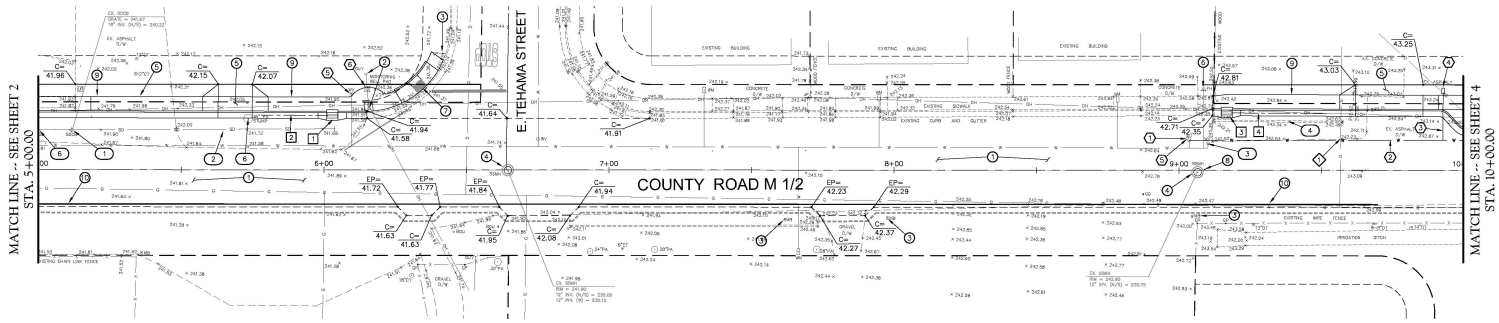
The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project Site (Map No. 06021C0400D) shows that the Project Site is in unshaded Zone X, meaning that the area is outside of the 0.2 percent annual chance (500-year) floodplain (FEMA 2011).

4.10.2 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐

Less than significant.

In accordance with NPDES regulations, the State of California requires that any construction activity affecting 1.0 acre or more obtain a General Construction Activity Stormwater Permit (General Permit) to minimize the potential effects of construction runoff on receiving water quality. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ.



DEMOLITION NOTES

1. REMOVE AND DISPOSE OF EXISTING STORM DRAIN CATCH BASIN.
2. REMOVE AND DISPOSE OF ±104 LF OF EXISTING 18" DIA. CONCRETE STORM DRAIN PIPE
3. REMOVE AND DISPOSE OF EXISTING WATER MAIN BLOWOFF VALVE
4. REMOVE EXISTING CONCRETE MOW STRIP
5. REMOVE AND DISPOSE OF EXISTING TREE STUMP AND ROOTS LARGER THAN 1" DIA.
6. SEE DRAWING NO. 2 FOR ADDITIONAL INFORMATION

STORM DRAIN CONSTRUCTION NOTES

1. INSTALL CITY OF ORLAND STD. 401 TYPE "A" DROP INLET, FL= XXX.XX', GR= XXX.XX', 12" INV.= XXX.XX'
2. INSTALL 25 L.F. 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000
3. INSTALL CITY OF ORLAND STD. 401 TYPE "A" DROP INLET, FL= XXX.XX, GR= XXX.XX', 12" INV.= XXX.XX'
4. INSTALL 35 L.F. LF 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000

WATER CONSTRUCTION NOTES

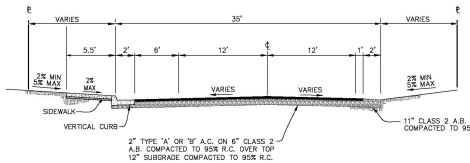
1. CONNECT TO EXISTING CITY WATER MAIN. CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION, SIZE AND DEPTH OF EXISTING WATER MAIN PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION
2. INSTALL ±380 L.F. 8" DIA. CL. 200 C900 PVC WATER PIPE
3. INSTALL ±17 L.F. 2" DIA. PVC WATER SERVICE PIPE AND FITTINGS PER CITY OF ORLAND STD. 307 SINGLE WATER SERVICE MAIN CONNECTION
4. INSTALL WATER METER BOX, LID AND EXTENSION SHALL BE CHRISTY CONCRETE PRODUCTS OR APPROVED EQUAL
5. ADJUST WATER VALVE LID TO FINISH GRADE
6. REMOVE EXISTING MONITORING WELL OBSERVATION PORT AND PAD, INSTALL NEW OBSERVATION PORT AND PAD AT PROPOSED FINISH GRADE, WITH NON SLIP COVERS

UTILITY PIPE CROSSING NOTES

1. 8" W INV. = UNKNOWN X" G INV. = UNKNOWN

CONSTRUCTION NOTES

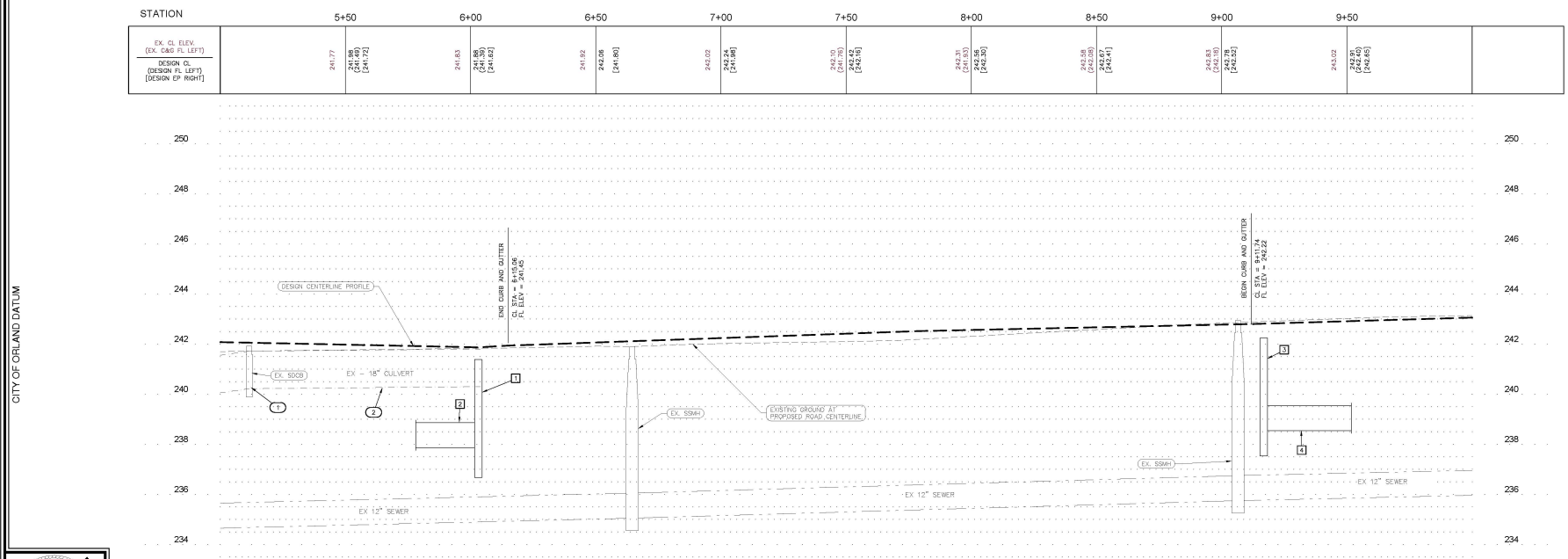
1. INSTALL 2" HMA COMPACTED TO 95% RELATIVE COMPACTION ON 6" CLASS 2 A.B. COMPACTED TO 90% RELATIVE COMPACTION OVER 12" OF SUBGRADE SCARIFIED AND COMPACTED TO 95% COMPACTION
2. USE CAUTION WHEN WORKING NEAR JOINT UTILITY POLE, GUY WIRE OR OVERHEAD LINE, PROTECT IN PLACE
3. PROTECT EXISTING SIGN POST OR MAILBOX IN PLACE
4. ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE
5. INSTALL CITY OF ORLAND STD. 205 RESIDENTIAL DRIVEWAY AND CONTIGUOUS SIDEWALK
6. PROTECT EXISTING FIRE HYDRANT IN PLACE
7. INSTALL CITY OF ORLAND STD. 207 CURB RAMP AND INSTALL CAST-IN-PLACE REMOVABLE TRUNCATED DOMES PER CAL-TRANS STANDARD SPECIFICATIONS. MODIFY GUTTER PAN SLOPE TO 5% OR LESS ADJACENT TO THE FULL WIDTH OF THE RAMP
8. PLACE BLUE REFLECTIVE MARKER AT CENTERLINE OF ROAD AT FIRE HYDRANT LOCATION PER CITY OF ORLAND STD. 301A
9. INSTALL CITY OF ORLAND STD. 204 CONTIGUOUS SIDEWALK, CURB AND GUTTER
10. SEE DRAWING NO. 2 FOR ADDITIONAL INFORMATION



