
DRAFT
Initial Study for the
Quiet Creek Subdivision Project

Glenn County, California

Lead Agency:



City of Orland
815 Fourth Street
Orland, California 95963

Prepared by:



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July 2023

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INITIAL STUDY

Lead Agency:	City of Orland
Project Proponent:	Quiet Creek, Inc.
Project Location:	The Project is located within the City of Orland, located directly north of the intersection of County Road M½ and Bryant Street. The Project Site is west of Stanton Way and north and east of an irrigation canal known as Lateral 40. The Assessor Parcel Number (APN) for the Project Site is 046-070-003. The Site is in Section 23, Township 22 North, Range 3 West of the Mount Diablo Base and Meridian. The approximate center of the Site is located at latitude 39.752266° and longitude -122.72669°.

Project Description:

The Quiet Creek Subdivision (Project) is the development of a 67-lot residential subdivision. The Project Site is 34.764 acres in size and is currently one parcel (APN's 046-090-018). The single parcel will be split into 67 lots resulting in a 21.204-acre subdivision and a 13.556-acre remainder. The remainder will not be developed as a part of this Project and will remain as undeveloped vacant land. The 21.204-acre subdivision will include 65 single family lots and Project streets (15.10 acres), 7.32 acres for a community recreation/storm water drainage area (Lot A), and Lot B (0.13 acres) which will be dedicated to the City of Orland for a new groundwater well location. The Project will extend Stony Creek Drive to the east with one road, Andrea Way, connecting it to Bryant Street. Andrea Way will extend north to the parcel border for future subdivisions as well as a future connection to County Road MM. This road will also provide emergency access to Stony Creek. A 20-foot storm drain easement is provided to the north of lots 37 and 38. Lot A has an existing storm water drainage basin which is used to provide stormwater detention for the surrounding area. This basin will remain. Lot A will also be used for a passive community recreation/open space area. No formal recreation facilities will be developed on Lot A as a part of the Project. See Figures 4, 5 and 6.

Public Review Period: To be determined.

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

AQ-1: Prior to the issuance of individual building permits, the Orland Planning and Building Departments shall confirm that all construction documents and specifications stipulate that the installation of wood-burning hearths is prohibited. Natural gas-fueled hearths are acceptable.

Timing/Implementation: Prior to issuance of building permits

Monitoring/Enforcement: The City of Orland Planning and Building Departments

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 the following:

- 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.

Timing/Implementation:

During construction

Monitoring/Enforcement:

City of Orland Planning and Building Departments

BIO-2: Special-Status Plants. The following mitigation measures would minimize potential impacts to special-status plants:

- Perform focused special-status plant surveys of the Project Site according to CDFW, California Native Plant Society (CNPS), and USFWS protocols (ECORP 2023a). Surveys will be timed according to the blooming period for target species and known reference populations will be visited prior to surveys to confirm the species is blooming where known to occur.
- No further measures pertaining to special-status plants are necessary if no special-status plants are found.
- Avoidance zones may be established around plant populations to clearly demarcate areas for avoidance if special-status plant species are found within the Project Site. Avoidance measures and buffer distances may vary between species; the specific avoidance zone distance will be determined in coordination with CDFW.
- Additional measures such as seed collection and/or transplantation may be developed in consultation with CDFW and the CEQA Lead Agency if special-status

plant species are found within the Project Site and avoidance of the species is not possible.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-3: Oak Trees. To avoid and minimize potential adverse effects to listed and special status bird species and their designated critical habitat, implement the following measures:

Guidelines are written and disseminated by the Glenn County Board of Supervisors for those that wish to harvest or remove trees during construction, road design, and other activities that may impact trees. These guidelines encourage landowners to develop oak management plans that will address the preservation of wildlife habitat. Mature oaks provide valuable habitat for multiple species, including but not limited to Swainson's hawk, white-tailed kite, Nuttall's woodpecker, oak titmouse, western red bat, and many other non-listed species. These guidelines can be found in Appendix 4.4 of the BRA. Implementation of an oak management plan to protect the small number of mature oaks present on the borders of the Study Area would ensure minimization or avoidance of impacts to trees and the valuable habitat they provide for listed species.

Timing/Implementation: *Prior to removal of trees*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-4: Crotch Bumble Bee. Implementation of the following measure would minimize or avoid adverse effects to Crotch bumble bee that may be present within the Study Area:

The Permittee shall retain a state-approved qualified biologist knowledgeable of Crotch bumble bee species ecology to conduct a survey of areas that may provide habitat for this species. The qualified biologist shall contact the CDFW to request the agency-approved survey protocol for Crotch bumble bee and shall follow the agency-accepted protocol when conducting the surveys. Within 30 days of completing the survey, the County-approved qualified biologist shall prepare a Crotch Bumble Bee Survey Report and submit it to the County Planning Division. The report shall include a description of the methods to conduct the surveys, a description of suitable habitat areas, and a map of the locations where Crotch bumble bee and any other special status species were observed. The state-approved qualified biologist shall submit CNDDDB forms for any Crotch bumble bees or other special-status species observed during the surveys. The survey report shall also include measures sufficient to avoid "take" or other adverse impacts to Crotch bumble bee, if found during the surveys.

If Crotch bumble bee is confirmed to be present within the Study Area, the applicant shall apply for and receive an Incidental Take Permit from CDFW prior to Project activities. The Incidental Take Permit (ITP) application shall be submitted to CDFW approximately one year prior to the take or adverse impacts to allow time for the processing of the application and the issuance of the ITP.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-5: Special-Status Fish Species. If construction activities must encroach into the riparian corridor of Stony Creek, implementation of the following mitigation measure would minimize or avoid impacts to special-status fish species:

- Consult with a biologist on how to proceed to avoid impacts to Stony Creek and special-status fish species.

Timing/Implementation: *Prior to construction activities encroaching the riparian corridor of Stony Creek*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-6: Northwestern Pond Turtle. To avoid and minimize potential adverse effects to Northwestern Pond Turtles, implement the following:

- Conduct a pre-construction survey for northwestern pond turtles. The survey should be conducted within 24 hours prior to the start of construction.
- No further measures pertaining to this species are necessary if no northwestern pond turtles are found.
- If northwestern pond turtles are found within an area proposed for impact, a qualified biologist shall relocate the northwestern pond turtle to a suitable location away from the proposed construction, in consultation with CDFW.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-7: Special-Status Birds and MBTA-Protected Birds (including nesting raptors). Suitable nesting and/or wintering and foraging habitat for several special-status birds is present within the Project Site. These include Swainson's hawk, burrowing owl, and tricolored blackbird. If present, the Project could result in harassment to nesting individuals and may temporarily disrupt foraging activities.

In addition to the above listed special-status birds, all native birds, including raptors, are protected under the California Fish and Game Code and the federal MBTA. As such, implementation of the following mitigation measures would ensure that there are no impacts to protected active nests:

- Conduct a pre-construction nesting bird survey of all suitable habitats on the project within 14 days prior to the commencement of construction.
- The pre-construction Swainson's hawk nesting survey shall be conducted within the Project Site and all accessible areas within 0.5 mile of the Project Site, and the pre-construction raptor nesting survey shall be conducted within 0.25 mile of the Project Site.

- A no-disturbance buffer around the nest shall be established if active nests are found. The buffer distance shall be established by a qualified biologist in consultation with CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest tree, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

Timing/Implementation: Prior to construction

Monitoring/Enforcement: City of Orland Planning and Building Departments

BIO-8: Special-Status Bats. The mature oaks along the border of the Project Site represent potential habitat for tree-roosting bats like the western red bat. Implementation of the following mitigation measures would ensure that there are no significant impacts to western red bat:

- Prior to tree removal, two preconstruction surveys shall be conducted by a qualified biologist. The first survey shall occur approximately 30 days prior to tree removal and the second survey within one week of tree removal. Trees would be inspected for presence of roosting bats and also areas below potential roosts will be examined for bat guano. If evidence of bat use is found, acoustic surveys from sunset to two hours post-sunset would occur at those locations showing evidence of bat use to verify presence/absence of special-status bat species. These measures will be undertaken regardless of time of year and will be undertaken by qualified biologists.
- If any special-status bats are found, the CDFW would be immediately contacted to determine the appropriate course of action. Maternity colonies would remain undisturbed until the young are volant (able to fly) and the colony has dispersed.

Timing/Implementation: Prior to tree removal

Monitoring/Enforcement: City of Orland Planning and Building Departments

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, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the Site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Glenn County Coroner (per § 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

GEO-1 If paleontological or other geologically sensitive resources are identified during any phase of project development, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Orland. The City 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 consulting 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 Project Site while mitigation for paleontological resources is carried out.

Timing/Implementation:

During construction

Monitoring/Enforcement:

The City of Orland Planning Department and construction lead

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- Appendix 4.6 – Energy Use Tables. ECORP Consulting, Inc. April 2023
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ACRONYMS AND ABBREVIATIONS

Term	Description
AB	Assembly Bill
ADC	Alternate Daily Cover
AF	acre-feet
AMSL	above mean sea level
APE	Area of Potential Effects
APN	Assessor Parcel Number
BAAQMD	May Area Air Quality Management District
bgs	Below Surface Level
BMP	Best Management Practice
BRA	Biological Resources Assessment
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CalGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
City	City of Orland

Term	Description
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
dBA	A-weighted decibels
DMR	Division of Mine Reclamation
DOC	California Department of Conservation
DOF	California Department of Finance
DPM	Diesel Particulate Matter
DTSC	California Department of Toxic Substances Control
DU	dwelling unit
DWR	California Department of Water Resources
ECHO	Enforcement and Compliance History Online
EIR	Environmental Impact Report
EMFAC2021	Emissions Factor Model, 2021 Version
°F	Fahrenheit
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
GHG	Greenhouse Gas
GCAPCD	Glenn County Air Pollution Control District
GCWMRA	Glenn County Waste Management Regional Agency
gpm	Gallons per minute
HUE	Housing Unit equivalent
I-5	Interstate 5
IS	Initial Study
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
kWh	Kilowatt-hours
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MG	million gallons
mg/kg	milligrams per kilogram
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
NEIC	Northeast Information Center
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NDMC	National Drought Mitigation Center
NMFS	National Marine Fisheries Services
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSVAB	North Sacramento Valley Air Basin
OHWM	Ordinary High Water Mark

Term	Description
OPD	Orland Police Department
OUSD	Orland Unified School District
OVFD	Orland Volunteer Fire Department
P-F	Public Facility
PG&E	Pacific Gas & Electric Company
PM10,PM2.5	Particulate Matter
ppm	Parts Per Million
psi	Per Square Inch
R-1	Residential One Family
R-L	Low Density Residential
RWQCB	Regional Water Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SR 32	California Highway 32
SRA	State Responsibility Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TSM	Tentative Subdivision Map
UCMP	University of California Museum of Paleontology
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle Miles Traveled

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1.0 BACKGROUND

1.1 Summary

Project Title:	Quiet Creek Subdivision 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 Project is located within the City of Orland, located directly north of the intersection of County Road M½ and Bryant Street. The Project Site is west of Stanton Way and north and east of an irrigation canal known as Lateral 40. The Assessor Parcel Number (APN) for the Project Site is 046-070-003. The Site is in Section 23, Township 22 North, Range 3 West of the Mount Diablo Base and Meridian. The approximate center of the Site is located at latitude 39.752266° and longitude -122.72669°.
General Plan Designation (existing):	Low Density Residential (R-L)
Zoning (existing):	Residential One Family (R-1)

1.2 Introduction

The City of Orland (City) is the Lead Agency for this Initial Study (IS), which has been prepared to identify and assess the anticipated environmental impacts of the proposed Quiet Creek Subdivision Project (Project or Proposed Project).

This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code Section 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 Initial Study (IS) is generally used to determine which CEQA document is appropriate for a project (i.e., Negative Declaration, Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]).

1.3 Lead Agency

The lead agency is the public agency with primary responsibility over a proposed project. Where two or more public agencies will be involved with a project, CEQA Guidelines Section 15051 provides criteria for identifying the lead agency. In accordance with CEQA Guidelines Section 15051(b)(1), "the lead agency will normally be the agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." Based on the criteria above, the City of Orland is the lead agency for the Proposed Project.

1.4 Purpose and Document Organization

The purpose of this IS is to evaluate the potential environmental impacts of the proposed Quiet Creek Subdivision Project. The IS analyzes all areas of potential environmental impacts based on Appendix G of the CEQA Guidelines. This IS document is divided into the following sections:

1.0 Introduction – This section provides an introduction and describes the purpose and organization of the document. This section provides general information regarding the Project, including the Project title, lead agency and address, contact person, brief description of the Project location, General Plan land use designation, zoning district, identification of surrounding land uses.

2.0 Project Description – This section provides a detailed description of the Proposed Project, as well as the identification of other public agencies whose review, approval, and/or permits may be required. Also listed in this section is a checklist of the environmental factors that are potentially affected by the Project.

3.0 Environmental Factors Potentially Affected and Determinations – This section is a summary of the environmental topic areas that were found to potentially impact the environment.

4.0 Environmental Checklist and Discussion – This section describes the environmental setting and overview for each of the environmental subject areas, evaluates a range of impacts classified as *no impact*, *less than significant impact*, *less than significant impact with mitigation incorporated*, and *potentially significant impact* in response to the environmental checklist.

5.0 List of Preparers – This section lists the names of document preparers.

6.0 Bibliography – This section identifies documents, websites, people, and other sources consulted during the preparation of this Initial Study.

Appendix – This section provides a list of document appendices.

1.5 Project Location

The Project is located within the City of Orland, located directly north of the intersection of County Road M½ and Bryant Street in the City of Orland, California (Figure 2). The Project Site is west of Stanton Way and north and east of an irrigation canal known as Lateral 40. The Proposed Project is located on 21.2 acres of vacant land and is situated directly north of the intersection of County Road M½ and Bryant Street. Lateral 40 abuts the eastern boundary of lot B and lots 57-61, with a no-access easement proposed. Lot B and lots 1-11 front Bryant Street on their southern boundary lines (see Figure XXX).

1.6 Environmental Setting

The Project Area is situated within the Northern Sacramento Valley, southeast of the confluence of Stony Creek and Hambright Creek. Historically, this confluence was located directly north of, and adjacent to, the Proposed Project's northern boundary. However, and as described further in Section 4.10 of this ISMND, over time Hambright Creek merging point into Stony Creek has migrated northeast to its present location, which is located 900 feet north of the termination of A Street. Bryant Street is located along the southerly boundary of the Site; the western edge of the Blair Estates Phase 2 subdivision is located to the west of the Project Site and large parcel properties located in the unincorporated area containing residential dwellings and accessory buildings accessed via County Road MM are located to the east. The Project Site is currently a vacant, undeveloped, tilled parcel containing limited vegetation or natural landscape features. The parcel previously contained a single-family dwelling that has since been demolished and removed from the Site.

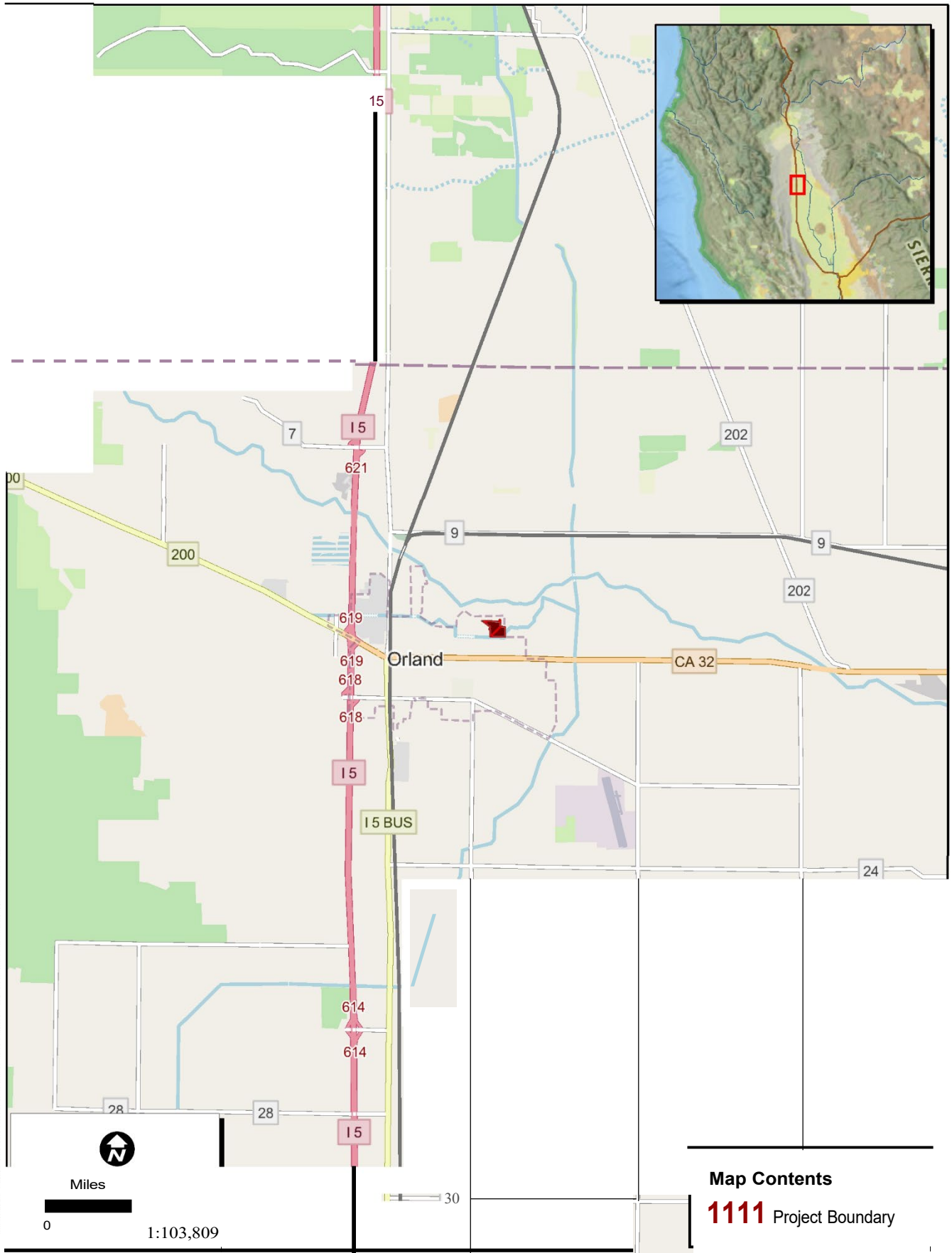
Adjacent to the Project Site's northern boundary is a proposed community recreation area and storm drain basin. Stony Creek Drive traverses easterly in the northern portion of the Site; Coopers Crossing (proposed) traverses east to west through the center portion of the Site; Andrea Way (proposed) traverses the Project Site from Bryant Street to the south northward to the northern boundary of the Site, with a termination into the proposed community recreation area and drainage basin to the north; and Joy Drive (proposed) connects the western end of Coopers Crossing to Stony Creek in the northwestern portion of the Project Site. No existing City streets traverse the Project Site currently. Other residential land uses are located to the south fronting County Road M 1/2, with a scattering of single-family residences east of the Site, beyond Lateral 40. The city grid of Orland is located to the southwest

Stony Creek, located north of the Project Site, flows from west to east toward the Sacramento River, north of the Project Site. Scattered piles of discarded concrete and rock are located on the parcel. The Project Site is relatively flat terrain situated at an elevational range of approximately 239 to 247 feet above mean sea level, with the northern portion of the Site being at a slightly lower elevation than the southern portion. The average winter temperature in the vicinity of the Project Site is 48.4 degrees Fahrenheit (°F) and the average summer temperature is 76.8°F. Average annual precipitation is approximately 21.4 inches, which falls as rain.

1.7 Surrounding Land Uses

Surrounding uses include a single-family residential subdivision directly adjacent to the Project Site and to the west (Blair Estates Phase II); single-family residences inside of the City of Orland and fronting Road M ½ to the south; vacant land, agriculture, and a scattering of single-family residences within the unincorporated County area to the east; community facilities and open-space lands to the north (Storm Water basin and Stony Creek), (Figure 3).