TYPICAL STREET SECTION
(STA: 5+00.00 TO STA: 6+08.50 & STA: 9+11.77 TO STA: 10+00.00)
NO SCALE

THIS BAR ON THE ORIGINAL IS 2 INCHES LONG

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



DRAFT
REGISTERED PROFESSIONAL ENGINEER JEFFREY I. ROLLS No. 67162 CIVIL State of California

APPROVED	
DATE	JULY, 2022

PREPARED FOR :
CITY OF ORLAND

RAR
ROLLS ANDERSON & ROLLS
CIVIL ENGINEERS
115 YELLOWSTONE DRIVE · CHICO, CALIFORNIA 95973-9011 · TELEPHONE 530-895-1422

PLAN AND PROFILE
COUNTY ROAD M 1/2 REHGABILATION PROJECT

DESIGNED	DJB
DRAWN	CAD
CHECKED	JIR
DRAWING NO.	3 OF 5
JOB NO.	20014

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 4b. Site Plan
Road M1/2 Rehabilitation and Reconstruction Project

General Permit applicants are required to submit to the appropriate regional board Permit Registration Documents for the Project, which include a Notice of Intent (NOI), risk assessment, site map, signed certification statement, an annual fee, and a SWPPP. The SWPPP includes pollution prevention measures (i.e., erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, and a detailed construction timeline. The SWPPP must also include implementation of BMPs to reduce construction effects on receiving water quality by implementing erosion control measures and reducing or eliminating non-stormwater discharges.

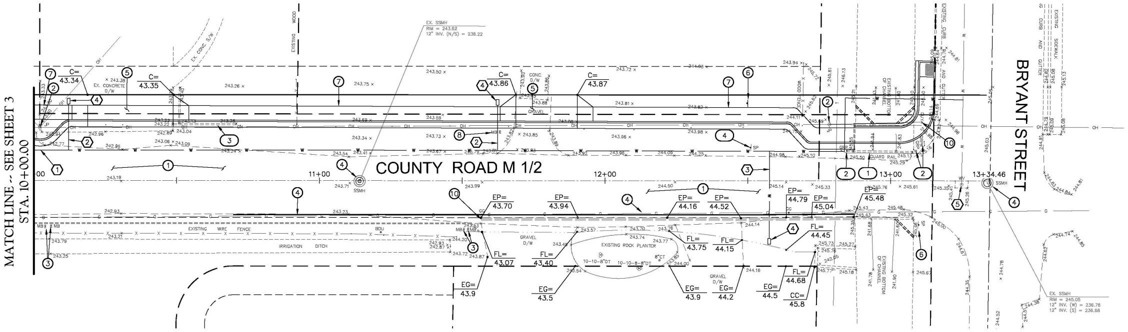
Examples of typical construction BMPs included in SWPPPs include, but are not limited to, using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutants from discharging to the drainage system or receiving waters. SWPPP BMPs are recognized as effective methods to prevent or minimize the potential releases of pollutants into drainages, surface water, or groundwater. Strict SWPPP compliance, coupled with the use of appropriate BMPs, would reduce potential water quality impacts during construction activities.

While there are no creeks, streams or rivers existing on the Project Site, there is an irrigation canal on the northern Project boundary to deliver water to adjacent agricultural fields when necessary (Figure 4C). The Proposed Project would be required to prepare and comply with an approved SWPPP. Compliance with this requirement would reduce the potential water quality impacts to less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Less than significant.

The City of Orland uses groundwater as the source for potable water in the City. This groundwater is extracted from the Colusa Groundwater Subbasin, part of the Sacramento Valley Groundwater Basin.



UTILITY PIPE CROSSING NOTES

- (A) XX" SD INV. = XXX.XX   XX" SS INV. = XXX.XX
- (B) XX" SD INV. = XXX.XX   XX" SS INV. = XXX.XX

DEMOLITION NOTES

1. REMOVE AND DISPOSE OF EXISTING GUARD RAIL
2. REMOVE AND DISPOSE OF EXISTING GUARD RAIL POST
3. REMOVE AND DISPOSE OF EXISTING CONCRETE MOW STRIP
4. REMOVE AND DISPOSE OF EXISTING SIGN POST AND RELOCATE EX. SIGN PER CONSTRUCTION NOTE # 6

STORM DRAIN CONSTRUCTION NOTES

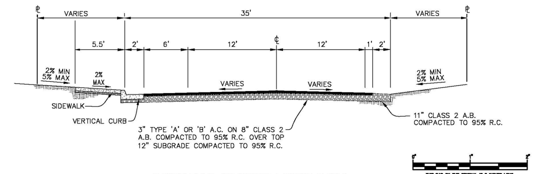
1. INSTALL CITY OF ORLAND STD. 401 TYPE "A" DROP INLET, FL= XXX.XX', GR= XXX.XX', 12" INV.= XXX.XX'
2. INSTALL 35 L.F. 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000
3. INSTALL CITY OF ORLAND STD. 401 TYPE "A" DROP INLET, FL= XXX.XX, GR= XXX.XX', 12" INV.= XXX.XX'
4. INSTALL 40 L.F. LF 12" DIA. HDPE PERFORATED S.D. PIPE, S=0.0000

WATER CONSTRUCTION NOTES

1. SEE DRAWING NO. 3 FOR ADDITIONAL INFROMATION
2. INSTALL ±16 L.F. 2" DIA. PVC WATER SERVICE PIPE AND FITTINGS PER CITY OF ORLAND STD. 307 SINGLE WATER SERVICE MAIN CONNECTION
3. INSTALL ±31 L.F. 2" DIA. PVC WATER SERVICE PIPE AND FITTINGS PER CITY OF ORLAND STD. 307 SINGLE WATER SERVICE MAIN CONNECTION
4. INSTALL WATER METER BOX, LID AND EXTENSION SHALL BE CHRISTY CONCRETE PRODUCTS OR APPROVED EQUAL.
5. ADJUST WATER VALVE LID TO FINISH GRADE

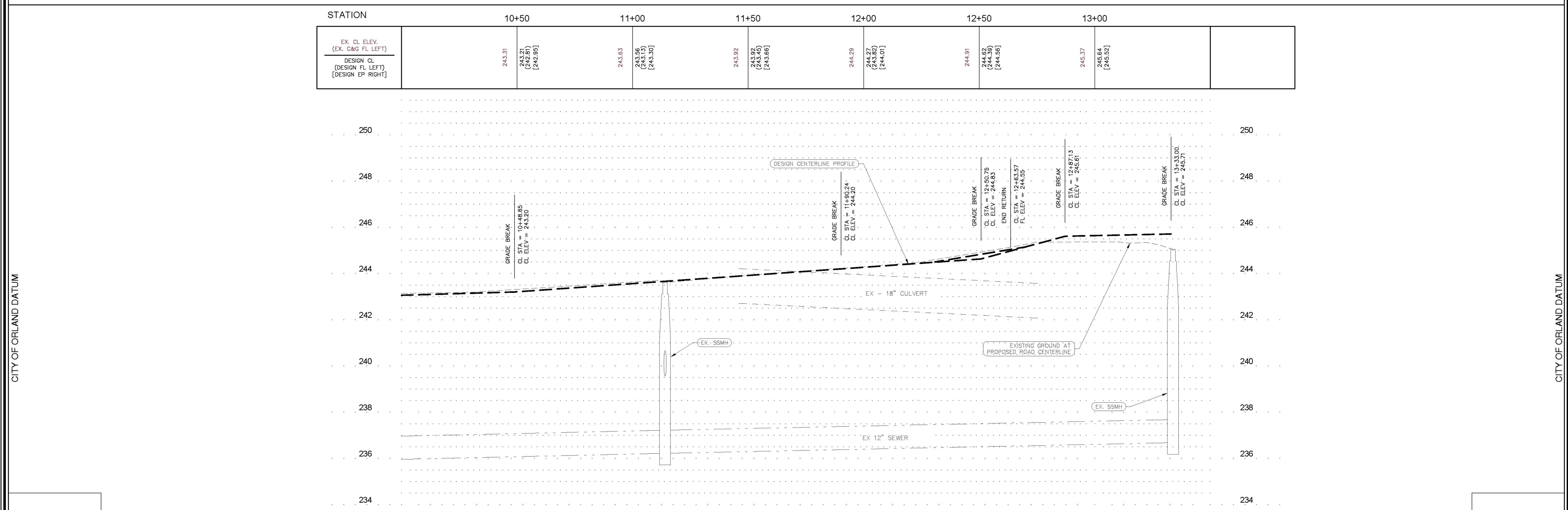
CONSTRUCTION NOTES

1. INSTALL 2" HMA COMPACTED TO 95% RELATIVE COMPACTION ON 6" CLASS 2 A.B. COMPACTED TO 95% RELATIVE COMPACTION OVER 12" OF SUBGRADE SCARIFIED AND COMPACTED TO 95% COMPACTION
2. USE CAUTION WHEN WORKING NEAR JOINT UTILITY POLE
3. PROTECT EXISTING SIGN POST OR MAILBOX IN PLACE
4. ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE
5. INSTALL CITY OF ORLAND STD. 205 RESIDENTIAL DRIVEWAY AND CONTIGUOUS SIDEWALK
6. INSTALL XXXX SIGN PER CITY OF ORLAND STD. 601
7. INSTALL CITY OF ORLAND STD. 204 CONTIGUOUS SIDEWALK, CURB AND GUTTER
7. RELOCATE EXISTING MAILBOX
8. INSTALL ±181 LF OF CALTRANS A20B, DETAIL 27B 4" WHITE THERMOPLASTIC RIGHT EDGE LINE
9. INSTALL ±131 LF OF CALTRANS A87B, TYPE E ASPHALT DIKE AND PLACE CLASS 2 A.B. COMPACTED 95% RELATIVE COMPACTION OVER 12" OF SUBGRADE SCARIFIED AND COMPACTED TO 95% COMPACTION FROM THE TOP OF THE ASPHALT DIKE TO THE PROPOSED FLOWLINE
10. RELOCATE EXISTING GUY WIRE



TYPICAL STREET SECTION
(STA: 10+00.00 TO STA: 12+75.08)
NO SCALE

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



APPROVED	PREPARED FOR :	RAR ROLLS ANDERSON & ROLLS CIVIL ENGINEERS 115 YELLOWSTONE DRIVE • CHICO, CALIFORNIA 95973-5811 • TELEPHONE 530-895-1422	PLAN AND PROFILE	DESIGNED DJB
	CITY OF ORLAND		ROAD M 1/2 REHABILITATION PROJECT	DRAWN CAD
DATE JULY, 2022				CHECKED JIR
				DRAWING NO. 4 OF 5
				JOB NO. 20014

DRAFT

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 4c. Site Plan
Road M1/2 Rehabilitation and Reconstruction Project

The Proposed Project would not increase the demand for groundwater in the City due to the nature of the Project being a roadway rehabilitation and reconstruction project. Additionally, the Proposed Project would not remove any of the Site's groundwater recharge area due to the amount of impervious surfaces remaining essentially the same. Current conditions do not allow for the efficient redirecting of stormwater away from the Project Site as there are no ditches along the roadway to transport stormwater. However, according to the *Orland General Plan Update EIR* (City of Orland 2010b), the majority of groundwater recharge in the city comes from Stony Creek. Development of this area would not affect the recharge ability of Stony Creek and the Project would have a less than significant impact on groundwater recharge.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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 that would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) 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	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐

Less than significant.

i) No creeks, streams or rivers exist within the Project Site. As such, siltation of on- or offsite waterways would not occur.

The roadway rehabilitation and reconstruction activities would result in soil disturbances of at least one acre of total land area. As such, an NPDES Construction General Permit would be required prior to the start of construction. Excavation and grading activities associated with the Proposed Project will reduce vegetative cover and expose bare soil surfaces making these surfaces more susceptible to erosion. To comply with the requirements of the NPDES Construction General Permit, the Project applicant will be required to file an NOI with the State of California and submit a SWPPP defining BMPs for construction and post-construction-related control of the Proposed Project Site runoff and sediment transport. Requirements for the SWPPP

include incorporation of both erosion and sediment control BMPs. SWPPP generally include the following applicable elements:

- Diversion of offsite runoff away from the construction area;
- Prompt revegetation of proposed landscaped areas;
- Perimeter straw wattles or silt fences and/or temporary basins to trap sediment before it leaves the site;
- Regular sprinkling of exposed soils to control dust during construction during the dry season;
- Installation of a minor retention basin(s) to alleviate discharge of increased flows;
- Specifications for construction waste handling and disposal;
- Erosion control measures maintained throughout the construction period;
- Preparation of stabilized construction entrances to avoid trucks from imprinting debris on city roadways;
- Contained wash out and vehicle maintenance areas;
- Training of subcontractors on general construction area housekeeping;
- Construction scheduling to minimize soil disturbance during the wet weather season; and
- Regular maintenance and storm event monitoring.

Note that the SWPPP is a *living* document and should be kept current by the person responsible for its implementation. Preparation of, and compliance with a required SWPPP would effectively prevent Proposed Project onsite erosion and sediment transport offsite. This will reduce potential runoff, erosion, and siltation associated with construction and operation of the Proposed Project. The effects of the Proposed Project on onsite and offsite erosion and siltation, therefore, would be less than significant.

ii) Implementation of the Proposed Project would minimally alter the existing drainage patterns on the Site by adding a slight increase of impermeable surface to portions of the Project Site in the form of proposed sidewalks. Impervious surfaces will allow stormwater to move more quickly through the Project Site, increasing the rate of runoff. However, all new development would be required to comply with city storm drainage regulations, including Policy 4.2.A.2 of the General Plan which requires that all new development projects be designed to avoid increases in peak storm runoff levels. Therefore, the Proposed Project would have a less than significant impact on causing flooding on- or offsite.

iii) See discussion of Issues i) and ii), above. The Project Site would be graded to direct stormwater flows to existing and proposed drainage facilities. All future commercial development would be required to provide curbs, gutters and sidewalks along their street frontage as required by City code. Runoff from the Project Site is not expected to increase significantly from existing levels and

proposed stormwater drainage facilities are anticipated to be able to manage stormwater run-off for the area. As such, this impact would be considered less than significant.

Activities associated with the implementation of the Proposed Project are not expected to generate substances that can degrade the quality of water runoff. While potential impacts could result from vehicles and other users at the Proposed Project Site during construction, all potential impacts to water quality would be reduced by stormwater pollution control measures and wastewater discharge BMPs required at the Project Site as a part of Project construction. Therefore, impacts during operation would be considered less than significant.

iv) FEMA flood hazard maps (Map 06021C0400D) show that the Project Site is in unshaded Zone X. The Project Site is not located within a flood zone. Therefore, implementation of the Proposed Project will have a less than significant impact related to impeding or redirecting flood flows.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

No impact.

The Project Site is not protected by levees from any flood hazard. There are no natural waterways in or adjacent the Project Site. No large bodies of water exist near the Proposed Project Site. The Project Site is not located within a potential tsunami or seiche inundation area. Damage due to a seiche, a seismic-induced wave generated in a restricted body of water would not occur.

Dam failure, the collapse or failure of an impoundment that causes significant downstream flooding, is a potential hazard for Orland. Flooding of the area below Black Butte Dam may occur as a result of structural failure of the dam or overtopping. The collapse and structural failure of a dam may be caused by a severe storm, earthquakes, or internal erosion of piping caused by embankment and foundation leakage. Larger dams whose waters could inundate significant portions of the City include the Shasta Dam in Shasta County and Black Butte Dam on Stony Creek. Black Butte Dam is subject to flooding the City of Orland Planning Area in approximately two hours in the event of a dam failure.

Black Butte Dam is a federal dam project and is owned, operated, and maintained by the USACE. USACE's dam safety professionals carry out a dam safety program which provides continuous assessment of the dam structure and operation. Therefore, an event such as the failure of Black Butte Dam has an extremely low probability of occurring and is not considered to be a reasonably foreseeable event and there would be no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Less than significant.

The City of Orland is a participating member of the Glenn Groundwater Authority formed in 2017. However, the Groundwater Sustainability Plan anticipated to be completed sometime in 2022, has yet to be finalized (Glenn County 2019). As such, the Project would have no impact to a groundwater management plan.

The Project Site is also located within the Water Quality Control Plan (Basin Plan) for the Central Valley Region - Sacramento River Basin (DWR 2018b). However, as stated under Item C) above, the Project is obliged to comply with water quality protection requirements of the NPDES Construction General Permit BMPs for construction and post-construction-related control of the Proposed Project Site runoff and sediment transport. Compliance with these requirements would eliminate the potential for conflicts with the water quality control plan. As such, the Project would have a less than significant impact in this area.

4.10.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.11 Land Use and Planning

4.11.1 Environmental Setting

The 1.0-acre Site is within the Orland General Plan Low-Density Residential land use designation and identified for Community Commercial and Residential One-Family uses in the General Plan. The Proposed Project does not consist of any changes in land uses as the components of the Project consist of rehabilitating and reconstructing an existing roadway with no structural development included. Surrounding uses include several single-family homes fronting Road M ½ on both sides of the central and northern portions of the Site, and Butte College Glenn County Branch and Greg's Heating and A/C along either side of the southern segment of the Project. See Figure 3 for surrounding uses.