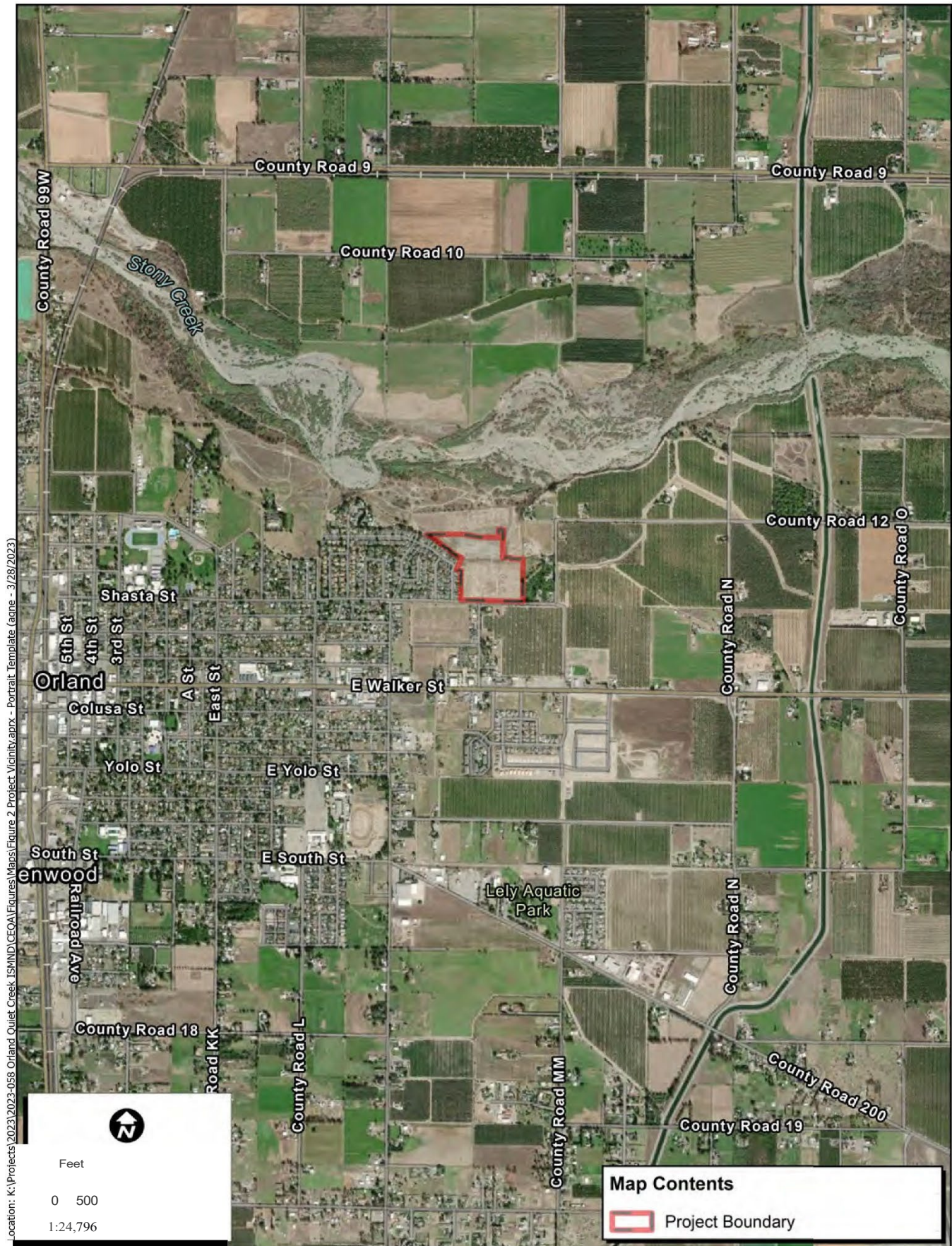
Location: K:\Projects\2023\2023-058 Orland Quiet Creek ISMND\CEQA\Figures\Maps\Project Location.aprx - Location Template (agme - 3/28/2023)



Map Date: 3/28/2023
Sources: ESRI

Map Contents
1111 Project Boundary

Figure 1 Project Location



Location: K:\Projects\2023\058 Orland Quiet Creek IS\MND\CEQA\Figures\Maps\Figure 2 Project Vicinity.aprx - Portrait Template (aprx - 3/28/2023)

Map Date: 3/28/2023
Sources: Esri 2023



Figure 2 - Project Vicinity

2023-058 - Quiet Creek Subdivision Project

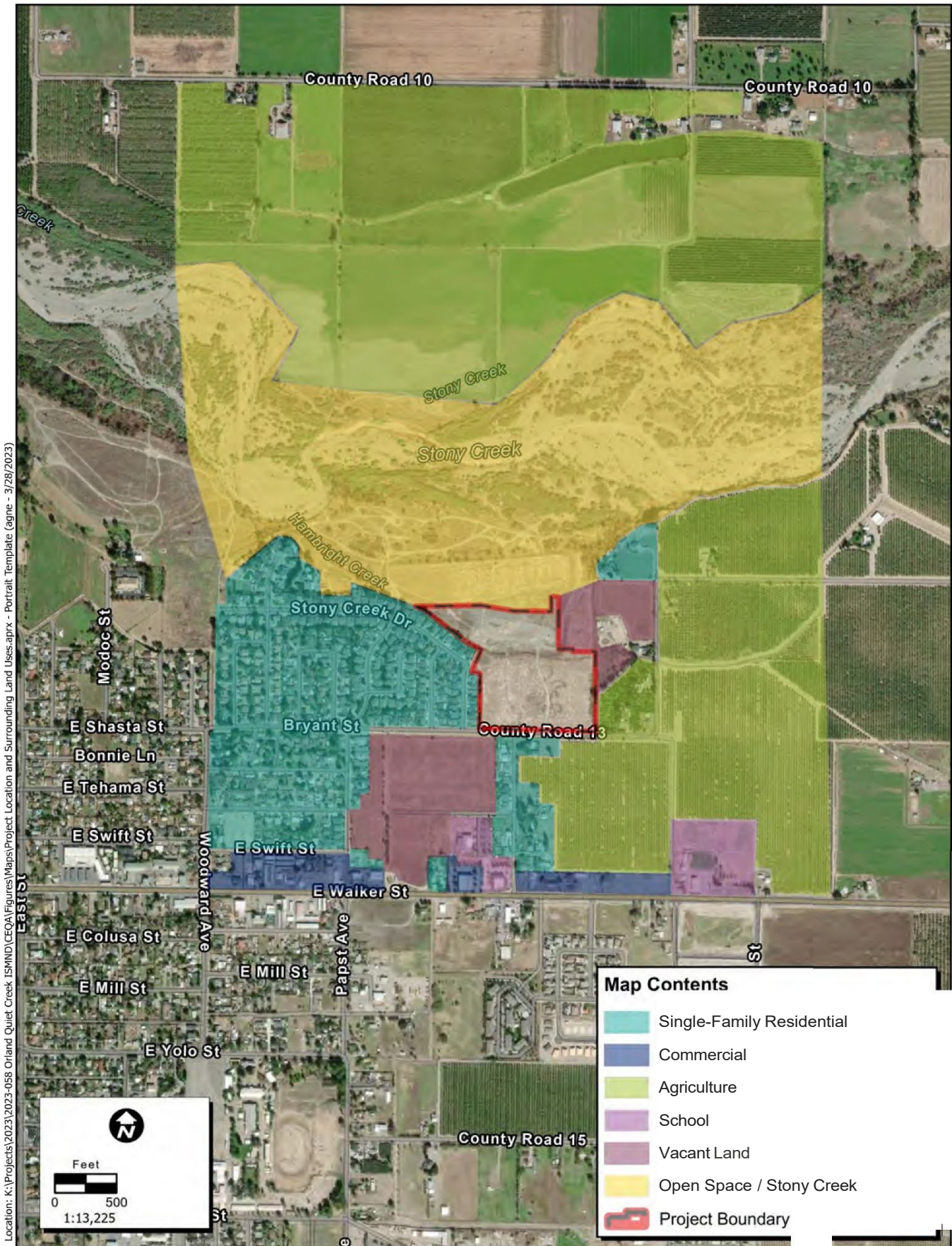


Figure 3 - Surrounding Land Uses

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2.0 PROJECT DESCRIPTION

2.1 Project Location

The Proposed Project is in the City of Orland in Section 23, Township 22 North, Range 3 West, Mount Diablo Base and Meridian, Glenn County, California. The Project is located within the City of Orland, located directly north of the intersection of Road M½ and Bryant Street in the City of Orland, California. The Project Site is west of Stanton Way and north of a primary irrigation canal known as Lateral 40.

2.2 Project Description

The Quiet Creek Subdivision (Project) is the development of a 67-lot subdivision. The Project Site is 21.2 acres in size and is currently one parcel (APN's 046-090-018). The single parcel will be split into 67 lots resulting in a 21.204-acre subdivision and a 13.556-acre remainder. The remainder will not be developed as a part of this Project and will remain as undeveloped vacant land. The 21.204-acre subdivision will include 65 single-family lots, Lot A which is identified as a community recreation/storm water drainage area and will be dedicated to the City of Orland, and Lot B which will also be dedicated to the City of Orland for a new groundwater well location. A 20-foot storm drain easement is provided to the north of lots 37 and 38. Lot A has an existing storm water drainage basin which is currently used for stormwater detention for the residential area west of the Project Site. This basin will remain. See Figures 4, 5 and 6.

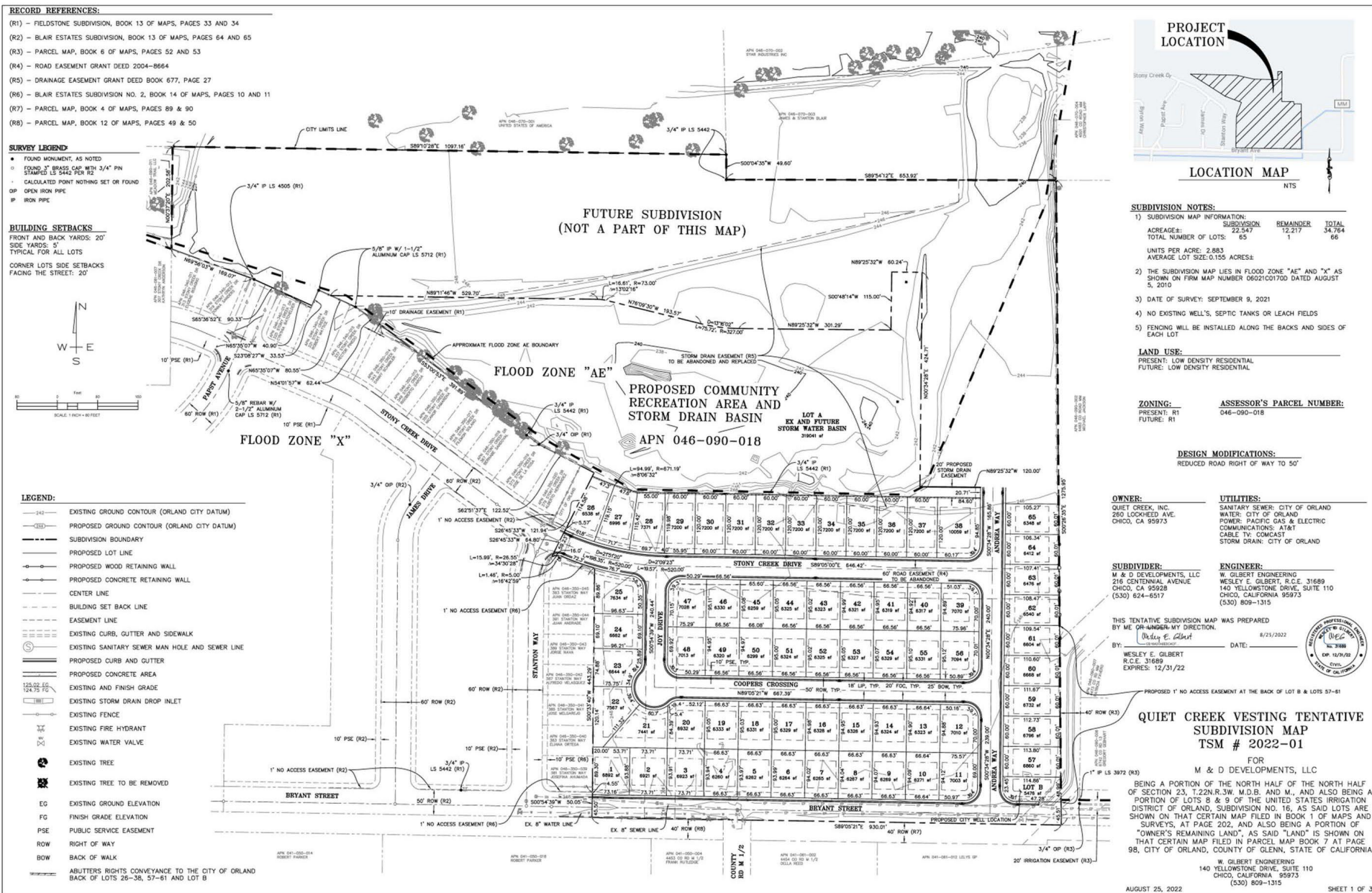
The Project includes the development of internal streets including the extension of Stony Creek Drive. All streets will be constructed pursuant to the City of Orland roadway requirements and include curbs, gutters and sidewalks. Andrea Street (proposed) will be stubbed out to allow for potential future development of the area north of the Project Site (identified as "Remainder" in this IS) as well as provide an emergency access point to Stony Creek. The Orland 2028-2028 General Plan Circulation Element identifies that Road M ½ will be continued onto the Project Site and connect to a new east-west oriented roadway connecting to Stony Creek Drive to the west and County Road MM to the east.

As shown in Table 2.0-1, the average lot size for the 65 single family lots will be 6,751 square feet (0.155 acres). These lot sizes will range from 6,259 to 10,059 square feet. The Project will have a gross density of 2.9 dwelling units per acre. Lot A will include an area for a 319,041 square foot (7.323 acres) stormwater drainage basin. Lot A will also be used for a passive community recreation/open space area. No formal recreation facilities will be developed on Lot A as a part of the Project.

Table 2.0-1. Proposed Land Use				
Lot Designation	Proposed Use	Lot Size Range (square feet)	Average Lot Size (square feet)	Total Area (acres)
1-65	Single Family Residential	6,259 – 10,059	6,751.8	13.759
A	Community Recreation/Storm Drainage Basin	319,041	-	7.323
B	Future City Well	5,476	-	0.126
Remainder	Vacant Land (not a part of this Project)	590,499	-	13.556
Total				34.764

2.2.1 Construction

Construction activities associated with the Proposed Project would require grading, utility connections, building construction, frontage improvements (e.g., new curb, gutter, sidewalk, and driveway construction), and landscaping on the Project Site. Construction is anticipated to begin in spring 2024.



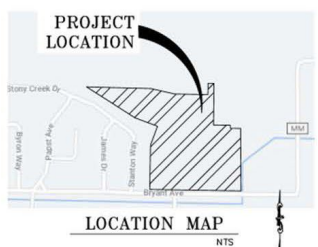
- RECORD REFERENCES:**
- (R1) - FIELDSTONE SUBDIVISION, BOOK 13 OF MAPS, PAGES 33 AND 34
 - (R2) - BLAIR ESTATES SUBDIVISION, BOOK 13 OF MAPS, PAGES 64 AND 65
 - (R3) - PARCEL MAP, BOOK 6 OF MAPS, PAGES 52 AND 53
 - (R4) - ROAD EASEMENT GRANT DEED 2004-8664
 - (R5) - DRAINAGE EASEMENT GRANT DEED BOOK 677, PAGE 27
 - (R6) - BLAIR ESTATES SUBDIVISION NO. 2, BOOK 14 OF MAPS, PAGES 10 AND 11
 - (R7) - PARCEL MAP, BOOK 4 OF MAPS, PAGES 89 & 90
 - (R8) - PARCEL MAP, BOOK 12 OF MAPS, PAGES 49 & 50

- SURVEY LEGEND**
- FOUND MONUMENT, AS NOTED
 - FOUND 3" BRASS CAP WITH 3/4" PIN
 - STAMPED LS 5442 PER R2
 - CALCULATED POINT NOTHING SET OR FOUND
 - OP OPEN IRON PIPE
 - IP IRON PIPE

- BUILDING SETBACKS**
- FRONT AND BACK YARDS: 20'
SIDE YARDS: 5'
TYPICAL FOR ALL LOTS
- CORNER LOTS SIDE SETBACKS
FACING THE STREET: 20'



- LEGEND:**
- 142 - EXISTING GROUND CONTOUR (ORLAND CITY DATUM)
 - 143 - PROPOSED GROUND CONTOUR (ORLAND CITY DATUM)
 - SUBDIVISION BOUNDARY
 - - - PROPOSED LOT LINE
 - PROPOSED WOOD RETAINING WALL
 - PROPOSED CONCRETE RETAINING WALL
 - CENTER LINE
 - BUILDING SET BACK LINE
 - EASEMENT LINE
 - EXISTING CURB, GUTTER AND SIDEWALK
 - EXISTING SANITARY SEWER MAN HOLE AND SEWER LINE
 - PROPOSED CURB AND GUTTER
 - PROPOSED CONCRETE AREA
 - EXISTING AND FINISH GRADE
 - EXISTING STORM DRAIN DROP INLET
 - EXISTING FENCE
 - EXISTING FIRE HYDRANT
 - EXISTING WATER VALVE
 - EXISTING TREE
 - EXISTING TREE TO BE REMOVED
 - EG EXISTING GROUND ELEVATION
 - FG FINISH GRADE ELEVATION
 - PSE PUBLIC SERVICE EASEMENT
 - ROW RIGHT OF WAY
 - BOW BACK OF WALK
 - ABUTTERS RIGHTS CONVEYANCE TO THE CITY OF ORLAND
BACK OF LOTS 26-38, 57-81 AND LOT B



- SUBDIVISION NOTES:**
- 1) SUBDIVISION MAP INFORMATION:

SUBDIVISION	REMAINDER	TOTAL
ACREAGE:	22.547	34.764
TOTAL NUMBER OF LOTS:	12,217	66

 UNITS PER ACRE: 2,883
 AVERAGE LOT SIZE: 0.1555 ACRE
 - 2) THE SUBDIVISION MAP LIES IN FLOOD ZONE "AE" AND "X" AS SHOWN ON FIRM MAP NUMBER 0602100700 DATED AUGUST 5, 2010
 - 3) DATE OF SURVEY: SEPTEMBER 9, 2021
 - 4) NO EXISTING WELL'S, SEPTIC TANKS OR LEACH FIELDS
 - 5) FENCING WILL BE INSTALLED ALONG THE BACKS AND SIDES OF EACH LOT

LAND USE:
 PRESENT: LOW DENSITY RESIDENTIAL
 FUTURE: LOW DENSITY RESIDENTIAL

ZONING: RT
 FUTURE: R1

ASSESSOR'S PARCEL NUMBER:
 046-090-018

DESIGN MODIFICATIONS:
 REDUCED ROAD RIGHT OF WAY TO 50'

OWNER:
 QUIET CREEK, INC.
 280 LOCKED AVE.
 CHICO, CA 95973

UTILITIES:
 SANITARY SEWER: CITY OF ORLAND
 WATER: CITY OF ORLAND
 POWER: PACIFIC GAS & ELECTRIC
 COMMUNICATIONS: AT&T
 CABLE TV: COMCAST
 STORM DRAIN: CITY OF ORLAND

SUBDIVIDER:
 M & D DEVELOPMENTS, LLC
 216 CENTENAL AVENUE
 CHICO, CA 95928
 (530) 624-6517

ENGINEER:
 W. GILBERT ENGINEERING
 WESLEY E. GILBERT, R.C.E. 31689
 140 YELLOWSTONE DRIVE, SUITE 110
 CHICO, CALIFORNIA 95973
 (530) 809-1315

THIS TENTATIVE SUBDIVISION MAP WAS PREPARED BY ME OR UNDER MY DIRECTION.