4.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

No impact.

The Project Site is located on the outer edge of the City limits and therefore would not divide an existing community. The Project would be accommodated by existing roadways and would not require construction of new roadways that would preclude access to the surrounding area. The Project would be consistent with the existing land use designations as no changes to land uses are included as part of the Project. As such, the Proposed Project would not physically divide an established community, and no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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?	☐	☐	☐	☒

No impact.

As explained above, the Project is consistent with the City of Orland General Plan land use designations. The Project would rely on the General Plan policies and actions, especially those adopted to assist in the protection of the environment. As analyzed in each section of this IS/MND, the Project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

4.11.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.12 Mineral Resources

4.12.1 Environmental Setting

The State-mandated Surface Mining and Reclamation Act of 1975 requires the identification and classification of mineral resources in areas within the State subject to urban development or other irreversible land uses that could otherwise prevent the extraction of mineral resources. These designations categorize land as Mineral Resource Zones (MRZ) MRZ-1 through MRZ-4.

Stony Creek is located on the northern border of the City. Lower Stony Creek traverses its alluvial fan from Black Butte Dam to the Sacramento River, following one of three major fingers of gravelly soil that represent former channel courses. In-stream gravel mining has been particularly intensive in Lower Stony Creek. Generally, Stony Creek aggregates consist of stream channel deposits, including flood and over bank deposits in the upper reaches, and are classified as MRZ-2a (marginal reserves) (City of Orland 2010b). However, there is currently no mining activity occurring within, nor is it allowed in, the Project vicinity. Furthermore, the Orland General Plan does not identify any mineral resource zones within the City of Orland (City of Orland 2010a).

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒

No impact.

As discussed above, the City's existing General Plan does not identify any mineral resources in the Project vicinity, including on the Project Site. Therefore, no impacts would occur to mineral resources.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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?	☐	☐	☐	☒

No impact.

The Project Site is not identified as a mineral resource recovery site in the Orland General Plan. There would be no impact in this area.

4.12.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.13 Noise

4.13.1 Environmental Setting

4.13.1.1 Noise Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average Leq with a 5-dBA weighting during the hours of 7:00 p.m. to 10:00 p.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations.

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 decibels (dB) for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed (FHWA 2011).

The manner in which older structures in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer structures is generally 30 dBA or more (Harris Miller Miller & Hanson Inc. 2006).

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high, above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night

can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1.0 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3.0-dBA change is considered a just-perceivable difference.
- A change in level of at least 5.0 dBA is required before any noticeable change in community response would be expected. An increase of 5.0 dBA is typically considered substantial.
- A 10.0-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Sensitive Noise Receptors

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest existing noise-sensitive land uses to the Project Site are several residences fronting Road M ½, located directly adjacent to the Project's eastern and western boundaries.

4.13.1.2 Vibration Sources and Characteristics

Ground vibration can be measured several ways to quantify the amplitude of vibration produced, including through peak particle velocity (PPV) or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively. Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

4.13.1.3 Existing Ambient Noise Environment

There are several significant noise sources in the City of Orland. Mobile sources of noise, especially cars and trucks traveling on area roadways, are the most common and significant noise in the Project Site. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational) throughout the City that generate stationary-source noise. The Project Site is bound by

residences and Bryant Street to the north, residences and a heating and A/C service center to the east, SR 32 and an auto sales center to the south, and residences and a school to the west.

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in Ldn, daytime Leq, and nighttime Leq, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 3.13-1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "95% prediction interval [confidence interval] is on the order of +/- 10 dB." The majority of the Project Site would be considered ambient noise Category 4.

Table 4.13-1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67 dBA	66 dBA	58 dBA
2	Moderate Commercial & Industrial Areas and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62 dBA	61 dBA	54 dBA
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass-transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic, compose this category.	6,384	57 dBA	55 dBA	49 dBA

Table 4.13-1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density						
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52 dBA	50 dBA	44 dBA
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small-wooded valley.	638	47 dBA	45 dBA	39 dBA
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42 dBA	40 dBA	34 dBA

Source: ANSI 2013

4.13.2 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in 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?	☐	☒	☐	☐

Less than Significant With Mitigation Incorporated.

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The nearest noise sensitive receptors to the Project Site are several residences fronting County Road M 1/2, located directly adjacent to the Project's eastern and western boundary.

Onsite Construction Noise Impacts

Construction noise associated with the Proposed Project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., grading, earthwork, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

Nearby noise-sensitive land uses consist of residences directly adjacent to the western and eastern Project Site boundary. City of Orland General Plan Policy 6.1.J prohibits construction between the hours of 5:00 p.m. and 7:00 a.m. unless an exemption is received from the City to cover special circumstances. Additionally, Policy 6.1.I of the City of Orland General Plan states that noise associated with construction activities shall be exempt from the City's noise standards. The City does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptor and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Federal Highway Administration's Roadway Noise Construction Model (RCNM) and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by National Institute for Occupational Safety and Health (NIOSH). A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs Federal Transit Administration (FTA) guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment operating simultaneously from the center of the Project Site (FTA 2018), which in

this case is approximately 50 feet distant from the nearest sensitive receptor. The anticipated short-term construction noise levels generated for the necessary equipment is presented in Table 4.13-2.

Table 4.13-2. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Nearest Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Grubbing and Land Clearing			
Crawler Tractors	80.0	*85*	**No**
Excavators	76.7	*85*	**No**
Combined Grubbing and Land Clearing Equipment	**81.7**	*85*	**No**
Grading and Excavation			
Crawler Tractor	80.0	*85*	**No**
Excavators (3)	76.7 (each)	*85*	**No**
Graders	81.0	*85*	**No**
Rollers (2)	73.0 (each)	*85*	**No**
Rubber Tired Loaders	75.1	*85*	**No**
Scrapers (2)	79.6 (each)	*85*	**No**
Tractors/Loaders/Backhoes (2)	73.6 (each)	*85*	**No**
Combined Grading and Excavation Equipment	**88.3**	***85***	**Yes**
Drainage, Utilities, and Sub-Grade			
Air Compressors	73.7	*85*	**No**
Generator Sets	77.6	*85*	**No**
Graders	81.0	*85*	**No**
Plate Compactors	76.2	*85*	**No**
Pumps	77.9	*85*	**No**
Rough Terrain Forklifts	79.4	*85*	**No**
Scrapers (2)	79.6 (each)	*85*	**No**
Tractors/Loaders/Backhoes (2)	73.6 (each)	*85*	**No**
Combined Drainage, Utilities, and Sub-Grade Equipment	**87.8**	***85***	**Yes**
Paving			
Pavers	74.2	*85*	**No**
Paving Equipment	74.2	*85*	**No**
Rollers (3)	73.0 (each)	*85*	**No**
Tractors/Loaders/Backhoes (2)	73.6 (each)	*85*	**No**
Combined Paving Equipment	**82.0**	***85***	**No**

Table 4.13-2. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Nearest Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment 4.13 for Model Data Outputs.

Notes: Construction equipment used during construction provided by the Project applicant. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project Site (FTA 2018), which is approximately 50 feet from the nearest residence.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 4.13-2, during construction activities no individual piece of construction equipment would exceed the NIOSH threshold of 85 dBA L_{eq} at the nearest receptors to construction activities. However, cumulatively construction equipment would exceed the NIOSH standard, which may cause negative health effects due to construction noise, during the grading and excavation as well as the drainage, utilities, and sub-grade phase. It is recommended that the implementation of temporary noise barriers be used during Project construction. Noise barriers or enclosures can provide a sound reduction of 35 dBA or greater (WEAL 2000). To be effective, a noise enclosure/barrier must physically fit in the available space, must completely break the line of sight between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In the case of Project construction, an enclosure/barrier would only be necessary at the area of the construction site where noise producing activities are being performed. Thus, mitigation measure **NOI-1** and **NOI-2**, which requires construction-noise reducing best management practices including the use of temporary noise barriers, is required. Implementation of mitigation measure **NOI-1** and **NOI-2** would substantially reduce construction-generated noise levels. As previously described, noise barriers or enclosures such as the one-inch plywood or sound blankets required in mitigation measure **NOI-2** can provide a sound reduction 35 dBA or greater (WEAL 2000), which would be a reduction robust enough to maintain construction noise levels less than 85 dBA. Temporary noise barriers can consist of a solid plywood fence and/or flexible sound curtains, such as an 18-ounce tarp or a 2-inch-thick fiberglass blanket attached to chain link fencing.