BY: *Wesley E. Gilbert* DATE: 8/21/2022

WESLEY E. GILBERT
 R.C.E. 31689
 EXPIRES: 12/31/22

QUIET CREEK VESTING TENTATIVE SUBDIVISION MAP TSM # 2022-01

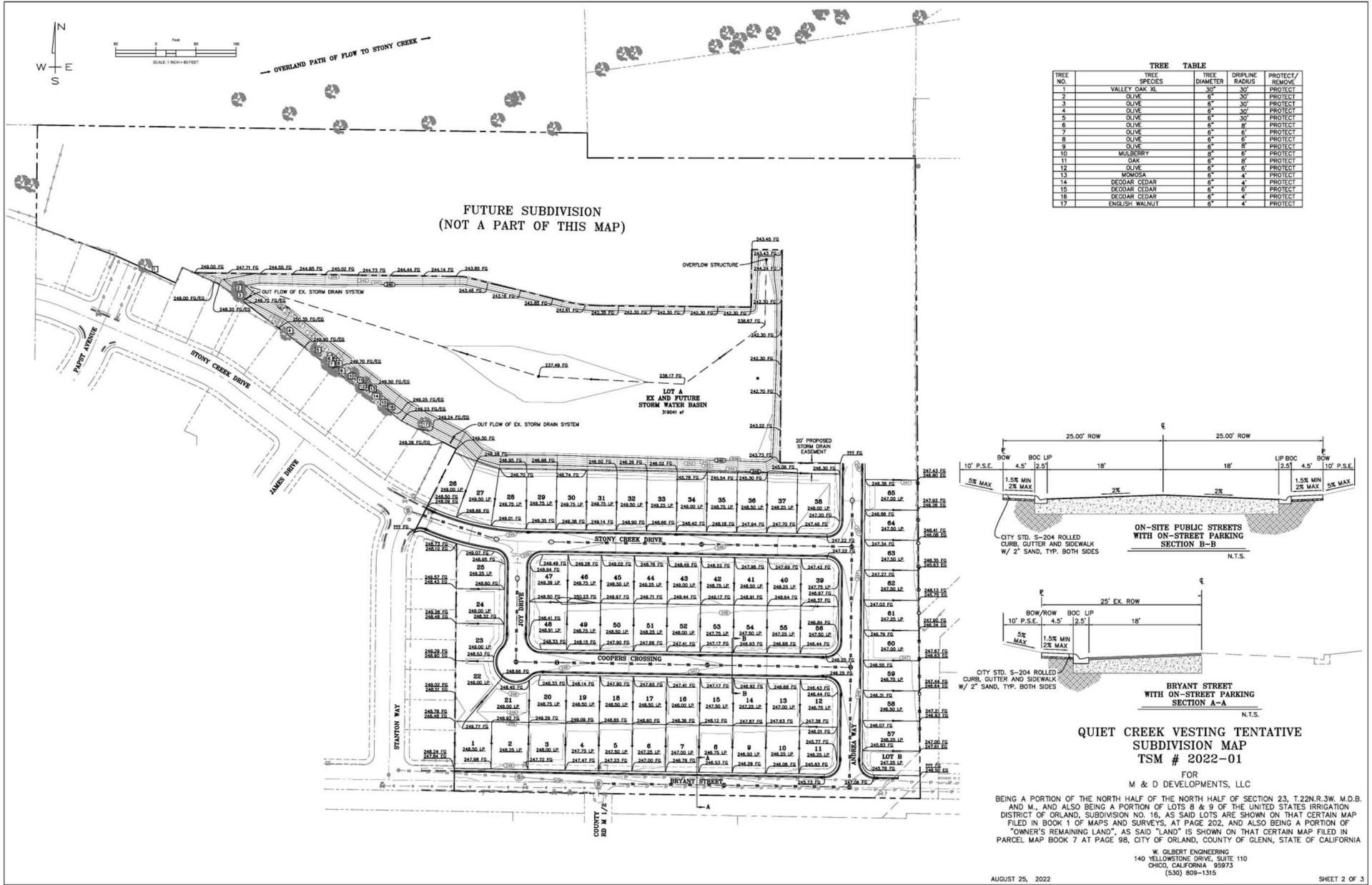
FOR
 M & D DEVELOPMENTS, LLC

BEING A PORTION OF THE NORTH HALF OF THE NORTH HALF OF SECTION 23, T.22N.R.3W. M.D.B. AND M., AND ALSO BEING A PORTION OF LOTS 8 & 9 OF THE UNITED STATES IRRIGATION DISTRICT OF ORLAND, SUBDIVISION NO. 16, AS SAID LOTS ARE SHOWN ON THAT CERTAIN MAP FILED IN BOOK 1 OF MAPS AND SURVEYS, AT PAGE 202, AND ALSO BEING A PORTION OF "OWNER'S REMAINING LAND", AS SAID "LAND" IS SHOWN ON THAT CERTAIN MAP FILED IN PARCEL MAP BOOK 7 AT PAGE 98, CITY OF ORLAND, COUNTY OF GLENN, STATE OF CALIFORNIA

W. GILBERT ENGINEERING
 140 YELLOWSTONE DRIVE, SUITE 110
 CHICO, CALIFORNIA 95973
 (530) 809-1315

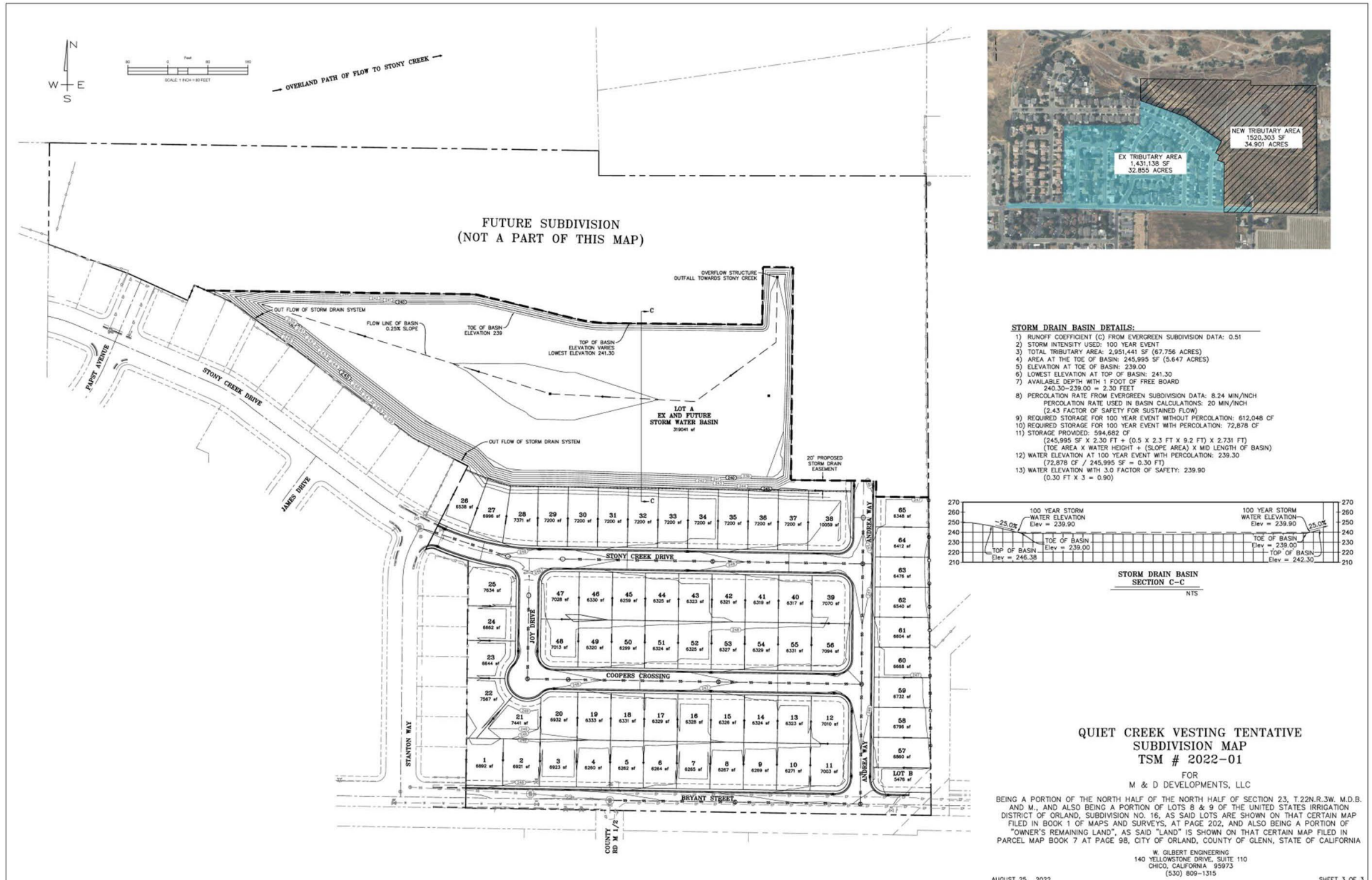
AUGUST 25, 2022 SHEET 1 OF 3

Sources: ENTER SOURCES



Map Date: 3/27/2023

Location: K:\Projects\2023\2023-058 Quiet Creek TSM\01\CFDA\Figures\Maps\Orland - Surrounding Land Use2.dwg - 1 Landscape Template (ame - 3/29/2023)



AUGUST 25, 2022

W. GILBERT ENGINEERING
140 YELLOWSTONE DRIVE, SUITE 110
CHICO, CALIFORNIA 95973
(530) 809-1315

SHEET 3 OF 3

Sources: ENTER SOURCES

Figure 6 - Site Plan (page 3)

2.3 Regulatory Requirements, Permits, and Approvals

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

2.3.1 Lead Agency Approval

The City of Orland is the lead agency for the Proposed Project. As the lead agency, the City 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:

- Approval of the TSM
- 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 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 (PCAPCD)

2.4 Relationship of Project to Other Plans and Projects

2.4.1 City of Orland 2008-2028 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 2008-2028 General Plan is the City's basic planning document and provides a comprehensive, long-term plan for physical development in the city (City of Orland 2010a).

2.4.2 Consultation with California Native American Tribe(s)

Assembly Bill 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 has not received any requests for consultation from any Native American tribes.

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.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Hazards/Hazardous Materials	<input type="checkbox"/> Recreation
<input type="checkbox"/> Agriculture and Forestry Resources	<input type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Transportation
<input checked="" type="checkbox"/> Air Quality	<input type="checkbox"/> Land Use and Planning	<input checked="" type="checkbox"/> Tribal Cultural Resources
<input checked="" type="checkbox"/> Biological Resources	<input type="checkbox"/> Mineral Resources	<input type="checkbox"/> Utilities and Service Systems
<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Noise	<input type="checkbox"/> Wildfire
<input type="checkbox"/> Energy	<input checked="" type="checkbox"/> Paleontological Resources	<input checked="" type="checkbox"/> Mandatory Findings of Significance
<input type="checkbox"/> Geology and Soils	<input type="checkbox"/> Population and Housing	
<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> 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.	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	<input type="checkbox"/>
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.	<input type="checkbox"/>
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.	<input type="checkbox"/>


 Peter Carr
 City Manager

8-1-23
 Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

The Proposed Project is located on 21.2 acres of vacant land within the City of Orland, situated directly north of the intersection of Road M½ and Bryant Street. Lateral 40 abuts the eastern boundary of lot B and lots 57-61, with a no-access easement proposed. Within the Project Site is an existing storm drain basin. Stony Creek Drive traverses west to east and terminates into the northwest corner of the Project Site. The Site is bound by Bryant Street to the south, agriculture and residences to the east, undeveloped lands to the north, and a residential subdivision to the west. Private land uses generally include grazing, gravel extraction, storm water management, agriculture, and rural residential uses. Residences along Stanton Way bound the Project along the western boundary. Other residential land uses are located to the south fronting Road M 1/2, with a scattering of single-family residences east of the Site, beyond Lateral 40.

4.1.1.1 Visual Character of the Project Site

The Project Area is situated within the Northern Sacramento Valley, southeast of the confluence of Stony Creek and Hambright Creek. The Project Site is located within relatively flat terrain situated at an elevational range of approximately 239 to 247 feet above mean sea level. Hambright Creek is located to the northwest of the Project Site and flows from west to east before it turns northeastward and empties into Stony Creek, approximately 0.2-mile northwest of the Project Site. Large orchards and agricultural fields occupy lands east of the Project Site. There are scattered piles of discarded concrete and asphalt on the Project Site.

Stony Creek

Stony Creek is the most significant natural scenic resource within the City of Orland Planning Area. Historically, Stony Creek, adjacent to the Project Site to the north, was a braided channel, which supported narrow strips of mature riparian vegetation. Current riparian vegetation along this stretch of Stony Creek extends intermittently along the creek, and the presence of mature riparian trees has decreased while invasive weed species have increased since dam construction by the U.S. Army Corps of Engineers (City of Orland 2010b). All of the land along Stony Creek within the City of Orland Planning Area is privately owned. Private land uses generally include grazing, gravel extraction, agriculture, and rural residential uses. Lack of public ownership strictly limits public access and therefore opportunities for recreational activities. The creek has been important in the City's history, as it served as a major irrigation source for agricultural development. The development of dams and irrigation canals for agricultural use was a major factor in the City's early development. Today, Stony Creek serves as a scenic resource, as it provides areas of open space within the City's Planning Area.

4.1.1.2 State Scenic Highways

The California Scenic Highway Program protects and enhances 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 or eligible scenic highways are in or near the City of Orland (Caltrans 2023).

4.1.1.3 Lighting

Individuals have a range of reactions to the perceived effects of lighting on the environment. As such, whether light is obtrusive is generally based on perception, but is also a function of the actual amount of light emitted from a source. The following are examples of light levels, expressed in foot-candles:¹

- Direct Sunlight: 10,000
- Full Daylight: 1,000
- Twilight: 1
- Full Moon: 0.1
- Covered Parking Lot: 5
- Gas Station Canopy: 12.5
- Department Store: 40
- Grocery Store: 50

Typical nighttime street lighting requirements are 1 to 3 foot-candles, which is generally considered to be unobtrusive. A typical example of glare effects is the car headlight. When viewed directly in front of a vehicle with the headlights on full beam, vision is impaired, resulting in disabling glare. However, when viewed from the side, the same headlights would not impair vision.

4.1.1.4 Spill Light

Spill light or light trespass is the light that illuminates surfaces beyond the property line. Typically, spill lighting is from a more horizontal source, such as streetlights and wayfinding/security lighting, than sky glow, which emanates from a more vertical source into the atmosphere. Spill light can be accurately calculated, and the effects of spill light can be measured for general understanding and comparison; however, light that is considered to be obtrusive is a subject of debate. A spill light impact is generally considered significant if the increase in spill lighting would exceed 1 foot-candle at the property line of the nearest sensitive receptor, sky glow is perceptibly increased, or glare is at a level such that it impairs vision.

4.1.1.5 Sky Glow

Sky glow is the light that illuminates the sky above the horizon and reflects off of moisture and other tiny particles in the atmosphere. Sky glow would be considered a significant impact if it were a permanent addition to the environment. Control features are available on the light sources to reduce sky glow and

¹ Foot-candle (fc): A unit of measure of the intensity of light falling on a surface, equal to one lumen per square foot and originally defined with reference to a standardized candle burning at one foot from a given surface. One fc = 0.01609696 watts. Source: Engineering Toolbox n.d.

glare from nighttime lighting. These control features direct light downward, thereby reducing the spill of light that causes sky glow and reducing glare.

4.1.1.6 Glare

Glare can be described as direct or reflected light, which can then result in discomfort or disability. A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive offsite glare.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The 2011 General Plan Draft EIR states that “[t]he residents of Orland enjoy an attractive natural setting of gently rolling hills, oak woodlands, and meadow areas” (City of Orland 2001a). However, the 2001 General Plan does not include any goals or policies identifying or protecting any specific scenic vistas. The General Plan Draft EIR states identifies the eastern foothills of the Coast Range and the Black Butte Recreation Area, which are located approximately 10 miles to the west, as the most prominent scenic vistas within the City of Orland Planning Area. On clear days, Mount Lassen and the Cascade and Sierra mountains and foothills to the east and northeast can be viewed from Orland. Stony Creek, described above, is the most significant natural scenic resource within the Planning Area of the City (City of Orland 2010b).

The Project Site is located adjacent to Bryant Street. Land uses surrounding the Site include residential developments to the south and to the west, as well as a scattering of single-family residences and agricultural uses to the east and southeast. Stony Creek is located to the north of the Site, beyond the vacant land delineated as the proposed community recreation area and storm drain basin (see Figure 4). Although the Project Site is not located within a designated scenic vista, the Site does have a view of Stony Creek. However, as mentioned previously, the City of Orland does not have any policies in place to protect such scenic resources.

Additionally, the Project would be subject to the City’s site plan and architectural review and Land Use element established in the City’s Municipal Code and General Plan policies, respectively). This review process ensures Project compatibility with the surrounding land uses and conformity with the City’s scenic resources protection requirements. The Proposed Project would be consistent with the surrounding land uses, specifically the residential subdivision adjacent to and west of the Site. Additionally, the Project would not block views of noteworthy scenic vistas that can be seen from the City, which include Mount Lassen and the Cascade and Sierra mountains and foothills and the Coastal Range. Conformance with

General Plan Policies of the Land Use Element ensure development projects ensure the protection of scenic vistas (Orland 2010). Therefore, the Proposed Project would not have a substantial adverse effect on local scenic vista resources, and impacts would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Proposed Project is not located within the vicinity of an officially designated scenic highway. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Proposed Project Site is within the City of Orland, bordering the City's northern boundary. There are existing residential uses within close proximity of the Project Site. For example, the Project Site is located directly adjacent to the Fieldstone Subdivision neighborhood. Additionally, there are several single-family residences fronting County Road M^{1/2} just south of the Project Site, beyond Bryant Street.

The Project Site is located within the Orland General Plan Residential One-Family land use designation and identified for residential uses in the General Plan. While the Proposed Project would result in a change in use from vacant land to residential, this change has been considered by the City in the General Plan. The construction of a new residential subdivision would change the visual character from vacant land to residential. However, this change does not result in a substantial degradation of the Project Site as this

change supports the future urban uses identified in the General Plan. Additionally, the Project Site is located in a developing urban area. As such, the Proposed Project would have a less than significant impact to the existing visual character or quality of the Site and its surroundings.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The current Project Site is on vacant land with no existing sources of light or glare. Surrounding land uses and infrastructure provide sources of light experienced within the Project Site; sourced from interior and exterior residential lighting, street lighting, and ambient area lighting associated with Stanton Way and the residential neighborhoods to the south, east, and west of the Site. However, implementation of the Project would introduce future new sources of daytime glare and may change nighttime lighting and illumination levels.

The main sources of daytime glare in the Project vicinity are from sunlight reflecting off of structures with reflective surfaces such as windows. Development under the Proposed Project would include residential structures and other potential sources of glare. Building materials (e.g., reflective glass and polished surfaces) are the most substantial sources of glare. The amount of glare depends on the intensity and direction of sunlight, which is more acute at sunrise and sunset because the angle of the sun is lower during these times.

A source of glare during the nighttime hours is artificial light. The sources of new and increased nighttime lighting and illumination include, but are not limited to, new residential development, lighting from nonresidential uses, lights associated with vehicular travel (e.g., car headlights), street lighting, parking lot lights, and security-related lighting. Increased nighttime lighting and illumination could result in adverse effects to adjacent land uses through the light trespass into these areas and contribute to skyglow conditions.

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 area lighting during any nighttime work, headlights from construction equipment, and the glare from construction equipment reflective surfaces. Although there is a potential to increase light and glare within and around the Project Site during construction, these sources would be temporary and would cease upon completion of the Project. During operations, interior and exterior lighting associated with the residential units, non-residential uses, cars driving in and out of the parking lots, ambient area lighting in outdoor common spaces and walkways, and frontage signs and security lighting would all be the primary sources within and around the Project Site.

Project development would be subject to existing City development and design standards outlined in the City’s 2001 General Plan and Municipal Code. Project adherence to these regulations would reduce the impacts of daytime glare and nighttime lighting by requiring design to limit lighting leakage and glare. Therefore, this impact would be less than significant.

4.1.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The Project Site is currently vacant and located in the northern portion of the City limits, with surrounding residential and agricultural land uses. The Site was previously used as an orchard. However, according to Google Earth aerial imagery, the Site has been vacant and undeveloped land since at least 2005, apart from the single-family residence fronting Bryant Street.

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 California DOC manages the California Important Farmland Finder, an interactive website program that identifies the Project Site as being within an area of *Other Land* (DOC 2023).

According to the DOC California Williamson Act Enrollment Finder, none of the land within the Project Site or vicinity is under a Williamson Act contract (DOC 2023).