Project construction activities would not expose persons to and generate noise levels in excess of the applicable standards with implementation of mitigation measure **NOI-1** and **NOI-2.** Additionally, mitigation measure **NOI-1** and **NOI-2** ensures no health-related effects (physical damage to the ear) would occur at vicinity residential receptors as a result of Project construction. A less than significant impact with mitigation incorporated would occur.

Operational Noise Impacts

As described previously, due to the nature of the Project consisting of rehabilitating and reconstructing existing Road M 1/2, an operational component is not included in this Project. Once construction is complete, the Project Site would not generate noise beyond current conditions. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Less than Significant Impact.

Construction-Generated Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term construction-related activities. Construction in the Project Site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment at 25 feet distant are summarized in Table 4.13-3.

Table 4.13-3. Typical Construction Equipment Vibration Levels

Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)
Large Bulldozer	0.089
Pile Driver	0.170
Caisson Drilling	0.089
Loaded Trucks	0.076
Rock Breaker	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: FTA 2018; Caltrans 2020

The City does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020) recommended standard of 0.3 inches per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

Consistent with FTA recommendations for calculating vibration generated from construction equipment, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction site are residences located approximately 50 feet west of the Project Site center.

Based on the representative vibration levels presented for various construction equipment types in Table 4.13-3 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the potential Project construction vibration levels (FTA 2018). The FTA provides the following equation:

$$[PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}]$$

Table 4.13-4 presents the expected Project-related vibration levels at a distance of 50 feet.

Table 4.13-4. Construction Vibration Levels at 50 Feet

Receiver PPV Levels (in/sec)[1]								
Large Dozer, Caisson Drilling, & Rock Breaker	Pile Driver	**Loaded Trucks**	**Jack-hammer**	**Small Dozer**	**Roller**	**Peak Vibration**	**Threshold**	**Exceed Threshold**
0.0315	0.0601	0.0269	0.0124	0.0011	0.0742	**0.0742**	0.3	**No**

Notes: [1]Based on the Vibration Source Levels of Construction Equipment included in Table 4.13-3 above (FTA 2018). Distance to the nearest structure of concern is approximately 50 feet measured from Project Site center.

As shown in Table 4.13-4, vibration as a result of construction activities would not exceed 0.3 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold. A less than significant impact would occur.

4.13.2.1 Operational Groundborne Vibration

Project operations would not include the use of any stationary equipment that would result in excessive groundborne vibration levels. Therefore, the Project would not result groundborne vibration impacts during operations. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No impact.

The Project Site is located approximately 1.8 miles northwest of the Haigh Field Airport. According to Figure 6-1 of the City's General Plan, Orland Haigh Field Airport Noise Contour Lines, the Project Site is located outside of the 55 CNEL Noise Contour. Thus, the Proposed Project would not expose people working in the Project Site to excess airport noise levels. No impact would occur.

4.13.3 Mitigation Measures

NOI-1: Construction Activity Requirements. The Project improvement plan will include the following requirements for construction activities:

- Construction contracts must specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state-required noise attenuation devices.
- As applicable, all equipment shall be shut off when not in use.
- Equipment staging shall be located in areas that create the greatest distance between construction-related noise/vibration sources and receptors surrounding the Project Site.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from receptors nearest the Project Site.
- Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away from receptors. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and the nearest off-site receptors. The shielding should be without holes and cracks.
    - Per Policy 6.1.J of the City's General Plan, construction activities shall be limited to the hours of 7:00 a.m. to 5:00 p.m. unless an exemption is received from the City to cover special circumstances.

NOI-2: **Temporary Noise Barrier**. In order to reduce construction noise at sensitive residential receptors within 50 feet of Project construction, a temporary noise barrier or enclosure shall be positioned between construction equipment and all residences within 50 feet of construction activities in a manner that breaks the line of sight between the construction equipment and these residences to the extent feasible. The composition, length, height, and location of temporary noise barrier walls should be adequate to assure proper acoustical performance and withstand structural failure.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *The City of Orland and construction lead.*

4.14 Population and Housing

4.14.1 Environmental Setting

According to the California Department of Finance (DOF), which provides estimated population and housing unit demographics by year throughout the state, the City's population increased 16.8 percent between 2010 and 2022, from 7,291 to 8,267. DOF estimates that there were 2,978 total housing units in the City, and a 4.0 percent vacancy rate as of January 1, 2022. The average household size was estimated to be 2.89 persons per household during the same time period. (DOF 2022).

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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)?	☐	☐	☐	☒

No impact.

No new roads or extensions of existing roads are proposed. The Project does not include the construction of any new homes and no increase to employment opportunities. Therefore, direct or indirect increases in population growth would not occur as a result of the Proposed Project.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No impact.

The Project Site is an existing roadway. No residences would be removed as a result of the Proposed Project. The Project would not result in the displacement of any persons. The Project would have no impact on people or housing.

4.14.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.15 Public Services

4.15.1 Environmental Setting

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of service are generally based on a service to population ratio, except for fire protection, which is usually based on a response time. For example, the Orland General Plan Policy PFS-8.11 provides a Police Department staffing ratio of 1.9 officers per 1,000 population. Further, in 2003, the Orland City Council set the park dedication standard at 8.4 acres per 1,000 residents. Additionally, the average response time for fire protection and emergency medical services in Orland is 3-5 minutes for arrival at the station, approximately one minute to prepare and leave the station, and an additional two to three minutes to the actual call site (City of Orland 2010b).

4.15.1.1 Fire Services

The City of Orland Volunteer Fire Department (OVFD) provides fire protection and emergency medical response in the Project vicinity. OVFD responds to various emergency and non-emergency incidents including, but not limited to, all types of fire; medical emergencies; public assists and hazardous situations. As of January 2021, the OVFD has 46 volunteers along with a part-time office assistant that is shared with the police department (OVFD 2019). There were 582 calls, 285 within the city limits and 29 mutual aid calls in 2020. (City of Orland 2021a). The City's Fire Station is located at 810 Fifth Street, approximately 1.2 miles west of the Project Site.

4.15.1.2 Police Services

The Orland Police Department (OPD) provides law enforcement services to the Project Site. OPD reported total calls for service was 2,686 in 2018 (City of Orland 2018a). The OPD has patrol service 24 hours a day. The Police Department also offers the following services: certified child seat installation, free bike helmets, Alice Training (Active Shooter Training), and Volunteers in Polices Services Program. The OPD hired two additional patrol officers in 2018, however two new additional officers, one Community Service Officer, a Lieutenant or additional Sergeant position, a full-time Narcotics Task Force officer and a full-time School Resource Officer are planned for the future (City of Orland 2018a). As of January 2021, there are 11 officers, two full-time non-sworn and one part-time non-sworn staff members (City of Orland 2021b). The City's police station is located at 817 Fourth Street, approximately 1.1 miles west of the Project Site.

4.15.1.3 Schools

The Orland Unified School District (OUSD) provides educational services for the City of Orland. The District has two elementary schools (one for grades K-2 and one for grades K-5), one middle school (grades 6-8), one high school (grades 9-12), one continuation high school, and one community day school (OUSD 2022). The District had 2,231 students in the 2019-2020 school year (OUSD 2021b). According to the California Department of Education, (DOE), the City also has one private school, the Providence Christian School (DOE 2021).

4.15.1.4 Parks

The City of Orland has six parks ranging in size from 0.26 to 23 acres for a total acreage of 47.35 acres (City of Orland 2021c). Based on the DOF 202 estimated City population of 8,267, the City's parkland to population ratio is 5.7 acres of parks/1,000 population[2].

4.15.1.5 Other Public Facilities

Other public facilities include Orland City Hall, the Orland Free Library, and the Orland Recreation Center which is located in Lely Park. Orland City Hall, located at 815 Fourth Street, accommodates the city administration, building, planning and public works departments and City Council chambers. The Orland Free Library, located at 333 Mill Street, is part of the Glenn County Public Library system and is open Monday through Saturday. The Recreation Center features a full-size indoor gym and offers many different programs year-round such as basketball games, summer camps, tiny tots tumbling, volleyball, pickleball, and exercise classes.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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:	☐	☐	☐	☒
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒

[2] 47.35 acres of parks/(8,527/1,000) population = 5.59 acres of parks/1,000 population.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

Less than significant.

4.15.2.1 Fire Protection

The Project Site is located approximately 1.2 mile from the City's fire station. The homes and businesses that abut the Project Site are currently served by the City for fire protection and the Project would have no effect to response time required for the OVFD. Therefore, the Project would have no impact in this area.

4.15.2.2 Police Services

The Proposed Project would not result in a significant increase in demand for police protection resulting in new or expanded police facilities. Police facilities and the need for expanded facilities are based on the staffing levels these facilities must accommodate. Police staffing levels are generally based on the population/police officer ratio, and an increase in population is usually the result of an increase in housing or employment. The proposed Project would not result in an increase of housing or employment opportunities.

Because the Proposed Project would neither increase the population nor result in substantial employment gains, the Proposed Project would not result in the need for increase in police protection or police facilities. Therefore, the Proposed Project would have a less than significant impact in this area.

4.15.2.3 Schools

The Proposed Project is the rehabilitation and reconstruction of a city roadway. Because the Proposed Project would not increase the population or result in substantial employment gains, an increase of student population in Orland would not occur nor would require additional educational facilities. Therefore, the Proposed Project would have no impact in this area.

4.15.2.4 Parks

As stated previously, the need for additional parkland is primarily based on an increase in population to an area. Given that the Proposed Project would not increase the City's population, the Project would not burden any parks in the surrounding area beyond capacity by generating additional recreational users. Therefore, the Proposed Project would not require the construction or expansion of park and recreational facilities and would also not result in an increase in demand for parks and recreation facilities in the surrounding area. There would be no impact on parks from construction of the Proposed Project.

4.15.2.5 Other Public Facilities

The Proposed Project does not result in an increase in housing or population in the city resulting in an increased use of other public facilities such as the Orland Free Library, the Recreation Center, or City Hall. Therefore, the Project would have no impact on other public facilities.

4.15.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.16 Recreation

4.16.1 Environmental Setting

As stated previously, the City has 47.35 acres of parkland and a community recreation center. Additionally, the City also provides recreational programs, such as adult and youth sports leagues for the enjoyment of city residents. Regional recreation areas in the city or within 10 miles of the city include the Glenn County Fairgrounds, the Sacramento River, and the Black Butte Lake Recreation Area.

4.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒

No impact.

The need for additional parkland is primarily based on an increase in population to an area. Given that the Proposed Project would not increase the City's population, the Project would not burden any parks in the surrounding area beyond capacity by generating additional recreational users. Therefore, the Proposed Project would not increase the use of park and recreational facilities resulting in substantial physical deterioration of the facility. There would be no impact to recreational facilities from construction of the Proposed Project.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

No impact.

The nature of the Proposed Project is a roadway reconstruction and rehabilitation project. No recreational facilities are involved in the Project construction or function. The Proposed Project would have no impact in this area.

4.16.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.17 Transportation

4.17.1 Environmental Setting

Due to the nature of the Proposed Project being a city roadway rehabilitation and reconstruction project, in which activities within the Project Site will cease upon completion, there is no need for a traffic analysis as there would be no trips generated as a result of the Project.

4.17.2 Regulatory Setting

4.17.2.1 City of Orland 2010 General Plan

The Proposed Project will be served by several major roadways. Regional access is provided by I-5 and SR 32, which link the Project Site with the other Northern California communities to the north and south and with the urbanized area of the City of Orland to the west. Local access to the Project Site is provided via Bryant Street and SR 32. The City of Orland General Plan contains the following transportation goals and policies related to construction, which may result from the Proposed Project:

Goal 3.2. Establish a system of safe and efficient local, collector, and arterial roads to reduce travel time and improve traffic safety that is consistent with the land use patterns of the City.

Policy 3.2.F: The City shall promote an active policy of consolidating driveways, access points and curb cuts along existing developed Arterial streets when a zone change to a greater density or intensity, division of property, or new development or a major remodeling occurs. The use of common driveways may be required as a condition for obtaining an encroachment onto a City dedicated road.

Goal 3.2: Formulate and adopt circulation design and improvement standards that require a level of service consistent with the demands generated by proposed development, public safety, and the efficient use of public and private resources and which are uniformly applied in the Orland Planning Area.

Policy 3.3.A: The City shall construct street and highway improvements to maintain an overall daily roadway level of service of "C" with an a.m. and p.m. peak-hour

> roadway and intersection level of service of "D" or better, unless other public health, safety, or welfare factors determine otherwise.

Traffic impacts are considered significant if they result in traffic that exceeds the Level of Service (LOS) thresholds (LOS C) for roadway segments based on maximum daily traffic volume, as defined below:

- Local: Greater than 3,600 ADT;
- Minor Collector: Greater than 6,400 ADT
- Major Collector: Greater than 10,160 (15,240 with the inclusion of future second eastbound lane promulgated from Flying J DEIR or by adding a second southbound land on Commerce Street)
- Arterial: Greater than 12,000 ADT for two lanes; greater than 18,000 for two lanes (with the inclusion of future second eastbound lane promulgated from Flying J DEIR or by adding a second southbound land on Commerce Street; and greater than 24,000 for four lanes.

Consistent with the City's policies, this study considers LOS C as the standard threshold acceptable operations for any roadway under the City of Orland jurisdiction.

4.17.2.2 Caltrans LOS Guidelines

The Caltrans guide *Preparation of Traffic Impact Studies* (dated December 2002) states the following:

> Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS.

Therefore, this study considers LOS C and better to be an acceptable standard threshold, and LOS D and worse is considered unacceptable at intersections along SR 32. The *Guide for the Preparation of Traffic Impact Studies* specifies application of these criteria to signalized intersections. The document does not specify a minimum acceptable LOS for unsignalized intersections. However, for the purpose of this analysis, this study has applied the aforementioned criteria to unsignalized intersections as well.

4.17.2.3 Transit Service

Public transportation bus service is provided to the City of Orland through Glenn Ride, a transit service provided by Glenn County. It is a fixed-route bus system with seven round trips every weekday and three round trips on Saturday from Willows to Chico. There are currently eight bus stops in Orland serviced by Glenn Ride. The stop closest to the Proposed Project is directly across the street from the Project Site on SR 32.

4.17.2.4 Pedestrian and Bicycle Facilities

City standards require sidewalks along all improved streets except in the industrial areas. The City has several plans and projects underway to increase pedestrian facilities throughout the city including a multi-use path along Stony Creek and within the rights-of-way of underground canals for pedestrian and bicycle use. There are presently no formally designated bicycle lanes or bicycle facilities in the vicinity of

the Project Site. However, bike lanes have been installed elsewhere in the City of Orland, and the City acknowledges the need for improvement in this area.

4.17.3 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒

No Impact.

4.17.3.1 Traffic Operations Analysis

Due to the nature of the Project being a city roadway reconstruction and rehabilitation project with no operational component, and that all upgrades to the roadway and any utility infrastructure included within the limits of the city are subject to all local and state plans and policies. The Project would not conflict with any program, plan, ordinance, or policy. The Project would have no impact in this area.

Transit Service and Facilities

Glenn Ride operates on SR 32 near the Proposed Project Site. The Proposed Project neither physically disrupts an existing transit service or facility nor interferes with implementation of a planned transit service or facility. Therefore, the Proposed Project's would have no impacts to transit service and facilities.

Bicycle Facilities

The Proposed Project does not interfere with use of any existing bicycle facility. The Proposed Project does not interfere with implementation of a bicycle facility identified in the *Glenn County Active Transportation Plan* (2019). Therefore, the Project would have no impact to bicycle facilities.

Pedestrian Facilities

There are some sidewalks available along SR 32, and upon completion the newly reconstructed Road M ½ will include new sidewalks along the length of the roadway on the western side. The Proposed Project does not physically disrupt an existing pedestrian facility nor interfere with implementation of a planned pedestrian facility. The Proposed Project does not result in an increased presence of vehicles and/or pedestrians on a facility that does not have adequate pedestrian facilities, such that conflicts between pedestrians and other travel modes are likely to increase. Therefore, with regard to the Project vicinity crossings, the Proposed Project would have no impact to Pedestrian Facilities.

Impacts to Safety on State Highways

The Proposed Project will not increase traffic on state highways, nor interfere with the current safety levels. Additionally, as stated previously and under current CEQA guidelines, roadway impacts as a result of a Project's traffic is no longer considered a CEQA impact.

Traffic Safety Effects

The Project proposes a rehabilitation and reconstruction of a City roadway which would include curbs, gutters, and the installation of sidewalks and adequate ADA-approved corners that would assist in the safety of the Bryant Street and Road M ½ intersection, the East Tehama Street and Road M ½ intersection, and the SR 32 and Road M ½ intersection per local and state code.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒	

No impact.

The Proposed Project does not exhibit an operational component that would influence, increase, or decrease City-wide VMT due to the nature of the Project being a rehabilitation and reconstruction project. Therefore, there is no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

No Impact.

The Proposed Project would not substantially increase hazards to vehicle safety due to increased traffic at locations with geometric design features (e.g., sharp curves or dangerous intersections). Regular Project Site traffic and vehicles visiting the Project Site during construction will be comprised of automobiles and trucks permitted under the California Vehicle Code and no farm equipment is expected. The Project does not introduce incompatible users (e.g., farm equipment) to a roadway or transportation facility not intended for those users. The Project would have no impact regarding roadway design and users.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☐	☒	☐

Less than significant.