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The nearest Important Farmland to the Project Site is located adjacent to and east of the Site. The DOC identifies the Project Site as *Land of Local Importance* with no agricultural resources (DOC 2023). Therefore, the Proposed Project would not result in the conversion of any Important Farmland (Prime

Farmland, Unique Farmland, or Farmland of Statewide Importance) to any uses other than agriculture. 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
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

According to DOC Williamson Act mapping, there are no properties within the Project Site or within the Project vicinity that are subject to a Williamson Act contract (DOC 2021). 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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

City zoning for the Project Site consists of R-1. The Project Site is not located in an area identified by City zoning as forestland. Additionally, the Project Site is not within a 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

City zoning for the Project Site consists of R-1. The Project Site is not located in an area identified by City zoning as forestland. Additionally, the Project Site is not within a 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
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

As previously addressed, according to the General Plan land use map, the Project Site is not located within lands zoned as forest land, timberland, or agricultural land (City of Orland 2010a). Additionally, the Project Site is surrounded by a mix of residential, agricultural, and commercial land uses and vacant land. Some Prime Farmland, Unique Farmland, or Farmland of Statewide Importance areas are located near the Project Site, with the closest being Prime Farmland directly adjacent to the Project’s eastern boundary. Unique Farmland and Farmland of Statewide Importance exists to the north of the Site, beyond Stony Creek. However, the Project would not impact these areas as General Plan Policy 2.2.A requires that adequate buffers be maintained between agricultural land and urbanized areas. The nearest agricultural use is approximately 40 to the east of the Site with lateral 40 in between. Additionally, agricultural uses are approximately 75 feet south of the Site with Bryant Street providing a physical barrier between the Site and the farmland. Development of the Project would not impede the use of these lands as farmland. As such, the Proposed Project would not involve other changes in the existing environment that would result in the conversion of farmland to a non-agricultural use or the conversion of forestland to a non-forest use. No impact would occur.

4.2.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.3 Air Quality

4.3.1 Environmental Setting

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area. For further information regarding the various air contaminants, the ambient air quality in the region, and criteria air pollutants refer to the Air Quality Assessment (Appendix 4.3).

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 North Sacramento Valley Air Basin (NSVAB). The NSVAB consists of a total of seven counties: Sutter,

Yuba, Colusa, Butte, Glenn, Tehama, and Shasta. 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.

4.3.1.1 Toxic Air Contaminants

Toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's PM_{2.5} air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

4.3.1.2 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 several residences fronting Stanton Way and Stony Creek Drive, located directly adjacent to the Project's 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a 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 CCAA 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 Glenn County Air Pollution Control District (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 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 above, the Project would not exceed the short-term construction standards (see Table 2-5 of Appendix 4.3) or long-term operational standards (see Table 2-7 of Appendix 4.3) with the application of mitigation measure AQ-1. The Project’s construction and operational air quality emissions would not violate any air quality standards. Additionally, the Project Site is currently designated Low Density Residential (R-L) in the City of Orland General Plan. The Project is consistent with this General Plan designation. Thus, the Project is consistent with the regional growth anticipated by the AQAP and thereby consistent with the air quality plans for the region. The Project would not conflict or obstruct implementation of any 2021 AQAP control measures and would be consistent with emission-reduction goals. Therefore, with the implementation of mitigation measure **AQ-1**, the Project would have a less than significant impact in conflicting with or obstructing the implementation of the region’s air quality plan.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than significant with mitigation incorporated.

4.3.2.1 Construction-Generated Criteria Emissions

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 Appendix 4.3 for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

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

Table 4.3-1. Construction-Related Criteria Air Pollutant Emissions						
Construction Year	Pollutants					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Daily Emissions (maximum pounds per day)						
Construction Calendar Year One	13.80	36.00	34.30	0.06	1.77	1.51
Construction Calendar Year Two	13.60	19.30	27.30	0.04	1.31	0.87
<i>Daily Significance Threshold</i>	<i>None</i>	<i>85 pounds/day</i>	<i>None</i>	<i>None</i>	<i>80 pounds/day</i>	<i>82 pounds/day</i>
Exceed Daily Threshold?	No	No	No	No	No	No
Annual Emissions (maximum tons per year)						
Construction Calendar Year One	0.97	2.11	2.46	0.00	0.13	0.09
Construction Calendar Year Two	1.64	2.32	3.20	0.00	0.16	0.10
<i>Annual Significance Threshold</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>14.6 tons/year</i>	<i>15 tons/year</i>
Exceed Daily Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2022.1. Refer to Appendix 4.3 for Model Data Outputs.

Notes: Construction emissions taken from the season, summer or winter, with the highest outputs.

According to Table 4.3-1, emissions generated during Project construction would not exceed any 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.

4.3.2.2 Operational Criteria Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM₁₀, PM_{2.5}, CO, and SO₂ as well as O₃ precursors such as ROG and NO_x. Project-generated increases in emissions would be predominantly associated with the assumed amount of wood burned from fireplaces and motor vehicle use. The emissions associated with operations for the Project are summarized in Table 4.3-2 and compared to the Project significance thresholds.

Table 4.3-2. Unmitigated Operational Criteria Air Pollutant Emissions						
Emission Source	Pollutant (Pounds per Day)					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Daily Emissions						
Mobile	2.98	3.15	25.1	0.06	1.84	0.38
Area	104.00	1.98	126.00	0.22	16.90	16.80
Energy	0.02	0.28	0.12	0.00	0.02	0.02
Total	107.00	5.41	151.22	0.28	18.76	17.20
<i>Significance Threshold</i>	65 <i>pounds/day</i>	65 <i>pounds/day</i>	<i>None</i>	<i>None</i>	80 <i>pounds/day</i>	82 <i>pounds/day</i>
Exceed Threshold?	Yes	No	No	No	No	No

Source: CalEEMod version 2022.1. Refer to Appendix 4.3 for Model Data Outputs.

Notes: Daily operational emissions taken from the season, summer or winter, with the highest outputs.

As shown by Table 4.3-2, the criteria air pollutant emissions from operations of the Proposed Project would exceed the significance thresholds for ROG. No other pollutants would surpass any significance thresholds during operations. As the Proposed Project's emissions would exceed the significance threshold, this would result in a significant impact unless a mitigation measure was implemented. Implementation of mitigation measure AQ-1 measure would prohibit the installation of wood-burning hearths (natural gas-fueled hearths are acceptable).

Predicted maximum daily operational emissions with implementation of mitigation measure AQ-1 are presented in Table 4.3-3.

Table 4.3-3. Mitigated Operational Criteria Air Pollutant Emissions						
Emission Source	Pollutant (Pounds per Day)					
	ROG	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Daily Emissions						
Mobile	2.98	3.15	25.10	0.06	1.84	0.38

Emission Source	Pollutant (Pounds per Day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Area	5.89	1.35	18.80	0.05	2.18	2.11
Energy	0.02	0.28	0.12	0.00	0.02	0.02
Total	8.89	4.78	44.02	0.11	4.04	2.51
<i>Significance Threshold</i>	<i>65 pounds/day</i>	<i>65 pounds/day</i>	<i>None</i>	<i>None</i>	<i>80 pounds/day</i>	<i>82 pounds/day</i>
Exceed Threshold?	No	No	No	No	No	No

Source: CalEEMod version 2022.1. Refer to Appendix 4.3 for Model Data Outputs.

Notes: Daily operational emissions taken from the season, summer or winter, with the highest outputs.

As shown in Table 4.3-3, mitigation measure **AQ-1** would reduce ROG emissions to a level below the Project significance thresholds.

O₃ is a health threat to persons who already suffer from respiratory diseases and can cause severe ear, nose and throat irritation and increases susceptibility to respiratory infections. Particulate matter can adversely affect the human respiratory system. As shown in Table 4.3-3, the Proposed Project would result in increased emissions of the O₃ precursor pollutants ROG and NO_x, however, the correlation between a project's emissions and increases in nonattainment days, or frequency or severity of related illnesses, cannot be accurately quantified. The overall strategy for reducing air pollution and related health effects in Glenn County is contained in the *2021 Northern Sacramento Valley Planning Area Air Quality Attainment Plan (2021 AQAP)*. This plan provides control measures that reduce emissions to attain state ambient air quality standards by their applicable deadlines such as the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero and near-zero technologies and control methods. As noted above, the Project would increase the emission of these pollutants, but would not exceed any thresholds of significance.

Therefore, this impact would be reduced to less than significant with the implementation of mitigation measure AQ-1.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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 age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. As previously described, the nearest sensitive receptors to the Project Site are several residences fronting Stanton Way and Stony Creek Drive, located directly adjacent to the Project's western boundary.

4.3.2.3 Construction-Generated Air Contaminants

Construction of the Project would result in temporary emissions of DPM, ROG, NO_x, CO, PM₁₀, and PM_{2.5} from the exhaust of off-road, heavy-duty diesel equipment for Project construction; site grading; trenching; and other miscellaneous activities. As previously identified, the area of the NSVAB which encompasses the Project Area is designated nonattainment state standards of PM₁₀ and is in attainment for all federal standards (CARB 2022a). Thus, existing levels of this criteria pollutant in the NSVAB are at unhealthy levels during certain periods. However, shown in Tables 4.3-1 construction-related emissions would not result in an exceedance of any significance thresholds.

The health effects associated with O₃ are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O₃ precursor emissions (ROG or NO_x) in excess of significance thresholds, the Project is not anticipated to substantially contribute to regional O₃ 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 in excess of thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM₁₀ 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 primary TAC of concern. PM10 exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and PM10 contains PM2.5 as a subset. As with O3 and NOx, the Project would not generate emissions of PM10 or PM2.5 that would exceed significance thresholds. Accordingly, the Project's PM10 and PM2.5 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.

4.3.2.4 Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no new stationary sources associated with the operations of the Project; nor would the Project attract mobile sources that spend long periods queuing and idling at the site. The operational emissions are expected to come from Project residents who drive to the Project Site. However, according to Table 4.3-3, onsite Project emissions would not result in emissions of criteria pollutants over significance thresholds with the implementation of mitigation measure **AQ-1**. Therefore, there would not be significant concentrations of pollutants at nearby sensitive receptors. The Project would not be a source of TACs. The Project will not result in a high carcinogenic or non-carcinogenic risk during operation.

4.3.2.5 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. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. 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/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's) 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 AQMP 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 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 (BAAQMD), 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 Proposed Project is anticipated to result in 614 trips daily (CalEEMod 2022). Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values and there would be a less than significant impact associated with substantial pollutant concentrations affecting sensitive receptors in the vicinity of the Project Site.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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 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 a residential subdivision, which is not a use associated with odors. Therefore, construction odors would have a less than significant impact adversely affecting a substantial number of people with odor emissions.

4.3.3 Mitigation Measures

AQ-1: Prior to the issuance of individual building permits, the Orland Planning and Building Departments shall confirm that all construction documents and specifications stipulate that the installation of wood-burning hearths is prohibited. Natural gas-fueled hearths are acceptable.

Timing/Implementation: *Prior to issuance of building permits*

Monitoring/Enforcement: *The City of Orland Planning and Building Departments*

4.4 Biological Resources

At the request of the City of Orland, ECORP Consulting, Inc. conducted a biological resources assessment for the proposed Project. The purpose of the assessment was to collect information on the biological resources present or with the potential to occur in the Project Study Area², assess potential biological impacts related to Project activities, and identify potential mitigation measures to inform and support the Project's CEQA documentation for biological resources. The Biological Resources Assessment (BRA) is included as Appendix 4.4 of this Initial Study and provides the information for the following sections.

4.4.1 Methods

4.4.1.1 Reconnaissance Site Survey

ECORP Associate Biologist Griffin Capehart conducted the site reconnaissance visit on April 18, 2023. The biologist visually assessed the Project area while walking meandering transects and noting all representative habitats and vegetation communities present. Special attention was given to identifying those portions of the Project site with the potential to support special-status species and sensitive habitats. During the field survey, vegetation communities occurring on-site were characterized and the following biological resource information was collected:

- Plant and animal species directly observed
- Burrows and any other special habitat features
- Elderberry (*Sambucus nigra* ssp. *caerulea*) shrub locations and characteristics as described below
- Representative Site photographs

4.4.2 Environmental Setting

The Study Area is located within relatively flat terrain situated at an elevational range of approximately 239 to 247 feet above mean sea level in the Sacramento Valley subregion of the Great Valley floristic region of California. The average winter temperature in the vicinity of the Study Area is 48.4 degrees Fahrenheit (°F) and the average summer temperature is 76.8°F. Average annual precipitation is approximately 21.4 inches, which falls as rain.

The Study Area is bound by Bryant Street to the south, agriculture and residences to the east, fallow fields to the north, and a residential subdivision to the west. Private land uses generally include grazing, gravel mining, agriculture, and rural residential uses. Stony Creek traverses west to east north of the Study Area and provides an important corridor for wildlife within the surrounding area (see Appendix 4.4 for representative Site photos).

² The BRA uses "Study Area" to represent the Project Site. Study Area and Project Site are interchangeable.

4.4.2.1 Vegetation Communities and Soils

Land Cover Types and Vegetation Communities

Land cover types or vegetation communities found within the Study Area included ruderal and disturbed. Descriptions of the land cover types, and vegetation communities present within the Study Area are provided below.

Ruderal

The southern two-thirds of the Study Area consists of a non-native ruderal community. According to Google Earth imagery (ECORP 2023a), this area has been heavily altered and disturbed in the last twenty-five years. As recently as 1998, this area was an orchard. The orchard appears to have been removed by 2005 and converted to an open field. From 2005-2012, the field appeared unused. The entire area was mowed while the western edge was also graded for the adjacent development. Imagery from July 2012 indicates that this area was burned sometime prior to that date. After this date, the field appeared to be mowed frequently until July of 2021, when the western half of the property appears to have been burned once more, while the eastern half was not burned.

The ruderal community is dominated by non-native weedy species of the genera *Avena*, *Bromus*, *Erodium* and *Lolium*. Other non-native species include Shepherd's purse (*Capsella bursa-pastoris*), smooth cat's ear (*Hypochaeris glabra*), common groundsel (*Senecio vulgaris*), and milk thistle (*Silybum marianum*). A few native species, such as fiddleneck (*Amsinckia* sp.) and pineapple weed (*Matricaria discoidea*) also occur within this community.

Disturbed

The northern third of the Study Area is the site of a gravel mine and is heavily disturbed. This area has been used for gravel mining since at least 2006. Heavy use began in April of 2021 and continues today (ECORP 2023a). This community consisted of a mixture of both non-native and native plants. Non-native species include members of the four genera mentioned in the ruderal community in addition to bur chervil (*Anthriscus caucalis*), hawkbit (*Leontodon saxatalis*), narrowleaf cottonrose (*Logfia gallica*), scarlet pimpernel (*Lysimachia arvensis*), windmill pink (*Petrorhagia dubia*), and tamarisk (*Tamarix* sp.). Native species present in the disturbed area include loco weed (*Astragalus gambelianus*), blue dicks (*Dipterostemon capitatus*), yerba santa (*Eriodictyon californicum*), bird's eyes (*Gilia tricolor*), miniature lupine (*Lupinus bicolor*), arroyo lupine (*Lupinus succulentus*), and California plantain (*Plantago erecta*).

4.4.2.2 Aquatic Resources

According to the BRA, there do not appear to be aquatic resources present within the Study Area because no areas support the necessary three criteria to be considered a wetland. Additionally, no other features were present during the Site reconnaissance that contained an ordinary high-water mark (OHWM).

While in its present state there do not appear to be any aquatic resources present, historically Hambright Creek appears to have traversed west to east through the Study Area. Based on historical imagery, the creek has not followed this path since at least 1998. Hambright Creek presently appears to enter Stony

Creek approximately one quarter-mile west of the Study Area (ECORP 2023a). Some residual flows may have continued the eastward path based on vegetation along the original creek's path, however, after the heavy rains of 2016, Stony Creek eroded its banks southward, permanently altering the path of Hambright Creek. In its present state, Hambright Creek empties into Stony Creek before it reaches the Study Area. Contemporary maps still show Hambright Creek traversing west to east through the Study Area, but this is inaccurate. In conclusion, there are no aquatic resources present within the Study Area.

4.4.2.3 Wildlife Observations

Both the ruderal and disturbed habitats within the Study Area are likely to support a variety of common wildlife species. A complete list of wildlife species observed within the Study Area and its immediate surroundings is included in Appendix 4.2 of the BRA.

Wildlife Movement/Corridors

The Project Site is located south of Stony Creek. This creek is the second largest tributary of the Sacramento River on the west side of the valley. It provides a critical corridor of habitat connecting the Coast Ranges to the Sacramento River and to the Sierra Nevada east of the Sacramento Valley. CDFW's Areas of Conservation Emphasis dataset ranks the Study Area 3 out of 5 for terrestrial connectivity. Adjacent areas rank 4 out of 5, while a parcel to the east ranks 5 out of 5. Furthermore, southwest of the City of Orland and south of Black Butte Lake lies an important stretch of Essential Connectivity Area based on the dataset California Essential Habitat Connectivity (CEHC) (ECORP 2023a). While the Study Area does not lie within this stretch of habitat, Stony Creek traverses through this block of habitat and travels eastward, passing just north of the Study Area. This emphasizes the importance of Stony Creek as an important block of riparian habitat for wildlife movements throughout the northern Sacramento Valley.

4.4.2.4 Evaluation of Species Identified in the Literature Search

According to the CNDDDB, there are two previously documented occurrences of special-status species within the Project area (ECORP 2023a). However, twenty-six (26) special-status species occurrences have been documented within an approximate five-mile radius of the Project Site.

Table 4.4-1 lists the special-status plant and animal species identified in the BRA as potentially occurring within the Project Site according to the database queries and literature review. For a complete CNDDDB list, refer to the BRA. Included in this table are the listing status for each species, a brief habitat description, approximate flowering period for plants and survey period for animals, and a determination on the potential to occur onsite. Following the table is a brief description of each special-status species with potential to occur onsite.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Plants						
Dwarf downingia <i>(Downingia pusilla)</i>	--	--	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species has also been found in disturbed areas such as tire ruts and scraped depressions (CDFW 2021). Elevation: 5'–1,460'	March–May	Potential to occur. The ruts and depressions within the grassland provide suitable habitat within the Study Area.
Stony Creek spurge <i>(Euphorbia ocellata ssp. rattanii)</i>	--	--	1B.2	Chaparral, streambanks of riparian scrub, and sandy or rocky substrates of valley and foothill grassland. Elevation: 215'–2,625'	May–October	Low potential to occur. The rocky substrates provide marginally suitable habitat. There is one CNDDB occurrence within 5 miles of the Study Area.
Invertebrates						
Crotch bumble bee <i>(Bombus crotchii)</i>	--	CC	--	Primarily nests underground in open grassland and scrub habitats from the California coast east to the Sierra Cascade and south to Mexico.	March–September	Potential to occur. Suitable habitat occurs within the Study Area. There is one CNDDB occurrence within five miles of the Study Area.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Monarch butterfly <i>(Danaus plexippus)</i>	FC	--	--	Overwinters along coastal California in wind-protected groves of eucalyptus, Monterey pine and cypress with nearby nectar and water sources; disperses in spring throughout California. Adults breed and lay eggs during the spring and summer, feeding on a variety of nectar sources; eggs are laid exclusively on milkweed plants.	Any season	Low potential to occur. Migrating individuals may be present. No suitable roosting habitat is present within the Study Area.
Reptiles						
Northwestern pond turtle <i>(Actinemys marmorata)</i>	-	-	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April- September	Low potential to occur. Marginally suitable upland nesting habitat is present within the Study Area.
Birds						
White-tailed kite <i>(Elanus leucurus)</i>	--	--	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August	February- October	Potential to occur. Suitable nesting habitat occurs within the Study Area.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Swainson's hawk <i>(Buteo swainsoni)</i>	--	CT	--	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August	March-August	Potential to occur. Suitable foraging and nesting habitat occur within the Study Area.
Burrowing owl <i>(Athene cunicularia)</i>	--	--	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August	February-August	Potential to occur. Suitable foraging and burrow habitat occur within the Study Area.
Nuttall's woodpecker <i>(Dryobates nuttallii)</i>	--	--	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands. Nesting: April-July	April-July	Potential to occur. Suitable nesting habitat occurs within the Study Area.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Yellow-billed magpie <i>(Pica nuttalli)</i>	--	--	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings. Nesting: April-June	April-June	Potential to occur. Suitable nesting habitat occur within the Study Area.
Oak titmouse <i>(Baeolophus inornatus)</i>	--	--	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree). Nesting: March-July	March-July	Potential to occur. Suitable nesting habitat occurs within the Study Area.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Tricolored blackbird <i>(Agelaius tricolor)</i>	--	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March- August	Low potential to occur. No suitable nesting habitat is present within the Study Area. Suitable foraging habitat is present within the Study Area.
Bullock's oriole <i>(Icterus bullockii)</i>	--	--	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	April-July	Potential to occur. Suitable nesting habitat occur within the Study Area.
Mammals						
American badger <i>(Taxidea taxus)</i>	-	-	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils.	Any season	Low potential to occur. Suitable habitat occurs within the Study Area.

Table 4.4-1. Potentially Occurring Special-Status Species*						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Western red bat <i>(Lasiurus frantzii)</i>	-	-	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2023).	April- September	Low potential to occur. Marginally suitable roosting habitat is present within the Study Area.

Source: ECORP 2023a

Notes: * Table 4.4-1 lists the special-status plant and animal species identified in the BRA as potentially occurring within the Project Site according to the database queries and literature review. For a complete CNDDDB list, refer to the BRA.

Plants

Twenty special-status plant species were identified as having the potential to occur within the Study Area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, eighteen species were determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of this species is provided in this analysis. Brief descriptions of the remaining two (2) species that have the potential to occur within the Project area are presented below.

Dwarf Downingia

Dwarf downingia (*Downingia pusilla*) is not listed pursuant to either the federal or California Endangered Species Act (ESA) but is designated as a California Rare Plant Ranks (CRPR) 2B.2 species. This species is an herbaceous annual that occurs in vernal pools and mesic areas of valley and foothill grasslands. Dwarf downingia has also been found in manmade features such as tire ruts, scraped depressions, stock ponds, and roadside ditches. This species blooms from March through May and is known to occur at elevations ranging from 5 to 1,460 feet above MSL. The current range of this species in California includes Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties (CNPS 2023).

Dwarf downingia has not been reported within five miles of the Project Site (CDFW 2023). The ruts and depressions within the grassland throughout the Study Area provide suitable habitat for this species. Dwarf downingia has potential to occur in the Study Area.

Stony Creek Spurge

Stony Creek spurge (*Euphorbia ocellata* ssp. *rattanii*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is an herbaceous annual that occurs in chaparral, streambanks of riparian scrub, and on sandy or rocky substrates of valley and foothill grassland. Stony Creek spurge blooms from May through October and is known to occur at elevations ranging from 215 to 2,625 feet above MSL. Stony Creek spurge is endemic to California; its current range includes Glenn and Tehama counties (ECORP 2023a).

Stony Creek spurge has been reported within five miles of the Project Site (ECORP 2023a). The rocky substrates within the Study Area provide marginally suitable habitat for this species. Stony Creek spurge has low potential to occur in the Study Area.

Fish

Four special-status fish species were identified as having potential to occur within the Project area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, all of these species were determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of these species is provided in this analysis.

Invertebrates

Six special-status invertebrate species were identified as having potential to occur within the Project area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, four species were determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of this species is provided in this analysis. Brief descriptions of the remaining two species that have the potential to occur within the Project area are presented below.

Crotch bumble bee

The Crotch bumble bee (*Bombus crotchii*) is a candidate for listing as endangered under the CESA. The historic range of the Crotch bumble bee extends from coastal areas east to the edges of the desert in central California south to Baja California del Norte, Mexico, excluding mountainous areas. The species was historically common throughout the southern two-thirds of its range but is now largely absent from much of that area and is nearly extirpated from the center of its historic range, the Central Valley (ECORP 2023a).

The Crotch bumble bee inhabits open grassland and scrub habitats. The species visits a wide variety of flowering plants, although its very short tongue makes it best suited to forage at open flowers with short corollas. Plant families most commonly associated with Crotch bumble bee include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae. The species primarily nests underground. Little is known about overwintering sites for the species, but bumble bees generally overwinter in soft, disturbed soils or under leaf litter or other debris. The flight period for Crotch bumble bee queens in California is

from late February to late October, peaking in early April with a second pulse in July. The flight period for workers and males in California is from late March through September with peak abundance in early July (ECORP 2023a).

There is one CNDDDB occurrence for Crotch bumble bee within five miles of the Study Area. The ruderal grassland and disturbed habitats provide suitable habitat for this species. Crotch bumble bees have the potential to occur within the Study Area.

Monarch

The monarch (*Danaus plexippus*) is a candidate for listing under the federal ESA. This butterfly occurs throughout a variety of habitats and requires blooming nectar resources for adults to feed on during breeding and migration and milkweed (*Asclepias* spp.) for oviposition and larval feeding. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* spp.). Larvae emerge after two to five days and then develop through five larval instars over a period of 9 to 18 days, feeding on milkweed and sequestering toxic cardenolides as a defense against predators. The larvae then pupate into chrysalis before eclosing 6 to 14 days later as an adult butterfly. Multiple generations of monarchs are produced during the breeding season, with most adult butterflies living approximately two to five weeks. Overwintering adults enter into reproductive diapause and live six to nine months (ECORP 2023a).

In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration. Monarchs may use a variety of roosting trees along fall migration routes. Migratory individuals of eastern and western North America require a specific microclimate at overwintering sites that provides protection from the elements and moderate temperatures. Migratory monarchs in the western population primarily overwinter in groves of a variety of tree species along the coast of California and Baja California (ECORP 2023a).

There are no CNDDDB occurrences for Monarch within five miles of the Study Area. There are no suitable roosting sites within the Study Area but migrating individuals may be seen foraging in the disturbed or ruderal habitats. Monarch has potential to occur within the Study Area, however it is unlikely that an overwintering population resides in Orland.

Reptiles

Two special-status reptile species were identified as having potential to occur within the Project area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, one of these species was determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of this species is provided in this analysis. A brief description of the remaining species that have the potential to occur within the Project area is presented below.

Western pond turtle

The western pond turtle (*Actinemys marmorata*) is not listed pursuant to either the federal or California ESAs, but it is a CDFW SSC. The northwestern pond turtle is a member of the widespread aquatic turtle family Emydidae. They can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands. However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats. Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation. They are typically active between March or April through October or November, the timing of which depends on variables such as latitude, elevation, local climate, etc. (ECORP 2023a).

There are no CNDDDB records for western pond turtle within five miles of the Study Area. Marginally suitable nesting habitat is present on the northern and western sides of the gravel mine within the Study Area. Western pond turtles have low potential to occur within the Study Area.

Birds

Twelve special-status bird species were identified as having potential to occur within the Project area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, four species were determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining eight species that have the potential to occur within the Project area are presented below.

White-tailed kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts. In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (ECORP 2023a).

There are no CNDDDB records of white-tailed kite within five miles of the Study Area, however, the larger tree species within the Study Area provide nesting habitat within the Study Area. White-tailed kites have the potential to occur within the Study Area.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and are protected pursuant to the California Endangered Species Act. This species nests in North America (Canada, western United States, and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (ECORP 2023a). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (ECORP 2023a). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are ten CNDDDB records of Swainson's hawk within five miles of the Study Area and the larger tree species within the Study Area provide suitable nesting habitat within the Study Area. This species was observed soaring over the Study Area during Site reconnaissance on April 18, 2023. Swainson's hawk has potential to occur within the Study Area.

Burrowing owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a bird of conservation concern by the USFWS and a species of special concern by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds. This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Spermophilus beecheyi*) but may also use man-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement. The breeding season typically occurs between February 1 and August 31 (ECORP 2023a).

There is a single CNDDDB record of burrowing owls within five miles of the Study Area and suitable nesting and foraging habitat are present within the Study Area. The piles of discarded concrete and old mammal burrows onsite provide suitable burrow habitat. Burrowing owls have the potential to occur within the Study Area.

Nuttall's woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed and protected under either state or federal Endangered Species Acts but is considered a USFWS bird of conservation concern. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (ECORP 2023a). Breeding occurs during April through July.

There are no CNDDDB records of Nuttall's woodpecker within five miles of the Study Area, however the larger trees within the Study Area provide suitable nesting habitat. Nuttall's woodpecker has potential to occur within the Study Area.

Yellow-billed magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal Endangered Species Acts but is considered a USFWS bird of conservation concern. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up to 6-8 weeks to complete, with eggs laid during April-May, and fledging during May-June. The young leave the nest at about 30 days after hatching. Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (ECORP 2023a).

There are no CNDDDB records of yellow-billed magpies within five miles of the Study Area, however the larger tree species within the Study Area provide suitable nesting habitat. This species was observed during the site visit on April 18, 2023 and is present within the Study Area.

Oak titmouse

Oak titmouse (*Baeolophus inornatus*) are not listed and protected under either state or federal Endangered Species Acts but are considered a USFWS bird of conservation concern. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley. They are found in dry oak or oak-pine woodlands but may also be observed in scrub oaks or other brush near woodlands (ECORP 2023a). Nesting occurs during March through July.

There are no CNDDDB records of oak titmouse within five miles of the Study Area, however the larger tree species within the Study Area provide suitable nesting habitat. Oak titmouse has potential to occur within the Study Area.

Tricolored blackbird

The tricolored blackbird (TRBL, *Agelaius tricolor*) was granted emergency listing for protection under the CESA in December 2014, but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed tricolored blackbirds as a threatened species in 2018. In addition, it is currently considered a USFWS bird of conservation concern and a CDFW species of special concern. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California. Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. TRBL nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation. They feed mainly on grasshoppers during the breeding season but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (ECORP 2023a). The nesting season is generally from March through August.

There are four CNDDDB records of tricolored blackbird within five miles of the Study Area. A record from 1936 falls within the Study Area. There is no suitable nesting habitat within the Study Area, but foraging habitat is present in the ruderal grassland in the southern portion of the Study Area. Historically, higher quality habitat was most likely present in the Study Area. Currently, habitat is minimal and of low quality. Tricolored blackbird has low potential to occur in the Study Area.

Bullock's oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal Endangered Species Acts but is currently a species of bird of conservation concern according to the USFWS. In California, Bullock's orioles are found throughout the state except the higher elevations of mountain ranges and the eastern deserts. They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees (ECORP 2023a). Nesting occurs from March through July.

There are no CNDDDB records of Bullock's oriole within five miles of the Study Area, however the larger tree species within the Study Area provide suitable nesting habitat. Bullock's oriole has potential to occur within the Study Area.

Mammals

Three special-status mammal species were identified as having potential to occur within the Project area based on the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, one species was determined to be absent from the Project Site due to the lack of suitable habitat. No further discussion of this species is provided in this analysis. Brief descriptions of the remaining two species that have the potential to occur within the Project area are presented below.

American badger

The American badger (*Taxidea taxus*) is designated in California as a Species of Special Concern. The species historically ranged throughout much of the state, except in humid coastal forests. Badgers were once numerous in the Central Valley; however, populations now occur in low numbers in the surrounding peripheral parts of the valley and in the adjacent lowlands of eastern Monterey, San Benito, and San Luis Obispo Counties. Badgers occupy a variety of habitats, including grasslands and savannas. The principal requirements seem to be significant food supply; friable soils; and relatively open, uncultivated ground (ECORP 2023a).

There are no CNDDDB occurrences within five miles of the Study Area for American badger. The entire Study Area provides suitable habitat for this species. American badger has potential to occur within the Study Area.

Western red bat

The western red bat (*Lasiurus frantzii*) is not listed pursuant to either the California or federal Endangered Species Acts; however, this species is considered a species of special concern by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed, its range extending from southern British Columbia in Canada through Argentina and

Chile in South America and including much of the western United States. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage one to two hours after sunset. This species is considered highly migratory; however the timing of migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood (ECORP 2023a).

There are no CNDDDB occurrences within five miles of the Study Area for western red bat. However, the larger trees within the Study Area may provide suitable roosting habitat. Western red bats have potential to occur within the Study Area.

4.4.2.5 Critical Habitat and Essential Fish Habitat

The Study Area is not designated Critical Habitat for any federally listed species. However, the reach of Stony Creek that passes north of the Study Area is designated as Critical Habitat for Central Valley steelhead, Sacramento River spring-run Chinook Salmon, and represents migration and possibly spawning habitat for this and other special-status fish species. The Project is located at a distance from Stony Creek that minimizes potential impacts to fish habitat.

4.4.2.6 Wildlife Movement/Corridors and Nursery Sites

As previously discussed, the Project Site is located south of Stony Creek. This creek is the second largest tributary of the Sacramento River on the west side of the valley. It provides a critical corridor of habitat connecting the Coast Ranges to the Sacramento River and to the Sierra Nevada east of the Sacramento Valley. CDFW's Areas of Conservation Emphasis dataset ranks the Study Area 3 out of 5 for terrestrial connectivity. Adjacent areas rank 4 out of 5, while a parcel to the east ranks 5 out of 5. Furthermore, southwest of the City of Orland and south of Black Butte Lake lies an important stretch of Essential Connectivity Area based on the dataset CEHC (ECORP 2023a). While the Study Area does not lie within this stretch of habitat, Stony Creek traverses through this block of habitat and travels eastward, passing just north of the Study Area. This emphasizes the importance of Stony Creek as an important block of riparian habitat for wildlife movements throughout the northern Sacramento Valley.

4.4.3 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

The Project would result in temporary construction-related impacts to the upland resources that provide habitat for special-status species within the Study Area. Potential impacts to upland habitats include temporary disturbance associated with grading, clearing, and tree-removal activities. The Project would result in temporary impacts to aquatic habitat within Stony Creek. As such, the Project would potentially have a substantial adverse effect, either directly or through habitat modifications, on special-status species identified by CDFW, USFWS, and National Marine Fisheries Services (NMFS) and on Critical Habitat and Essential Fish Habitat as identified by NMFS. Impacts by species or habitat group are summarized below. The implementation of mitigation measures BIO-1 through BIO-8 described in Section 4.4.4 below would ensure avoidance or a reduction in impacts to species identified as a candidate, sensitive, or special status and their habitat.

4.4.3.1 Impacts to Special Status Plants

The Project Site may support potential habitat for special-status plants described above. No special-status plants were found during field surveys; however, protocol-level surveys have not been conducted. The implementation of mitigation measure BIO-2 described in Section 4.4.4 below would avoid or minimize potential impacts to special-status plants and would result in a less than significant impact.

4.4.3.2 Impacts to Valuable Wildlife Habitat – Oak Trees

Neither the City of Orland or Glenn County have specific ordinances regulating the removal of native oaks (*Quercus* sp.) due to construction-related impacts. There do exist voluntary guidelines written and disseminated by the Glenn County Board of Supervisors for those that wish to harvest or remove trees during construction, road design, and other activities that may impact trees. These guidelines encourage landowners to develop oak management plans that will address the preservation of wildlife habitat. Mature oaks provide valuable habitat for multiple species, including but not limited to Swainson's hawk, white-tailed kite, Nuttall's woodpecker, oak titmouse, western red bat, and many other non-listed species. These guidelines can be found in Appendix 4.4. Implementation of mitigation measure BIO-3 described in Section 4.4.4 below would reduce or eliminate impacts to the valuable habitat that oak trees provide for special-status species like Swainson's Hawk.

4.4.3.3 Impacts to Crotch Bumble Bee

As mentioned above, there is one CNDDDB occurrence for Crotch bumble bee within five miles of the Study Area. The ruderal grassland and disturbed habitats provide suitable habitat for this species. Crotch bumble bees have the potential to occur within the Study Area and implementation of mitigation measure BIO-4 described in Section 4.4.4 below would avoid or reduce impacts to Crotch bumble bees.

4.4.3.4 Impacts to Special Status Fish Species, Critical Habitat, and Essential Fish Habitat

As mentioned previously, the reach of Stony Creek that passes north of the Study Area is designated as Critical Habitat for Central Valley steelhead, Sacramento River spring-run Chinook Salmon, and represents migration and possibly spawning habitat for this and other special-status fish species. The Project is located at a distance from Stony Creek that minimizes potential impacts to fish habitat. If construction activities must encroach into the riparian corridor further, implementation of mitigation measure BIO-5 described in Section 4.4.4 below would avoid or reduce impacts to Stony Creek and special-status fish species.

4.4.3.5 Impacts to Northwestern Pond Turtles

Stony Creek traverses west to east north of the Study Area and may support northwestern pond turtle. More importantly, northwestern pond turtle may move into upland habitats, including those within the Study Area to nest. Western pond turtles may nest as far as 500m away from water (ECORP 2023a). To date, no surveys for this species have been performed onsite. The implementation of mitigation measure **BIO-6** described in Section 4.4.4 below would ensure avoidance or the reduction of impacts to protected northwestern pond turtles.

4.4.3.6 Impacts to Special-Status Birds and MBTA Protected Birds (including Raptors)

Suitable nesting and/or wintering and foraging habitat for several special-status birds is present within the Project Site. These include Swainson's hawk, burrowing owl, and tricolored blackbird. If present, the Project could result in harassment to nesting individuals and may temporarily disrupt foraging activities.

In addition to the above listed special-status birds, all native birds, including raptors, are protected under the California Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). As such, implementation of mitigation measure BIO-7 described in Section 4.4.4 below would ensure avoidance or reduction in impacts to special-status and MBTA-protected bird.

4.4.3.7 Impacts to Special Status Bats

The mature oaks along the border of the Project Site represent potential habitat for tree-roosting bats like the western red bat. Removal of vegetation associated with equipment access/staging for grading, clearing, and other construction-related operations could result in impacts to roosting bats, if present. Implementation of mitigation measure BIO-8 described in Section 4.4.4 below would further reduce the potential for effects to special status bats.

Therefore, with the implementation of the aforementioned mitigation measures, impacts to species identified above would be less than significant.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact with Mitigation Incorporated.

The Study Area supports riparian woodland habitat along Stony Creek. Construction activities would occur in upland, developed or disturbed areas of the Study Area. Project construction may require vegetation clearing or tree removal and therefore, implementation of mitigation measure BIO-2, BIO-3, and BIO-8 described in Section 4.4.4 below would further reduce the potential for additional impacts to riparian habitats. Implementation of this mitigation measure would result in a less than significant impact.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

The Project would have no direct impact on federally protected wetlands; however, Stony creek is considered Waters of the U.S. Project implementation has the potential to temporarily disturb Waters of the U.S. if construction activities must encroach into the riparian corridor further. Implementation of mitigation measure BIO-1 and BIO-5 described in Section 4.4.4 below would reduce potential impacts to Waters of the U.S. Implementation of this mitigation measure would result in a less than significant impact.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

The forested uplands and open space lands within the Study Area provide some limited migratory opportunities for wildlife. Operation of construction equipment is likely to temporarily disturb and displace most wildlife from the Study Area. 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.

As discussed previously, the Study Area does not include a known nursery site and no evidence of a wildlife nursery site was observed during the field reconnaissance. Therefore, the Project is not expected to impact wildlife nursery sites. Potential impacts to individual nesting birds would be reduced by implementation of mitigation measures BIO-3, BIO-7, and BIO-8 described in Section 4.4.4 below. Implementation of these mitigation measures would result in a less than significant impact.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Project does not conflict with a local policy or ordinance protecting biological resources, including tree ordinances. As such, **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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

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

4.4.4 Mitigation Measures

Following are the minimization and mitigation measures to further reduce or eliminate Project-associated impacts to special-status wildlife species. These proposed measures may be amended or superseded by the Project-specific permits issued by the regulatory agencies.

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 the following:

- 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.

Timing/Implementation:

During construction

Monitoring/Enforcement:

City of Orland Planning and Building Departments

BIO-2: Special-Status Plants. The following mitigation measures would minimize potential impacts to special-status plants:

- Perform focused special-status plant surveys of the Project Site according to CDFW, California Native Plant Society (CNPS), and USFWS protocols (ECORP 2023a). Surveys will be timed according to the blooming period for target species and known reference populations will be visited prior to surveys to confirm the species is blooming where known to occur.
- No further measures pertaining to special-status plants are necessary if no special-status plants are found.
- Avoidance zones may be established around plant populations to clearly demarcate areas for avoidance if special-status plant species are found within the Project Site. Avoidance measures and buffer distances may vary between species; the specific avoidance zone distance will be determined in coordination with CDFW.
- Additional measures such as seed collection and/or transplantation may be developed in consultation with CDFW and the CEQA Lead Agency if special-status plant species are found within the Project Site and avoidance of the species is not possible.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-3: Oak Trees. To avoid and minimize potential adverse effects to listed and special status bird species and their designated critical habitat, implement the following measures:

Guidelines are written and disseminated by the Glenn County Board of Supervisors for those that wish to harvest or remove trees during construction, road design, and other activities that may impact trees. These guidelines encourage landowners to develop oak management plans that will address the preservation of wildlife habitat. Mature oaks provide valuable habitat for multiple species, including but not limited to Swainson’s hawk, white-tailed kite, Nuttall’s woodpecker, oak titmouse, western red bat, and many other non-listed species. These guidelines can be found in Appendix 4.4 of the BRA. Implementation of an oak management plan to protect the small number of mature oaks present on the borders of the Study Area would ensure minimization or avoidance of impacts to trees and the valuable habitat they provide for listed species.