Access to the Project Site is provided via SR 32, which would provide adequate emergency access upon Project completion. Development of the Project Site would include the reconstruction of a City roadway, with two entrances/exits (Bryant Street/Road M ½ and SR 32/Road M ½ intersections to satisfy the City's General Plan Policy 3.2.). These entrances/exists would provide adequate emergency access once the Project is completed, but could temporarily impede emergency access during project construction. A less than significant impact would occur.

4.17.4 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.18 Tribal Cultural Resources

ECORP requested a records search for the Project Area at the Northeast Information Center (NEIC) of the CHRIS at California State University, Chico on May 9, 2023 (ECORP 2023b). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NEIC staff completed and returned the records search to ECORP on May 22, 2023.

In addition to the official records and maps for archaeological sites and surveys in Glenn County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for Glenn County; the National Register Information System; Office of Historic Preservation, California Historical Landmarks; California Points of Historical Interest; Directory of Properties in the Historical Resources Inventory; Caltrans Local Bridge Survey; Caltrans State Bridge Survey; and Historic Spots in California (ECORP 2023c).

In addition to the records search, ECORP contacted the California Native American Heritage Commission on May 9, 2023 to request a search of the Sacred Lands File for the Project Area (ECORP 2023c). This search determines whether or not the California Native American tribes within the Project Area have recorded Sacred Lands, because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding TCRs, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies do not delegate government-to government authority to any private entity to conduct tribal consultation.

4.18.1 Environmental Setting

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one-third of the state's native population, lived in the Central Valley. At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction. The Central area encompasses the current Project Area and includes the Konkow and Nomlaki.

The Nomlaki

Nomlaki spoke a Wintuan language which was part of the Penutian language family and was closely related to Wintu and Patwin. Nomlaki territory encompassed portions of present-day Tehama and Glenn counties. The territory is bounded on the north by Cottonwood Creek and occupied the foothill land extending from the Coast Range in western Glenn and Tehama counties. There are two distinct Nomlaki groups: Hill Nomlaki and River Nomlaki. The Nomlaki hunted deer, grizzly bears, fish, quails, rabbits, rats, squirrels and birds. Family units would collect acorns, roots, wild seeds, and fruit.

Little evidence is provided in the archaeological record for the Nomlaki; however, studies on neighboring tribes to the south suggest that the Nomlaki may have been part of the latter end of a developmental sequence characterized with flexed burials containing offerings of clamshell disk beads, bird-bone whistles, stone pipes, and other funerary gifts signifying wealth.

Prior to contact with European-Americans, the Nomlaki population was estimated to have been over 2,000. A malaria epidemic swept through the Central and Upper Sacramento Valley between 1830 and 1833, killing 75 percent of the indigenous population and severely hampering the ability of the Nomlaki to resist settlers' incursions into their territory. As settlers moved into the region, the Nomlaki faced the destruction of vital resources from livestock, the polluted fishing areas by gold miners, and violent conflict with settlers. These factors further diminished the Nomlaki population, and by 1910, the Nomlaki population is estimated to have been 1,000.

The Konkow

The Konkow, or Northwestern Maidu, occupied the Northern Sacramento Valley and the surrounding foothills of the Sierra Nevada range. The Maidu, on the basis of cultural and linguistic differences, have been differentiated into three major related divisions: the Northeastern (Mountain Maidu), Northwestern (Konkow), and Southern (Nisenan).

The Konkow occupied territory immediately to the southwest of the Mountain Maidu, along the Feather and Sacramento rivers to their southern boundary at the Sutter Buttes. The Konkow were primarily located in the lower elevations of the Sierra Nevada and along the valley floor. Tribal territories adjacent to the Maidu and Konkow included the Atsugewi and Yana to the north, the Nomlaki and Patwin to the west, the Paiute and Washoe to the east, and the Nisenan to the south.

Settlement patterns of the Maidu and Konkow were seasonal in nature. The Konkow inhabited a savanna-like habitat on the valley floor and in the lower elevations of the Sierra foothills during the winters.

Resources exploited in this environment include wild rye, pine nuts, acorns, fish, and invertebrates. Summers in the mountains gave them access to deer meat, skins, and other items that were exploited for food, clothing, and shelter for the winter months.

The village community, the primary settlement type among the Maidu-Konkow, consisted of three to five small villages, each composed of about 35 members. Among the mountain Maidu, village communities were well defined and based on geography. In contrast, the Konkow were dispersed throughout the valley floor along river canyons, and as a result, village communities were less concentrated or definable. In terms of permanent occupation sites, both groups preferred slightly elevated locations that provided visibility of the surrounding area and were away from the water-laden marshes and meadows. The Mechoopda Village, formerly located near downtown Chico, was home to many Maidu well into historical times.

4.18.2 Tribal Consultation

As discussed in Section 2.3 above, AB 52 requires that prior to the release of a CEQA document for a project, an agency begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Proposed Project if:

1. the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe and

2. the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. The City of Orland has not received any formal notification requests by any California Native American tribes.

In addition to the record search, ECORP contacted the NAHC on May 9, 2023, to request a search of the Sacred Lands File for the APE. A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources in the Project Area.

As of March 1, 2005, SB 18 (Government Code Sections 65352.3 and 65352.4) requires that, prior to the adoption or amendment of a general plan proposed on or after March 1, 2005, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction. This Project does not require an adoption or amendment to the Orland General Plan.

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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:				
i) 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	☐	☒	☐	☐
ii) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Less than significant with mitigation incorporated.

As conveyed in the *Cultural Resources Inventory Report* conducted by ECORP Consulting, Inc., no known tribal cultural resources were identified at the Project Site or within a 0.5-mile radius during the records search and literature review performed. On May 10, 2023, ECORP performed a field investigation of the Project Site and APE, which concluded that no cultural resources were observed onsite. Additionally, on June 5, 2023, the NAHC responded to ECORP stating that through a record search of the NAHC Sacred Lands File was completed for the Proposed Project revealing a negative search result for sacred lands within the Project Site.

No known tribal cultural resources have been identified within the Project Site. The Project Site has not been identified as either a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe. However, unanticipated, and accidental discovery of California Native American tribal cultural resources are possible during Project implementation, especially during excavation, and have the potential to impact unique cultural resources. As such, mitigation measure

CUL-1 has been included to reduce the potential for impacts to tribal cultural resources to a less than significant level.

4.18.4 Mitigation Measures

Implement mitigation measure **CUL-1** (Section 4.5.4).

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

The City of Orland Public Works Department is responsible for water, wastewater, and storm drainage for the City. The City contracts with Waste Management to provide solid waste collection services in the City.

4.19.1.1 Water Service

The source of water supply for Orland is groundwater pumped from six wells that produce between 350 and 1,090 gallons per minute (gpm). The wells are located throughout the City and range in depth from 150 feet to 500 feet. Gravity flow from an 80,000-gallon elevated storage tank provides the water pressure in the City. The water transmission and distribution systems consist of approximately 34 miles of pipeline ranging in diameter from 4 inches to 10 inches. The water system is operated at 50 pounds per square inch (psi) to 65 psi pressure under normal demand. The six wells are capable of producing 5,130 gallons per minute (gpm) at 55 psi system pressure. The average daily water demand per Housing Unit Equivalent (HUE) is 571 gallons. The commercial HUE is 3,985 gallons per day (gpd), while the high-density residential HUE is 255 gpd (City of Orland 2015).

City water is obtained from the Colusa Groundwater Subbasin. There is not a regulated limit to the amount of groundwater that can be pumped by the various groundwater users, including the City of Orland, in this subbasin. The only limitation to groundwater extraction, and consequently the City's water supply, would be the pumping capacity of the six wells and the availability of future groundwater. The estimated storage capacity of the groundwater subbasin to a depth of 200 feet is approximately 13,025,887 AF or 4,244.5 trillion gallons. Estimates of groundwater extraction for the Colusa Subbasin are based on surveys conducted by the California DWR during 1993, 1994, and 1999. Surveys included land use and water sources. Estimates of groundwater extraction for agricultural, municipal, and industrial, and environmental wetland uses are 310,000, 14,000, and 22,000 AF, respectively. Deep percolation from applied water is estimated to be 64,000 AF. The DWR has not identified the Colusa Subbasin as overdrafted in DWR Bulletin 118. Also, there has been no indication of any existing or anticipated overdraft condition in studies prepared by other entities (DWR 2006).

The DWR SGMA provides groundwater levels throughout the state. Among other things, this interactive online tool can illustrate the change in groundwater depth of a certain time period for a particular location, such as the City of Orland. According to the SGMA information, the distance from groundwater to ground surface in the Project Site has increased by approximately 120 feet between spring 2011 and spring 2021. In other words, the groundwater water surface was 30 feet bgs in 2008 and was approximately 150 feet bgs in 2021 (DWR 2022b).