Timing/Implementation: *Prior to removal of trees*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-4: Crotch Bumble Bee. Implementation of the following measure would minimize or avoid adverse effects to Crotch bumble bee that may be present within the Study Area:

The Permittee shall retain a state-approved qualified biologist knowledgeable of Crotch bumble bee species ecology to conduct a survey of areas that may provide habitat for

this species. The qualified biologist shall contact the CDFW to request the agency-approved survey protocol for Crotch bumble bee and shall follow the agency-accepted protocol when conducting the surveys. Within 30 days of completing the survey, the County-approved qualified biologist shall prepare a Crotch Bumble Bee Survey Report and submit it to the County Planning Division. The report shall include a description of the methods to conduct the surveys, a description of suitable habitat areas, and a map of the locations where Crotch bumble bee and any other special status species were observed. The state-approved qualified biologist shall submit CNDDDB forms for any Crotch bumble bees or other special-status species observed during the surveys. The survey report shall also include measures sufficient to avoid "take" or other adverse impacts to Crotch bumble bee, if found during the surveys.

If Crotch bumble bee is confirmed to be present within the Study Area, the applicant shall apply for and receive an Incidental Take Permit from CDFW prior to Project activities. The Incidental Take Permit (ITP) application shall be submitted to CDFW approximately one year prior to the take or adverse impacts to allow time for the processing of the application and the issuance of the ITP.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-5: Special-Status Fish Species. If construction activities must encroach into the riparian corridor of Stony Creek, implementation of the following mitigation measure would minimize or avoid impacts to special-status fish species:

- Consult with a biologist on how to proceed to avoid impacts to Stony Creek and special-status fish species.

Timing/Implementation: *Prior to construction activities encroaching the riparian corridor of Stony Creek*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-6: Northwestern Pond Turtle. To avoid and minimize potential adverse effects to Northwestern Pond Turtles, implement the following:

- Conduct a pre-construction survey for northwestern pond turtles. The survey should be conducted within 24 hours prior to the start of construction.
- No further measures pertaining to this species are necessary if no northwestern pond turtles are found.
- If northwestern pond turtles are found within an area proposed for impact, a qualified biologist shall relocate the northwestern pond turtle to a suitable location away from the proposed construction, in consultation with CDFW.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-7: Special-Status Birds and MBTA-Protected Birds (including nesting raptors). Suitable nesting and/or wintering and foraging habitat for several special-status birds is present within the Project Site. These include Swainson's hawk, burrowing owl, and tricolored blackbird. If present, the Project could result in harassment to nesting individuals and may temporarily disrupt foraging activities.

In addition to the above listed special-status birds, all native birds, including raptors, are protected under the California Fish and Game Code and the federal MBTA. As such, implementation of the following mitigation measures would ensure that there are no impacts to protected active nests:

- Conduct a pre-construction nesting bird survey of all suitable habitats on the project within 14 days prior to the commencement of construction.
- The pre-construction Swainson's hawk nesting survey shall be conducted within the Project Site and all accessible areas within 0.5 mile of the Project Site, and the pre-construction raptor nesting survey shall be conducted within 0.25 mile of the Project Site.
- A no-disturbance buffer around the nest shall be established if active nests are found. The buffer distance shall be established by a qualified biologist in consultation with CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest tree, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Orland Planning and Building Departments*

BIO-8: Special-Status Bats. The mature oaks along the border of the Project Site represent potential habitat for tree-roosting bats like the western red bat. Implementation of the following mitigation measures would ensure that there are no significant impacts to western red bat:

- Prior to tree removal, two preconstruction surveys shall be conducted by a qualified biologist. The first survey shall occur approximately 30 days prior to tree removal and the second survey within one week of tree removal. Trees would be inspected for presence of roosting bats and also areas below potential roosts will be examined for bat guano. If evidence of bat use is found, acoustic surveys from sunset to two hours post-sunset would occur at those locations showing evidence of bat use to verify presence/absence of special-status bat species. These measures will be undertaken regardless of time of year and will be undertaken by qualified biologists.
- If any special-status bats are found, the CDFW would be immediately contacted to determine the appropriate course of action. Maternity colonies would remain undisturbed until the young are volant (able to fly) and the colony has dispersed.

<i>Timing/Implementation:</i>	<i>Prior to tree removal</i>
<i>Monitoring/Enforcement:</i>	<i>City of Orland Planning and Building Departments</i>

4.5 Cultural Resources

A Cultural Resources Inventory Report was prepared by ECORP Consulting, Inc. (ECORP 2023b) 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 Project Area is situated within the Northern Sacramento Valley, southwest of the confluence of Stony Creek and Hambright Creek within the northeastern city limits of the City of Orland. The 21.2-acre Project Area is bounded by existing residential development to the west, undeveloped land and Stony Creek to the north, County Road 13 to the south, and rural farm residences to the immediate east. Hambright Creek bisects the Project Area; it flows from west to east before it turns northeastward and flows into Stony Creek approximately 0.2-mile northeast of the Project Area. Large orchards and agricultural fields occupy the northern and southern portions of the Project Area, while the central portion comprises a gravel bar. The city grid of Orland is located to the southwest. Elevations within the Project Area range from 239 to 247 feet above mean sea level.

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). For projects subject to (CEQA) review, the term Project Area 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 horizontal APE represents the survey coverage area of 21.2 acres.

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 and could extend as deep as 150 feet below the current surface at the location of the well; however, the vertical APE in the rest of the Project Area should not exceed 10 feet below the current surface, depending on the extent of excavation and grading necessary for construction, installation of utilities, and landscaping. 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.

4.5.2 Cultural Resources Records Search

ECORP requested a records search for the property at the Northeast Information Center (NEIC) of the CHRIS at California State University-Chico on March 22, 2023. 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 March 30, 2023.

In addition to the official records and maps for archaeological sites and surveys in Glenn County, the following 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; 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 conducted a search for a local historical registry to identify properties and historical resources not listed in national or local databases.

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

4.5.2.2 Regional Pre-Contact History

It is generally believed that human occupation of California began at least 10,000 BP. The archaeological record indicates that between approximately 10,000 BP and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones.

Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the Millingstone Horizon. Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 8,000 BP.

Archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments in sites dating to after about 5,000 BP. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. New peoples from the Great Basin began entering Southern California during this period. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before, and settlement became concentrated in villages and communities along the coast and interior valleys. Regional subcultures also started to develop, each with its own geographical territory and language or dialect. These were most likely the basis for the groups encountered by the first Europeans during the 18th century. Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction. The introduction of the bow and arrow into the region sometime around 2,000 BP is indicated by the presence of small projectile points.

4.5.2.3 Local Pre-Contact History

This section provides a regional overview with contextual elements drawn from California's Central Valley Region, and the northern Sierra Nevada foothill zone. There has been more extensive research and study of Central Valley prehistory than the prehistory of the northern Sierra Nevada foothill transition zone, but a fair amount of cultural overlap exists within these regions.

California's Great Central Valley has long held the attention of archaeologists and was a focus of early research in California. Archaeological work during the 1920s and 1930s led to the cultural chronology for Central California. This chronology was based on the results of excavations conducted in the lower

Sacramento River Valley. This period is divided into three periods: the Paleoindian, the Archaic and the Emergent.

The Paleoindian Period began when the first people began to inhabit what is now known as the California culture area. It was commonly believed these first people subsisted on big game and minimally processed foods, (i.e., hunters and gatherers), presumably with no trade networks. More recent research indicates these people may have been more sedentary, relied on some processed foods, and traded. Populations likely consisted of small groups traveling frequently to exploit plant and animal resources.

The Archaic Period is further divided into three sub-periods, the lower Archaic, the Middle Archaic and the Upper Archaic. The Archaic Period was characterized by an increase in plant exploitation for subsistence, more elaborate burial accoutrements, and increase in trade network complexity.

The Emergent Period is most notably marked by the introduction of the bow and arrow, the emergence of social stratification linked to wealth, and more expansive trade networks signified by the presence of clam disk beads that were used as currency.

4.5.2.4 Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port.

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to Monterey Bay in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established. The Franciscan missionary friars established 21 missions in Alta California (the area north of Baja California) beginning with Mission San Diego in 1769 and ending with the mission in Sonoma established in 1823. The nearest missions to the Project Site were in the vicinity of San Francisco Bay and included Mission San Francisco de Asis (Dolores) established in 1776 on the San Francisco Peninsula, Mission Santa Clara de Asis at the south end of San Francisco Bay in 1777, Mission San Jose in 1797, Mission San Rafael, established as an *asistencia* in 1817 and a full mission in 1823, and Mission San Francisco Solano in Sonoma in 1823. Presidios were established at San Francisco and Monterey.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. The Mexican government closed the missions in the 1830s and former mission lands, as well as previously unoccupied areas, were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or ranchos. There were small towns at San Francisco (then known as Yerba Buena) and Monterey during the Mexican period. The Mexican Period includes the years 1821 to 1848.

John Sutter, a European immigrant, 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, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento.

The American Period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. As a result of the treaty, Alta California became part of the United States as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850.

4.5.2.5 Project Area History

The City of Orland is located in the northeastern portion of Glenn County. The Sacramento River creates the eastern border of Glenn County. The County was organized in 1891 and the City of Willows is the county seat. The County is named after Dr. Hugh James Glenn. The Granville Perry Swift adobe was 1-mile north of Orland along Hambright Creek. Swift was a pioneer settler who crossed the plains in 1843. Swift's adobe, built in 1847, was located at the confluence of Hambright and Stony creeks and was the headquarters for cattle operations as far south as Woodland. The site of the Swift adobe is recognized as the first known structure built in Glenn County. Swift made a fortune during the Gold Rush by working along the Feather River. Swift relocated to Sonoma County in 1854.

The City of Orland was founded in the early 1870s as a large grain shipping center in Northern California. The railroad reached Orland in 1882. The City was named after one of the founders' home town in England. The townsite for Orland was laid in 1878. Orland College was founded in the 1880s. The college closed in 1890 once the Northern Branch State Normal School, today known as California State University, Chico, opened. The Orland Federal Irrigation Project, pilot project for federal irrigation in the state, authorized in 1907 and was an area of 20,000 acres watered by the East Park Reservoir. East Park Dam, located 60 miles southwest of Orland, was the first selected federally funded irrigation project in the West in 1906. After the dam was constructed, wooden buildings in town were replaced with reinforced concrete structures and over 100 new homes were built. In 1910, the population of Orland was 600, and by 1912 the population reached 2,000. Orland became profitable for farmers due to the good soil and access to irrigation water from canals and laterals.

4.5.2.6 Records Search

The records search consisted of a review of previous research and literature, records on file with the NEIC for previously recorded resources, and historical aerial photographs and maps of the vicinity. Seven previous cultural resource investigations have been conducted within 0.5 mile of the Project Area, covering approximately 10 percent of the total area surrounding the property within the records search radius. None of the previous studies included any part of the Project Area and all seven were within the 0.5-mile buffer. One survey investigated the Stony Creek Channel north of the Project Area and did not document any cultural resources within 0.5 mile of the Project Area.

The results of the records search indicate that none of the property has been previously surveyed for cultural resources, and therefore, a pedestrian survey of the Project Area was warranted. The records search also determined that two previously recorded pre-contact and historic-era cultural resources are located within 0.5 mile of the Project Area. Both of these are historic-era resources, associated with early European-American ranching and mining activities. There are no previously recorded cultural resources within the Project Area.

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 Section 15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Potentially significant impact.

ECORP surveyed the Project Area for cultural resources on April 5, 2023. Any exposed surface areas, and areas with minimal vegetation and better ground visibility were inspected for any indication of subsurface deposits or cultural soils. ECORP archaeologists observed displaced remnants of the 1940s orchard that was once within the southern half of the Project Area. In addition, ECORP inspected the location of where the buildings once stood; however, piles of imported road gravel were placed in the same location. ECORP did not identify any structural remains or foundations of those buildings other than a single broken piece of wood siding material. An unpaved access road is centrally located in the Project Area aligned in a north-to-south orientation. At the time of the survey, this road was being used to access the piles of road gravel for ground disturbing activities that were taking place to the south on County Road M 1/2, and to the northeast outside of the Project Area.

As a result of the survey, ECORP identified and recorded a segment of a previously unrecorded historic-era road, QC-01; County Road 13. However, there is nothing in the archival record to suggest that it is associated with the lives of persons significant in our past and is not eligible under NRHP/California Register of Historical Resources (CRHR) Criterion and deemed not significant. Therefore, this would be a less than significant impact.

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 Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than significant impact with mitigation incorporated.

As discussed previously, a records search consisting of a review of previous research and literature, records on file with the NEIC for previously recorded resources, and historical aerial photographs and maps of the vicinity was conducted for the Project Site. None of the previous studies included any part of the Project Area and all seven were within the 0.5-mile buffer.

The results of the records search indicate that none of the property has been previously surveyed for cultural resources, and therefore, a pedestrian survey of the Project Area was warranted. The records search also determined that two previously recorded pre-contact and historic-era cultural resources are located within 0.5 mile of the Project Area. Both of these are historic-era resources, associated with early European-American ranching and mining activities. There are no previously recorded cultural resources within the Project Area.

Due to the presence of alluvium along Hambright and Stony Creeks, and given the likelihood of pre-contact archaeological sites located along perennial waterways, there exists a moderately high potential for buried pre-contact archaeological sites in the Project Area. This likelihood is mitigated somewhat by previous uses of the property for orchard agriculture. Tree roots from orchards disrupt and can potentially destroy deeply buried resources. The presence of past orchard trees covering the Project Area makes it more likely that any buried pre-contact resource which may have been within the Project Area has been disturbed or destroyed. However, ground disturbance associated with development of the Project Site has the potential to impact previously unknown, subsurface historic resources should any be present. Mitigation measure CUL-1 is provided to reduce potential impacts to a level that is considered 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than significant impact with mitigation incorporated.

As discussed above, there are no known formal or informal cemeteries within the Project Site. 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:

- 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, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Glenn County Coroner (per § 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

4.6.1 Environmental Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California’s air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity.

4.6.1.1 Energy Types and Sources

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, closely followed by renewables, large hydroelectric and nuclear power. Pacific Gas and Electric (PG&E) provides electrical power and natural gas to the City of Orland. PG&E serves over 16 million people over a 70,000-square-mile service area in northern and central California. In 2021, PG&E provided electricity to customers that was 93 percent greenhouse gas emissions-free. They have also committed to a series of Climate and Emission goals, as they have pledged to reduce their carbon footprint by 2030 by integrating more renewable energy sources, reach net zero energy system by 2040, and achieve a climate positive energy system by 2050 (PG&E 2022).

4.6.1.2 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. 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.

The electricity consumption associated with all residential uses in Glenn County from 2017 to 2021 is shown in Table 4.6-1. As indicated, the demand has increased since 2017.

Year	Electricity Consumption (kilowatt hours)
2021	107,584,103
2020	105,432,658

Table 4.6-1. Residential Electricity Consumption in Glenn County 2017-2021

Year	Electricity Consumption (kilowatt hours)
2019	95,902,808
2018	92,741,180
2017	96,281,376

Source: CEC 2022

The natural gas consumption associated with all residential uses in Glenn County from 2017 to 2021 is shown in Table 4.6-2. As indicated, the demand has slightly decreased since 2017.

Table 4.6-2. Residential Natural Gas Consumption in Glenn County 2017-2021

Year	Natural Gas Consumption (therms)
2021	2,307,343
2020	2,368,116
2019	2,509,179
2018	2,235,269
2017	2,475,166

Source: CEC 2022

Automotive fuel consumption in Glenn County from 2018 to 2022 is shown in Table 4.6-3. Fuel consumption demand has slightly decreased since 2018.

Table 4.6-3. Automotive Fuel Consumption in Glenn County 2018-2022

Year	Total Fuel Consumption
2022	39,923,844
2021	40,191,471
2020	36,482,796
2019	40,741,830
2018	40,665,221

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than Significant Impact

The impact analysis focuses on the sources of energy that are relevant to the Proposed Project. 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 project. For the purpose of this analysis, the amount of electricity and natural gas estimated to be consumed by the Project is quantified and compared to that consumed by all residential land uses in Glenn County. Similarly, the amount of fuel necessary for Project construction is calculated and compared to that consumed in Glenn County, and the amount of fuel necessary for Project operations is calculated and compared to that consumed in Glenn County.

The analysis of electricity and natural gas is based on the California Emissions Estimator Model (CalEEMod) which quantifies energy use for Project operations (see Appendix 4.3). The amount of operational automotive fuel use was estimated using the CARB's Emissions Factor Model, 2021 version (EMFAC2021), which provides projections for typical daily fuel usage in Glenn County (see Appendix 4.6). The amount of total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1.

Energy consumption associated with the Proposed Project is summarized in Table 4.6-4.

Table 4.6-4. Proposed Project Energy and Fuel Consumption		
Energy Type	Annual Energy Consumption	Percentage Increase Countywide
<i>Building Energy Consumption</i>		
Electricity Consumption	570,335 kilowatt-hours	0.53 percent
Natural Gas Consumption	10,988 therms	0.48 percent
<i>Automotive Fuel Consumption</i>		

Project Construction Calendar Year One	40,690 gallons	0.10 percent
Project Construction Calendar Year Two	51,232 gallons	0.13 percent
Project Operations	113,443 gallons	0.28 percent

Source: Refer to Appendix 4.3 for building energy consumption calculations and Appendix 4.6 for fuel consumption calculations.

Notes: The Project increases in electricity and natural gas consumption are compared with all of the residential buildings in Glenn County in 2021, the latest data available. The Project increases in construction and operations automotive fuel consumption are compared with the countywide fuel consumption in 2022, the most recent full year of data.

Operations of the Proposed Project would include electricity and natural gas usage from lighting, space and water heating. As shown in Table 4.6-4, the annual electricity consumption due to operations would be 570,335 kilowatt-hours resulting in an imperceptible increase (0.53 percent) in the typical annual electricity consumption attributable to all residential uses in Glenn County. This is potentially a conservative estimate since in September 2018 Governor Jerry Brown Signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving net zero carbon dioxide (CO₂) emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for Greenhouse Gas Emissions (GHG) emission reduction. Governor's Executive Order B-55-18 requires CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal." Natural gas consumption due to operations would be 10,988 therms resulting in an imperceptible increase (0.48 percent) in the typical annual natural gas consumption attributable to all residential uses in Glenn County. For these reasons, the Project would not result in the inefficient, wasteful, or unnecessary consumption of building energy.

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 to construct the physical building and infrastructure would be temporary, lasting only as long as Project construction. As further indicated in Table 4.6-4, the Project's gasoline fuel consumption during the one-time construction period is estimated to be 40,690 gallons over the course of the first calendar year of construction and 51,232 gallons in the second calendar year of construction. This would increase the annual construction related fuel use in the county by 0.10 percent and 0.13 percent respectively. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to

minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and requiring 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.

The Project is estimated to generate approximately 614 weekday trips. As indicated in Table 4.6-4, this would result in the consumption of approximately 113,443 gallons of automotive fuel per year, which would increase the annual countywide automotive fuel consumption by 0.28 percent. This analysis conservatively assumes that all of the automobile trips projected to arrive at the Project during operations would be new to Glenn County. Further, a liberal approach was taken for vehicle trip estimation to ensure potential impacts due to operational gasoline usage were adequately accounted. Fuel consumption associated with vehicle trips generated by the Project 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than Significant Impact

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The Project would be built to the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the CCR (Title 24). Title 24 was established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Title 24 is updated approximately every three years, with the most recent update of the 2022 standards that became effective on January 1, 2023. The 2022 Energy Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2022 update to the Energy Standards encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, among other goals. The 2022 Energy Standards build and improve upon previous goals of achieving net Zero Net Energy. Buildings permitted on or after January 1, 2023, must comply with the 2022 Standards. Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments. Additionally, in January 2010, the State of California adopted the California Green Building Standards Code (CalGreen) that establishes mandatory green building standards for all buildings in California. The code was most recently updated in 2022, effective for all applicable developments starting January 1, 2023. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. With these

building standards in place, the Project would not obstruct any state or local plan for renewable energy or energy efficiency.

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

4.6.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.7 Geology and Soils

4.7.1 Environmental 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).

4.7.1.1 Site Soils

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

Soil (Map Unit Symbol, Map Unit Name)	Percentage of Site	Drainage	Flooding Frequency Class	Frost Action¹	Runoff Potential²	Linear Extensibility³	Erosion Hazard⁴	Plasticity Rating⁵
Od – Orland loam, very deep	1.0%	Well drained	Rare	None	B (moderate)	1.5%, low	Slight	6.3%
Omr – Orland loam, moderately deep over gravel, 0 – 2 percent slopes, MLRA 17	11.6%	Well drained	Occasional	None	C (moderate)	1.2%, low	Slight	9.8%
Osg – Orland loam, shallow over gravel	24.7%	Well drained	Occasional	None	B (moderate)	1.5%, low	Slight	2.5%
Wyo – silt loam	62.8%	Well drained	None	None	B (moderate)	1.5%, low	Slight	11.6%

Source: NRCS 2023

Notes:

- 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.
- 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.
- 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.
- 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.