However, the depth to groundwater varies by location and rainfall. For example, at the end of 2019, when the National Drought Mitigation Center (NDMC) indicated that only 0.01 percent of the entire state of California was in *D2 – Severe Drought*-level conditions, the groundwater-to-ground surface depth was approximately 200 feet below the surface in the Project vicinity, while it was 160 feet below the surface in the southern parts of Orland (DWR 2022b). Although the SGMA interactive map does not have data for Spring 2022, the U.S. Drought Monitor indicates that up to 17 percent of the state is in *D4 - Exceptional Drought* conditions (NDMC 2022), and therefore groundwater levels are expected to be substantially lower than 2019 levels. The City is currently exploring options to address the increase in private wells running dry within the current City limits, and surrounding areas, as the gap between the surface and groundwater levels within the subbasin increases.

4.19.1.2 Wastewater

Sewage is collected and processed by the Orland Wastewater Facility. The facility utilizes a primary treatment process consisting of a bar-screen located at the headworks building with screened effluent disposed into a rotating series of four sewage disposal ponds located west of the airport. These four primary settling ponds, along with two specially lined and isolated brine ponds, are located on a 50-acre, City-owned land parcel.

The wastewater facility is currently operating under Waste Discharge Requirements Order No. 96-129, which was adopted by the Central Valley Regional Water Quality Control Board on May 3, 1996. The City's Waste Discharge Requirements indicate that the design capacity in 1996 for the four stabilization ponds and disposal field was 2.1 million gallons per day (mgd), with an average domestic wastewater flow of 1.3 mgd (City of Orland 2010b). The City has recently updated the wastewater facility by adding the Blue Frog Aeration System to the facility’s aeration ponds. The addition of the Blue Frog Aeration System allows for better wastewater processing.

According to the City's Public Works Department (City of Orland 2021d), during 2021, the City reported receiving approximately 0.66 mgd at the treatment plant. The City also received an average of approximately 0.65 mgd over 2020. The treatment plant capacity is 2.1 mgd. The City completed improvements to the headworks and domestic ponds in 2016. The improvements help the City obtain better measurements of the inflow into the plant, help digest and process the sludge in the ponds, and help with wastewater transfer between ponds. The City has certified operators in charge of the treatment facility and has to sample and test various parameters for quarterly reporting to the state.

4.19.1.3 Storm Drainage

The City of Orland stormwater drainage system consists primarily of surface water conveyance utilizing curbs and gutters that lead to underground drainage pipes that eventually discharge into the Lely Aquatic Pond, the Stony Creek Basin Tributary Area, or onsite retention basin and leach field systems.

Approximately 80 percent of the City’s area discharges into the Lely Aquatic Pond. The City Engineer estimates that this pond is capable of accommodating all storm events up to and including a 50-year storm (City of Orland 2010b). Storm events that exceed this return interval will cause some localized ponding of runoff throughout the City within street roadbeds. Should the groundwater table become

elevated due to cumulative stormwater runoff and percolation (likely occurring in late winter through early spring), the Lely Aquatic Pond capacity decreases, thereby resulting in a situation where larger storm events may cause the pond to exceed its capacity. When this occurs, runoff flows southeasterly along East South Street (County Road 200) until it reaches the Tehama-Colusa Canal, which thereafter becomes a dike preventing further street flow (City of Orland 2010b).

4.19.1.4 Solid Waste

The City of Orland is a member of the Glenn County Waste Management Regional Agency (GCWMRA). The California Department of Resources Recycling and Recovery (CalRecycle) provides solid waste disposal and recycling information for jurisdictions in the state, including the GCWMRA.

According to the figures published by the CalRecycle (2022a), in 2019, the Anderson Landfill received approximately 68.6 percent of GCWMRA's solid waste, or 19,999 tons (CalRecycle 2022a). Prior to 2019, the Glenn County Landfill was the main disposal site for GCWMRA. However, this facility is now closed.

4.19.2 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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 or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

No impact.

Due to the nature of the Project being a rehabilitation and reconstruction of an existing city roadway, the Project would not result in additional capacities to water or utility facilities. Improvements to underground water conveyance systems within Road M ½ consist of a water main installed with DWR water project; a balance of water services to be installed (but not connected to houses); and a water main connected to existing infrastructure within Road M ½ and extended over Lateral 40 to connect to existing water main under Bryant Street. A sewer main currently exists within Road M ½. New laterals to be installed to the ROW line with no increase to the sewage system. Electric, cable, and telephone utility lines will remain overhead with the curb and gutters being "bulbed out" around poles to avoid utility pole relocations. Gas lines will remain intact at their current location with no increase. Therefore, the Project would have a less than significant impact on utilities.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒

No Impact.

The operational phase of the Proposed Project does not require water supplies. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No Impact.

The operation of the completed Proposed Project would not require any capacity from wastewater treatment facilities. Therefore, the Project would have no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) 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?	☐	☐	☐	☒

Less than significant.

The Proposed Project will not result in any operational component that would generate solid waste beyond construction or existing conditions. Therefore, there is no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Less than significant.

The Proposed Project is required to comply with all state and federal statutes regarding solid waste. This impact is considered less than significant.

4.19.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.20 Wildfire

4.20.1 Environmental Setting

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents), and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area-to-mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area-to-mass ratio and require more heat to reach the ignition point.

The Project is not in an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone. Furthermore, no Very High Fire Hazard Severity Zones are located nearby. Finally, the location of the Project Site makes the Project readily accessible by emergency personnel and vehicles in the event of a wildland fire.

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

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
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

No impact.

The Proposed Project Site is not in an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone. No Very High Fire Hazard Severity Zones are located nearby. Additionally, the Project Site is not located in a state responsibility area. The Project would have no impact in this area.

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
b) 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?	☐	☐	☐	☒

No impact.

As stated above, the Project Site is not in an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone, or Very High Fire Hazard Severity Zone, and is not located in a state responsibility area. The Project Site is generally flat with very little vegetation or brush. Therefore, the Project would have no impact.

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
c) 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?	☐	☐	☐	☒

No impact.

As stated above, the Project is not in an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone, or Very High Fire Hazard Severity Zone, and is not located in a state responsibility area. Additionally, the Project Site exhibits existing utilities and would not require installation of additional utilities which would increase the risk of fire. Therefore, the Project would have no impact.

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
d) 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?	☐	☐	☐	☒

No impact.

As stated above, the Project is not in an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone, or Very High Fire Hazard Severity Zone, and is not located in a state responsibility area. The Project Site is generally flat with very little vegetation or brush. Therefore, the Project would have no impact.

4.20.3 Mitigation Measures

No significant impacts were identified; no mitigation measures are required.

4.21 Mandatory Findings of Significance

4.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☒	☐	☐

Less than significant impact with mitigation incorporated.

Sections 4.5 *Cultural Resources* and 4.18 *Tribal Cultural Resources* describe the potential that the Proposed Project has to impact subsurface deposits believed to be cultural or human in origin. However, with the implementation of mitigation measure **CUL-1**, these potential impacts to cultural resources will be reduced to a less than significant level.

Section 4.7 *Geology and Soils* describes how the Proposed Project has the potential to impact paleontological or sensitive geologic resources. However, with the imposition of mitigation measure **GEO-1**, potential impacts to geological and/or paleontological resources will be reduced to a less than significant level.

Section 4.4 *Biological Resources* describes the potential impacts that the Proposed Project may have on flora and fauna. However, with the implementation to measure **BIO-1** and **BIO-2**, potential impacts to biological resources will be reduced to a less than significant level.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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)?	☐	☐	☒	☐

Less than significant.

Implementation of the Proposed Project does not have the potential to result in cumulatively considerable impacts to the physical environment. The Proposed Project will be in the same footprint as the existing roadway, and no increases to capacity or levels of service will occur.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Less than significant impact with mitigation incorporated.

Direct and indirect impacts to human beings related to noise would be less than significant with implementation of mitigation measure **NOI-1**. Mitigation measure **NOI-1** would reduce potential noise impacts to nearby sensitive receptors with the installation of a sound wall to a less than significant level. The Project has no other potentially significant impacts.

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LIST OF ATTACHMENTS

Attachment 4.3 – Air Quality & Greenhouse Gas Model Data Outputs, Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.

Attachment 4.4 – Biological Resources Evaluation Letter, Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.

Attachment 4.5 – Archeological and Architectural History Resources Inventory and Evaluation Report for the Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.

Attachment 4.6 – Fuel Consumption Calculations for the Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.

Attachment 4.13 – Noise Model Data Outputs, Road M ½ Rehabilitation and Reconstruction Project, ECORP Consulting, Inc.