5. Plasticity index 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 plasticity index 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.

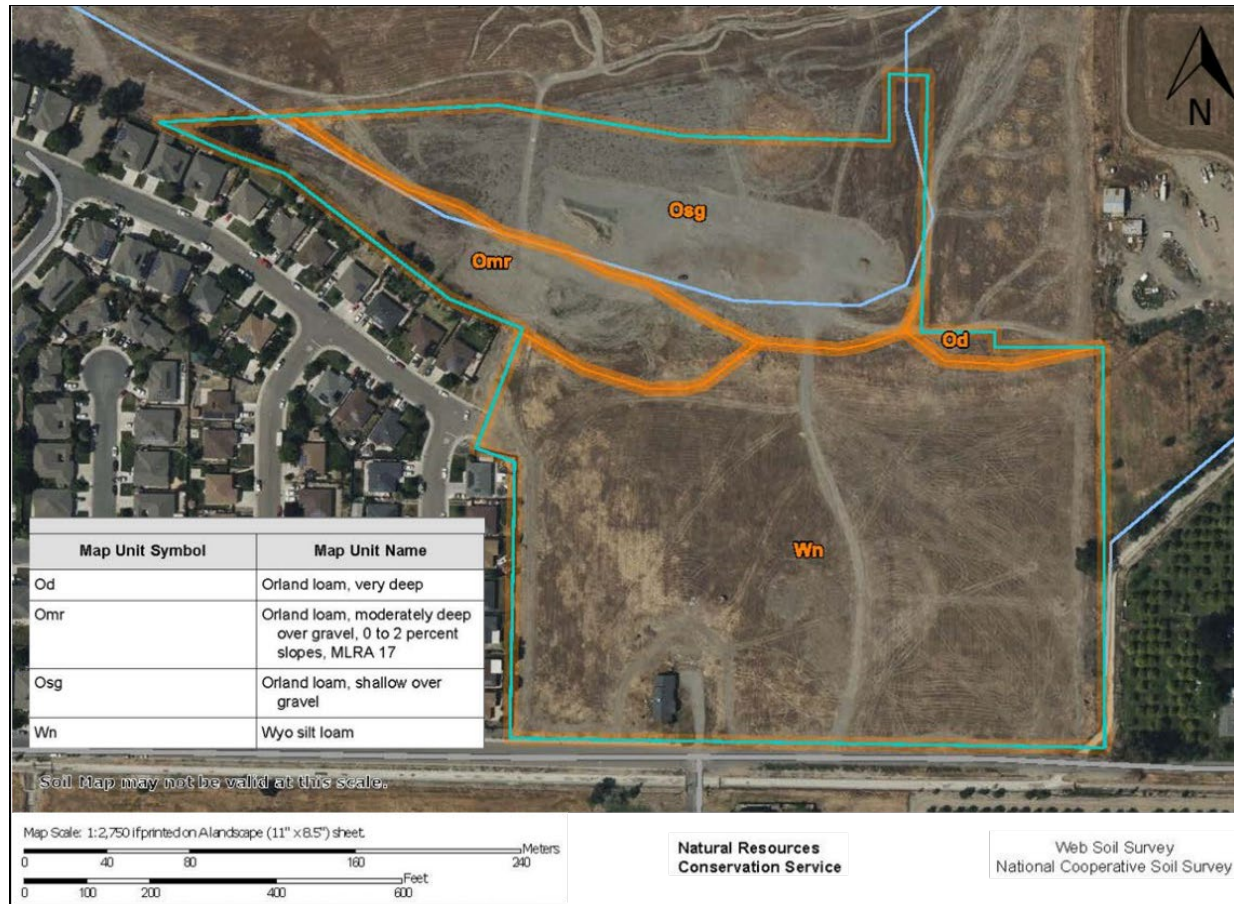


Figure 7. Project Site Soils

4.7.1.2 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 and defines an active fault as one that 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 (last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria in an effort 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 2011).

According to the CGS Seismic Hazards Program: Overlapping Landslide and Liquefaction Zones map, the Project Site is not located within a mapped geologic hazard zone designated by the State (CGS 2023a). The Project Site is not located on any known *active* earthquake fault trace. In addition, the Project Site is not contained within an Alquist-Priolo Earthquake Fault Zone. Therefore, fault rupture is not considered a hazard for the Project. The Project Site is not subject to significant geologic hazards such as significant seismic shaking as a result of an earthquake, seismic-induced soil liquefaction, lateral spreading, or landslides and slope instability (CGS 2023b).

4.7.1.3 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 Area and vicinity. The purpose of the assessment was to determine the sensitivity of the Project Area, whether known occurrences of paleontological resources are present within or immediately adjacent to the Project Area, 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:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Less than significant impact.

i) No impact.

The Proposed Project Site is not located within an Alquist-Priolo Earthquake Zone (Geocon 2011). The Project Site is not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the Site. By CGS definition, an active fault is one with surface displacement within the last 11,000 years. A potentially active fault has demonstrated evidence of surface displacement within the past 1.6 million years. Faults that have not moved in the last 1.6 million years are typically considered inactive. There would be no impact related to fault rupture.

ii) Less than significant impact.

Depending upon the magnitude, proximity to epicenter, and subsurface conditions (e.g., bedrock stability and the type and thickness of underlying soils), ground shaking damage could vary from slight to intensive. According to CGS' Earthquake Shaking Potential for California mapping, the Proposed Project Site is located in an area with a low likelihood of experiencing ground shaking (CGS 2022). According to the CGS Seismic Hazard Zone Map, the Project Site is not subject to significant geologic hazards such as significant seismic shaking (CGS 2023c). The Proposed Project would have a less than significant impact related to strong ground shaking.

iii) Less than significant impact.

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, and
- 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 areas 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 2023a). Additionally, according to the CGS Seismic Hazards Program, the Site is not located within an area of seismic-induced soil liquefaction (Geocon 2021). As such, the Proposed Project would result in less than significant impacts with regard to seismic-related ground failure, including liquefaction.

iv) Less than significant impact.

The 34.8-acre Project Site is relatively flat with elevations ranging between 243 to 247 feet AMSL throughout the Site. The Project Site has minimal elevation gain and the area does not have steep hillsides or other formations susceptible to landslides during a seismic event. As such, the potential for landslides would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

As previously shown in Table 4.7-1, most of the Project Site’s soils have a slight erosion potential. The Proposed Project includes the construction of new residential structures, with construction involving grading, excavation, and soil hauling, which would disturb soils and potentially expose them to wind and water erosion.

Municipal Code Chapter 12.04 provides the City’s regulations for grading, erosion, and sediment control. This regulation requires a grading permit for all grading on any site in the City. Regulations in Section

12.04.600 would require the Proposed Project to provide an erosion and sediment control plan to be approved by the director of the Orland Public Works Department.

Any development involving clearing, grading, or excavation that causes soil disturbance of 1 or more acres, or any project involving less than 1 acre that is part of a larger development plan and includes clearing, grading, or excavation, is subject to National Pollutant Discharge Elimination System (NPDES) State General Permit (Order No. 2009-0009-DWQ) provisions. Any development of this size in the City of Orland, including the Project Site, would be required to prepare and comply with an approved Stormwater Pollution Prevention Plan (SWPPP) that provides a schedule for the implementation and maintenance of erosion control measures and a description of the erosion control practices, including appropriate design details and a time schedule. The SWPPP would consider the full range of erosion control Best Management Practices (BMPs), including any additional site-specific and seasonal conditions. Erosion control BMPs include, but are not limited to, the application of straw mulch, hydroseeding, the use of geotextiles, plastic covers, silt fences, and erosion control blankets, as well as construction site entrance and outlet tire washing. The State General Permit also requires that those implementing SWPPPs meet prerequisite qualifications that would demonstrate the skills, knowledge, and experience necessary to implement SWPPPs. The NPDES requirements would significantly reduce the potential for substantial erosion or topsoil loss to occur in association with new development. In addition, the Proposed Project would be required to use BMPs to control runoff from all new development and thus limit erosion.

Since erosion impacts are often dependent on the type of development, intensity of development, and amount of lot coverage of a particular project site, impacts can vary. However, compliance with NPDES and SWPPP requirements, as well as compliance with Municipal Code Chapter 12.04, would ensure that soil erosion and related 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) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

As discussed previously, the Project Site has little potential for landslides.

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 (USDA 2023). As indicated in Table 4.7-1 above, the

Web Soil Survey identifies the Project Site as having soils with no frost action potential. Additionally, as discussed in Item a) iii) above, the Project Site is identified as not being susceptible to liquefaction. 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.³ This can occur as a result of high-volume water, oil, or gas extraction operations. No oil, gas, or high-volume water extraction wells are known to be present in the Project vicinity. According to the United States Geological Survey (USGS) Areas of Land Subsidence in California webpage, the City, including the Project Site, is located in an area of 0-1cm land subsidence (USGS 2023). 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. The collapse potential of the Project Site soil must be determined for consideration in the foundation design.

Because of the distance from active faults and the nature of the Project, the potential for settlement or collapse at the Project Site is considered unlikely. As such, there is 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
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

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

³ The processes by which loose sediment is hardened to rock are collectively called lithification.

potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if greater than 9 percent. If the linear extensibility is greater than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. As previously shown in Table 4.7-1, the majority of Project Site soils exhibit a linear extensibility value of 1.5 percent. Soils with linear extensibility at this range correlate to having a low expansion potential, respectively. 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 waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Proposed Project 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Potentially significant impact.

A search of the UCMP failed to indicate the presence of paleontological resources on the Project Site. Although paleontological resources sites were not identified in the Project Area, there is the possibility that unanticipated paleontological resources will be encountered during ground-disturbing Project-related activities. Therefore, mitigation is required to reduce this potential impact. As such, mitigation measure GEO-1 is included to reduce impacts to unknown paleontological resources to a less than significant level.

4.7.3 Mitigation Measures

GEO-1 If paleontological or other geologically sensitive resources are identified during any phase of project development, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Orland. The City 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 consulting 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 Project Site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

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

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Typically, 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 CO₂, methane, nitrous oxide, 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. Methane traps over 25 times more heat per molecule than CO₂, nitrous oxide absorbs 298 times more heat per molecule than CO₂. Often, estimates of GHG emissions are presented in CO₂ equivalents (CO₂e). Expressing GHG emissions in CO₂e 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 CO₂ were being emitted.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

4.8.2.1 Project Construction-Related Greenhouse Gas Emissions

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 3-2 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	CO₂e Emissions (Metric Tons/Year)
Construction Calendar Year One	413
Construction Calendar Year Two	520
<i>Significance Threshold</i>	<i>1,100</i>
Exceed Threshold?	No

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

As shown in Table 4.8-1, construction-generated emissions would not exceed the Project significance threshold.

4.8.2.2 Project Operational Greenhouse Gas Emissions

Long-term operational GHG emissions attributable to the Project are identified in Table 4.8-2.

Table 4.8-2. Operational-Related Greenhouse Gas Emissions	
Emission Source	CO₂e Emissions (Metric Tons/Year)
Mobile	877
Area	67
Energy	112
Water	6
Waste	14
Refrigerants	1
Total Annual Operational Emissions	1,077
<i>Operational Threshold</i>	<i>1,100</i>
Exceed Annual Threshold?	No

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

Notes: Emission projections are based on CalEEMod model defaults for the Glenn County portion of the NSVAB.

As shown in Table 4.8-2, GHG emissions generated due to Project implementation would not exceed the Project significance threshold.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant 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 and 4.8-2 above, the Proposed Project would be under the construction and operational 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.

4.8.3 Mitigation Measures

No significant impacts were identified, and 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, Section 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, Section 662601.10, of the California Code of Regulations 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 Section 65962.5, both the California Department of Toxic Substance Control (DTSC) and the State Water Resources 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 and the SWRCB identified no open cases of hazardous waste violations within 1 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 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 2023).

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Construction may include the use of hazardous materials 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 observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law.

Residential uses are not typically associated with routine transport, use, or disposal of hazardous materials and do not present a reasonably foreseeable release of hazardous materials. While some hazardous materials may be used for residential purposes, such as household cleaners and lawn care equipment and chemicals, the amount of these materials is small and the potential for hazardous releases is minute.

Regulatory requirements for the transport of hazardous wastes in California are specified in Title 22 of the CCR, Division 4.5, Chapters 13 and 29. In accordance with these regulations, transport of hazardous materials must comply with the California Vehicle Code, California Highway Patrol regulations (contained in Title 13 of the CCR); the California State Fire Marshal regulations (contained in Title 19 of the CCR); U.S. Department of Transportation regulations (Title 49 of the Code of Federal Regulations); and USEPA regulations (contained in Title 40 of the Code of Federal Regulations). The use of hazardous materials is regulated by the DTSC (Title 22, Division 4.5 of the CCR). Therefore, potential residential impacts for creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials from residential uses 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

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 at the Site, 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 observed 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. Long-term impacts associated with handling, storing, and disposing of hazardous materials from project operation would be less than significant because any hazardous materials used for operations would be in small quantities.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Project Site is located approximately 0.14 mile north of the Orland William Finch Charter School, which is located at 607 Tehama Street within the City of Orland. The school would be within 0.25 mile of commercial, residential, park, and open space land uses proposed within the Project Site. Schools are frequently located in proximity to commercial and residential land uses, and the use of hazardous materials associated with these existing and proposed land uses is not expected to create a risk of hazardous conditions at the proposed school site. The construction and operation of the Proposed Project would not include uses that would emit hazardous emissions or include activities that use acutely hazardous materials. Any hazardous materials used onsite would be typical of construction and residential and commercial land uses and would not create hazardous emissions that could adversely affect nearby schools. The impact would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

Under Government Code Section 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 that the Proposed Project Site is not located on or adjacent to a hazardous materials site. Given that there are no existing hazardous waste sites within or directly adjacent to the Project Site, and that the closest hazardous waste site being classified as open has been mitigated to compliance, the Project will have no impact in this area.

	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 area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Project Site is located approximately 2.6 miles northwest of the Haigh Field Domestic Airport. Because the Project Site is not located within 2 miles of an airport, there would be no safety hazard to future residents due to proximity to planes overhead and in the immediate vicinity. Therefore, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Standard evacuation routes have not been designated in Glenn County or Orland. However, the Glenn County Sheriff's Office, 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 California Highway 32 (SR 32) and Interstate 5 (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 construction of a truck service center and would not interfere with any emergency response or evacuation plans. Implementation of the Proposed Project would result in no impact in this area.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

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.

Fire Hazard Severity Zone (FHSZ) mapping is performed by the California Department of Forestry and Fire Protection (CAL FIRE) and is based on factors such as fuels, terrain, and weather. According to the CAL FIRE, FHSZ mapping, the Project Site is located in an area with a moderate risk of wildfire (CAL FIRE 2023).

Developed urban uses surround most sides of the Project Site. There is undeveloped land north of the northernmost portion of the Site, adjacent to Stony Creek. These small areas of undeveloped land would not pose a substantial risk of wildfire that could affect the Project Site. The Proposed Project would develop the currently undeveloped Site, which would reduce the wildland fire potential and associated risks for existing land uses adjacent to the Site because the existing undeveloped Site contains grassland and oak woodland that have a greater risk of wildfires than a developed site. Additionally, as part of a separate project, the City of Orland Fire Department has recently acquired a bulldozer to create a firebreak along Stony Creek, just northwest of the Project Site. This firebreak would assist in further reducing the risk of serious injury or property damage in the case of a wildland fire coming from the outer limits of the City. Taking into consideration the aforementioned factors related to the reduction of wildfire risk, and the CAL FIRE moderate wildfire risk rating, would result in a less than significant impact with respect to exposure to risks associated with wildland fires.

4.9.3 Mitigation Measures

No significant impacts were identified and 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 Project Site is located within two separate watersheds: the northern portion of the Site is within the Hambright Creek Watershed, consisting of the majority of lots that would be fronting Stony Creek Drive and the proposed community recreation area and storm drain basin area in the northern portion of the Site; the remaining southern portion of the Site is located within the Deadman's Reach-Sacramento River Watershed. Both of the Site's watersheds are part of the Sacramento Hydrologic Basin Planning Area. The drainage of the Site would be designed in a way that would allow water to drain into the storm drainage basin area, located within the Hambright Creek Watershed.

Hambright Creek is a relatively small tributary watershed (approximately 18 square miles in area) of Stony Creek and is shown on U.S. Geological Survey maps as intermittent, or flowing at intervals, over its entire length. The current confluence of Hambright and Stony Creeks is located just outside the northeastern City limits of Orland (see Figure 4.7-3 of the Orland General Plan Draft EIR). Hambright Creek is largely ephemeral, flowing only after rainfall of a sufficient magnitude, over much of its reach. There are no stream gauges on Hambright Creek (City of Orland 2010b).

While in its present state there do not appear to be any aquatic resources present, historically Hambright Creek appears to have traversed west to east through the Study Area. Based on historical Google Earth imagery, the creek has not followed this path since at least 1998. Hambright Creek presently appears to enter Stony Creek approximately one-quarter mile west of the Study Area. Some residual flows may have continued the eastward path based on vegetation along the original creek's path, however, after the heavy rains of 2016, Stony Creek eroded its banks southward, permanently altering the path of Hambright Creek. In its present state, Hambright Creek empties into Stony Creek before it reaches the Study Area. Contemporary maps still show Hambright Creek traversing west to east through the Study Area, but this is inaccurate (ECORP 2023a).

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. There are three major impoundments on Stony Creek: Black Butte, Stony Gorge, and East Park reservoirs. According to the Stony Creek Watershed Program, several issues are unique to Stony Creek from Black Butte Dam downstream to the Sacramento River (City of Orland 2010b). The principal issues of this reach are as follows:

- Accelerated channel erosion and resulting property damage;
- Displacement of native riparian vegetation by invasive exotic weeds;
- Degraded aquatic habitat, including that needed for anadromous and resident fish populations;

- Accelerated erosion and channel modifications resulting in increased temperatures and sediment discharges;
- A modified hydrology (resulting from Black Butte Dam operations) characterized by punctuated stream flows that impede the system from achieving equilibrium and that have adverse impacts on aquatic life, habitat, and channel stability.

Groundwater

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 400 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 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 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 4.24 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 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 over-drafted 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).

4.10.1.2 Project Site Hydrology and Onsite Drainage

The 21.2-acre Project Site is relatively flat with elevations ranging between 239 to 247 feet AMSL throughout the Site. The southern portion of the Site, located in the Deadman's Reach Sacramento Watershed, generally slopes towards the southern boundary (Bryant Street), while the northern portion of the Site slopes north towards Hambright Creek/Stony Creek.

Drainage within the southern portion of the Project Site flows from an existing culvert pipe under Bryant Street and into Lateral 40 running parallel along the southern side of Bryant Street. The northern portion of the Site flows into Hambright Creek and Stony Creek to the north of the Site.

A 100-year floodplain surrounds the proposed on-site drainage basin in the northern portion of the Site, extending from the northern edge of the Site to the area just north of the proposed houses that would front Stony Creek Drive to the north. According to the BRA conducted for the Site, there do not appear to be aquatic resources present within the Study Area because no areas support the necessary three criteria

to be considered a wetland (ECORP 2023a). See the image below depicting the Project Site's proximity to the existing floodplains surrounding the Site.

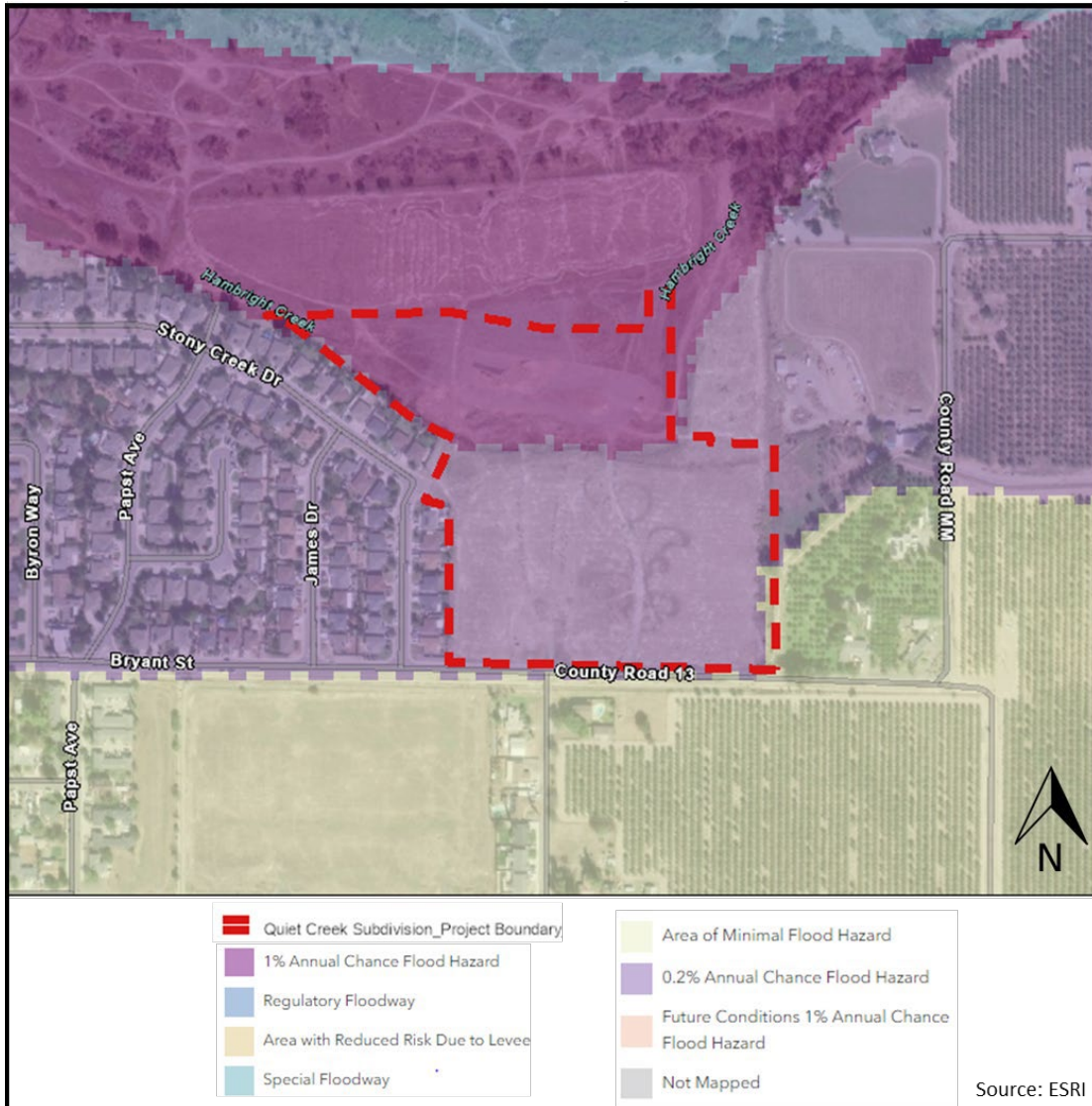


Figure 8. Project Site 100-Year Floodplain

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

4.10.2.1 Construction Related Issues

Without implementation of appropriate control measures, grading involved in preparing the Project Site for construction would decrease vegetative cover and potentially increase the rate and quantity of stormwater runoff. This would result in accelerated soil erosion and sediment delivery to the on-site waterway and off-site areas. This could increase the quantity of suspended solids in local waterways and contribute to elevated turbidity in portions of the Hambright Creek watershed north of the Project Site.

Pursuant to the requirements of the City's General Plan Policies and Programs (General Plan Program 5.6.A.1), Program 5.6.A.1 requires applicants for new development projects to adhere to Regional Water Quality Control Board discharge standards, including identifying specific measures for minimizing project related erosion. Program 5.6.A.2 requires development projects to conform to standard Regional Water Quality Control Board (RWQCB) best management practices as a means to minimize erosion impacts. Through the required NPDES Permit, projects are evaluated for potential soil erosion impacts on a site-by-site basis. As impacts are dependent on the type of development, intensity of development, and amount of lot coverage of a particular project, impacts due to soil erosion can vary. However, compliance with adopted erosion control standards and NPDES and SWPPP requirements, as well as implementation of the proposed General Plan programs listed above, would ensure that the proposed General Plan soil erosion-related impacts are less than significant (City of Orland 2010b).

Additionally, prior to issuance of a grading permit, the applicant would be required to demonstrate coverage for Project activities under the SWRCB's NPDES General Permit for Storm Water Discharges Associated with Construction Activities. To obtain coverage under the permit, the Project applicant would submit a Notice of Intent with the required permit fee and prepare a SWPPP for review by the Central Valley Regional Water Quality Control Board. The SWPPP would include the following four major elements:

1. Identify pollutant sources, including sources of sediment, which may affect the quality of stormwater discharges from the construction site.
2. Identify non-stormwater discharges.
3. Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction.

4. Identify, construct, implement in accordance with a time schedule, and assign maintenance responsibilities for post-construction BMPs to be installed during construction that are intended to reduce or eliminate pollutants after construction is completed.

In addition, dischargers are also required to inspect construction sites before and after storms to identify stormwater discharge from construction activity, and to identify and implement controls where necessary.

Typical BMPs that would be appropriate to implement at the Project Site may include: scheduling or limiting activities to certain times of the year; implementing dust control procedures throughout the Site; stabilizing cut and fill slopes as soon as possible; controlling erosion through a variety of means such as mulch and compost blankets, riprap, and installation of sediment retention structures (such as a sediment retention basin); and sediment control through the use of measures such as storm drain inlet protection, vegetated buffers, fiber rolls and berms, sediment fencing, and straw or hay bales.

Other temporary BMPs would ensure *good housekeeping* at the Project Site during construction. These would include cleaning construction equipment and preventing the leakage of fluids, storing materials away from surface water, protecting sensitive areas with sediment barriers or other containment methods, controlling laying of concrete and washing of related equipment, and collecting debris and gravel associated with paving operations. Adequate temporary storm drainage controls would be provided, including on-site drainage containment, the placement of silt fences around construction areas, and constructing temporary sediment basins, as necessary.

Compliance with the City's General Plan Policies and implementation of the provisions contained in the SWPPP approved by the RWQCB would reduce potential impacts to water quality due to construction activities to less than significant by ensuring that all appropriate and necessary BMPs are implemented to avoid or minimize the discharge of pollutants and sediment to surface water.

4.10.2.2 Operational Related Issues

Runoff from urban land use typically contains oils, grease, fuel, antifreeze, and byproducts of combustion (e.g., lead, cadmium, nickel, and other metals), as well as nutrients from fertilizers and animal waste, sediment, pesticides, herbicides, and other pollutants. Additionally, sizable quantities of animal waste from pets contribute bacterial pollutants into surface and source waters.

Precipitation during the early portion of the wet season displaces these pollutants into the stormwater runoff, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff, containing peak pollutant levels, is referred to as the *first flush* of storm events. It is estimated that during the rainy season, the first flush of heavy metals and hydrocarbons would occur during the first inches of seasonal rainfall.

The amount and type of runoff generated by future operations associated with the Proposed Project would be greater than that under existing conditions due to increases in impervious surfaces. There would likely be a corresponding increase in urban runoff pollutants and first flush roadway contaminants such as heavy metals, oil, grease, nutrients (i.e., nitrates and phosphates), pesticides, and herbicides from

landscaped areas. These constituents may result in water quality impacts to on- and off-site drainage flows and to downstream area waterways.

According to the Site plans (Figures 4 through 6), stormwater drainage facilities are proposed to be installed throughout the Project Site, including the storm water basin in the northern portion of the Site. At final buildout, the onsite drainage basin in the northern portion of the Site would act as the drainage basin for the existing tributary of the 32.86-acre area of the neighborhood directly west of the Project Site, along with all of the new tributary area (34.9 acres) of the Proposed Project.

The Proposed Project would be required to prepare and comply with an approved SWPPP, General Plan Program 5.6.A.1, and the requirements of the RWQCB. Compliance with these requirements 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

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.

The Proposed Project would increase the demand for groundwater in the City. The City provides water use estimates based on HUE, the amount of water a single-family home would use on a monthly basis. The average daily water demand per HUE is 571 gallons (City of Orland 2015). Using this factor, the Proposed Project has the potential to result in a residential water demand of 37,115 gpd. Based on these numbers, a total new groundwater demand for the Proposed Project would be 37,115 gpd or 13.55 million gallons per year. The Project’s annual water demand represents 0.00003 percent⁴ of the available groundwater in the Colusa Groundwater Subbasin. Therefore, the project would have a less than significant impact on groundwater supply.

Additionally, the Proposed Project would have the potential to remove a portion of the 22.6-acre Site’s potential groundwater recharge area due to the development of this area with impervious surfaces. However, according to the *Orland General Plan Draft 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 or Hambright Creek to the north. Therefore, the Project would have a less than significant impact on groundwater recharge.

⁴ 1.45 million gallons of project annual water demand/4.24 trillion gallons of water in the Colusa Groundwater Subbasin = 0.00003 percent.

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;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

i) Less than significant impact.

The proposed drainage basin onsite would expand the capacity of the existing Site drainage characteristics by constructing a drainage basin large enough to provide for the residential subdivision west of the Site and the future residences of the Proposed Project. The overflow for the drainage basin is located at the northeastern corner of the Project Site and would drain into Hambright Creek/Stony Creek. The outflow of the basin would be designed to have two (2) separate outflow systems along the southwestern edge of the basin draining into the drainage basin. According to the Site drainage plans (Figure 5), the stormwater from the Proposed development would be within Bryant Street, Coopers Crossing, Stony Creek Drive, and Joy Drive all flowing into Andrea Way before discharging into the proposed storm water basin.

Construction activities within the Project Site would result in soil disturbances. For those activities that disturb 1 acre or more of land, an NPDES Construction General Permit would be required prior to the start of construction. To comply with the requirements of the NPDES Construction General Permit, these projects will be required to file a Notice of Intent 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 as discussed previously. Preparation of and compliance with a required SWPPP will reduce potential runoff, erosion, and siltation associated with construction and operation.

As such, the effects of the Proposed Project on on-site and off-site erosion and siltation would be less than significant.

ii-iii) Less than significant impact.

Implementation of the Proposed Project may result in the substantial increase of the rate or amount of surface runoff as the Site is developed. Figures 5 and 6 provide the Project’s Grading and Drainage Plan. As shown and discussed above, streets on the Project Site would include a storm water drainage system designed to collect storm water runoff from the proposed lots and convey this runoff into the proposed storm water basin in the northern portion of the Site. Once in the storm water basin, the runoff would flow out north into Hambright Creek/Stony Creek north of the Site. A 100-year storm drain trench calculation report was conducted for the Site in order to determine if the basin’s capacity would be adequate enough to support the projected storm water runoff for both the existing development’s tributary to the west and the new tributary that would include the Proposed Project. As such, the Project would have a less than significant impact in this area.

iv) Less than significant impact.

FEMA flood hazard map 06021C0170D indicates that the FEMA-designated 100-year floodplain occurs through the northern portion of the Project Site. The FEMA-designated floodplains were mapped based on regional topography and drainage data and do not reflect site-specific conditions. The FEMA-designated floodplain and the mapped floodplain are shown on the on Figure 4 and the image above. As shown in this figure, the FEMA 100-year floodplain would not encroach on any of the residential lots but would approach the southern boundary of the proposed storm water basin. The elevation of the proposed basin ranges from 237.49 ft to 250.35 ft at final grade. The elevation of the 100-year floodplain, as indicated on the storm water Site plan (Figure 5), is shown as 239.90 ft AMSL. Therefore, any floodwater that would encroach on the Project Site would not penetrate any lots with future residences built, and would be contained outside of the northern boundary of the storm drain basin, which has an elevation of 244 ft AMSL at its lowest point. 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
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Project Site is not protected by levees from any flood hazard. 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 the dam may occur as a result of structural failure of the Black Butte Dam, located approximately 10 miles upstream of Stony Creek, 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 as a result 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. Based on the discussion above, there would be a less than significant impact.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The City of Orland is a participating member of the Glenn Groundwater Authority formed in 2017. However, the Groundwater Sustainability Plan is still under review with the public comment period ending on April 23rd, 2023 (DWR 2023c). As such, the Project would have no impact to the 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, and no mitigation measures are required.

4.11 Land Use and Planning





















































4.11.1 Environmental Setting

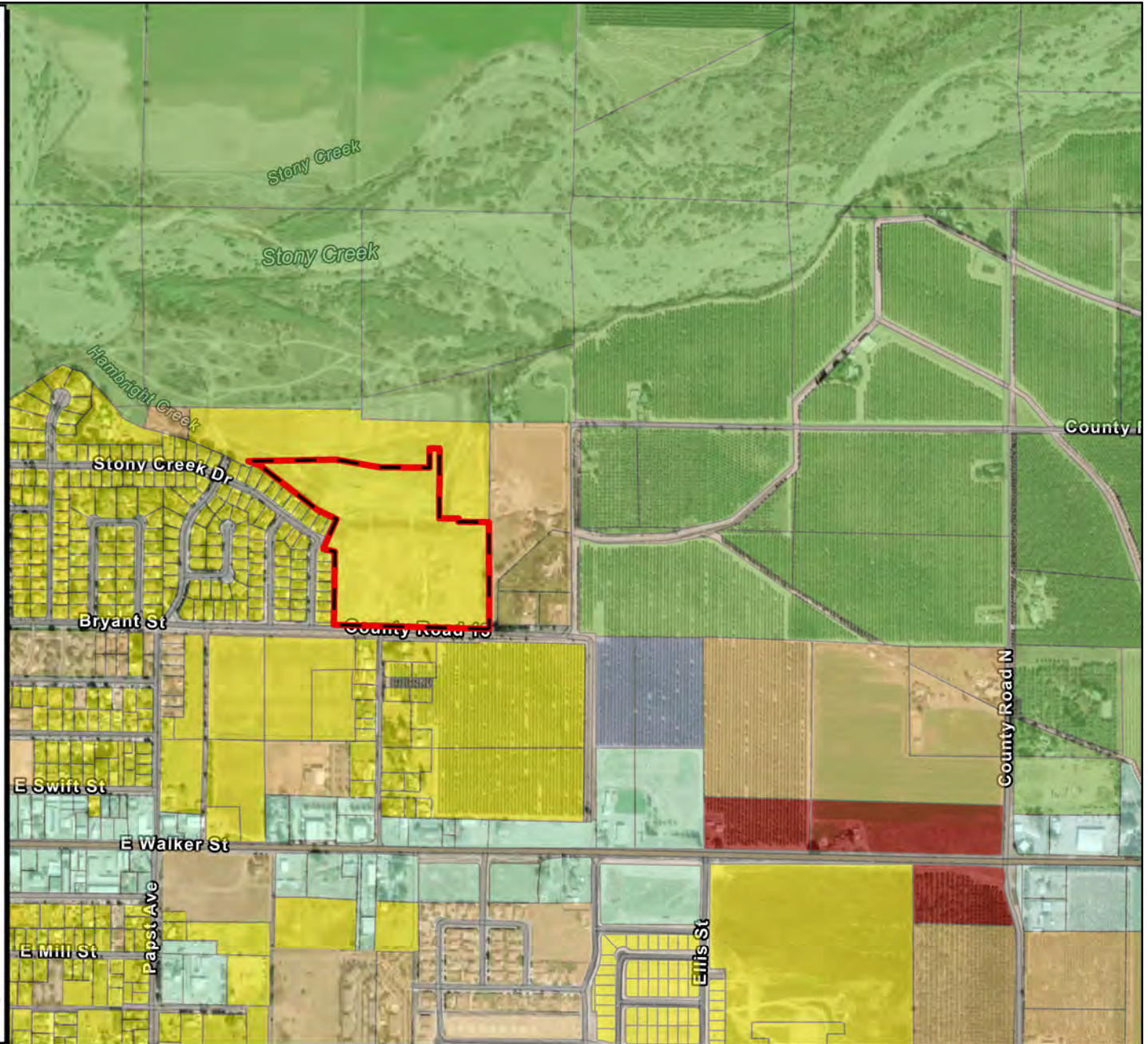
The 34.8-acre Site is zoned for Residential One-Family (R-1) and designated with the Low-Density Residential (0-6 du/ac) General Plan land use designation. While the Proposed Project would result in a change in use from vacant land to residential, this change has been considered by the City in the General Plan. See Figure 9 Land Use/Zoning. Surrounding uses includes single-family homes in the subdivision neighborhood directly west of the Site, single-family homes fronting Road M¹/₂ south of the Site, and rural

residential and agricultural uses to the east of the Project Site. To the north of the Project Site is rural residential uses and agricultural uses beyond Stony Creek. See Figure 3 for surrounding uses.

Location: K:\Projects\2023-058 Orland Quiet Creek\SMIND\CEQA\Figures\Maps\Land Use Zoning Designations.aprx - Landscape Template (egme - 3/28/2023)

Map Contents

 Project Boundary	 M-L
Zoning	 MH
 AE-20	 ML
 AE-40	 MP
 AE-80	 OS
 AP-160	 P-D
 AP-40	 P-F
 AP-80	 PDC
 AT-10	 PF
 AV	 R-1
 C	 R-1/A
 C-1	 R-1/PD
 C-2	 R-2
 C-H	 R-3
 CC	 R-M
 CG	 R-P
 CG/ML	 RE-1
 CG/ML/PD	 RE-10
 CG/PD	 RE-2
 CH	 RE-5
 E	 RE-NW
 FA-160	 RPM
 FS-80	 RZ-160
 HVC	 SC
 LC	 TPZ-160
 M	 <all other values>
 M-H	



Map Date: 3/28/2023
Sources: ENTER SOURCES



Figure 9. Land Use Zoning

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The existing and proposed land uses surrounding the Project Site are generally residential to the west and south of the Project Site, rural residential and agriculture to the east and north, beyond Stony Creek. Although the City's General Plan addresses the land north and east of the Site, these lands are outside of the City Limits as the Site's northern and eastern boundaries are also the boundaries of the limits of the City of Orland. Bryant Street runs along the southern boundary of the Project Site. Zoning designations surrounding the Project Site are Residential One-Family to the west and south, Residential Estate 5-acre minimum (RE-5) to the east (outside of the City Limits), and Exclusive Agriculture 20-acre minimum to the north (outside of the City Limits).

The Project Site is currently vacant and there are no established communities on Site that the Proposed Project would disrupt or divide. Although there is a residential community to the west of the Site, development on the largely vacant Project Site would not disrupt or divide the existing neighborhoods. Because the land uses proposed by the Project would be consistent with current uses surrounding the Project Site, 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) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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, and 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 and abuts the northern portion of the Project Site. 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). 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 2010b).

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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, and 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 and the average daily noise levels.

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. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources such as highways, and hard and flat surfaces such as concrete or asphalt, have an attenuation rate of 3.0 A-weighted decibels (dBA) per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary sources typically attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance from the source (USEPA 1971).

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the *line of sight* between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise but are less effective than solid barriers.

4.13.1.2 Vibration

Ground vibration can be measured several ways to quantify the amplitude of vibration produced. This can be through peak particle velocity or root mean square velocity. These velocity measurements measure the 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.

4.13.2 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

4.13.2.1 Onsite Construction Noise

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., site preparation, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction Site.

As further described in the Noise Impact Assessment (Appendix 4.13), the nearest sensitive receptors to the Project Site are several residences fronting Stanton Way and Stony Creek Drive, located directly adjacent to the Project's western boundary. Policy 6.1.J from the General Plan Noise Element states that construction activities shall be limited to the hours of 7 a.m. to 5 p.m. unless an exemption is received from the City to cover special circumstances. Furthermore, Policy 6.1.K requires that all internal combustion engines used in conjunction with construction activities shall be muffled according to the equipment manufacturer's requirement. The City does not promulgate a numeric threshold pertaining to the noise associated with construction. In fact, Policy 6.1.I of the General Plan states that noise associated with construction activities is exempt from the City noise standards. 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 Roadway Noise Construction Model 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). Further details regarding NIOSH standards can be found within the Noise Impact Assessment (Appendix 4.13).

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 FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment simultaneously from the center of the Project Site (FTA 2018), which in this case is approximately 465 feet from the closest single-family home fronting Stanton Way. The anticipated short-term construction noise levels generated for the necessary equipment for each phase of construction are presented in Table 4.13-1.

Construction Phase	Estimated Exterior Construction Noise Level @ Closest Noise Sensitive Receptor (dBA L_{eq})	Construction Noise Standard (dBA L_{eq})	Exceeds Standards?
Site Preparation	68.3	85	No
Grading	68.8	85	No
Building Construction, Paving, and Painting	71.1	85	No

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

Notes: Construction equipment used during construction is derived from the California Emissions Estimator Model (CalEEMod). CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. Consistent with FTA recommendations for calculating construction noise, the construction noise was measured from the center of the Project Site (FTA 2018), which is 465 feet from the nearest sensitive receptor.

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 4.13-1, construction activities would not exceed the 85 dBA NIOSH construction noise threshold during any phase of construction at the nearby noise-sensitive receptors. It is noted that construction noise was modeled on a worst-case basis. It is very unlikely that all pieces of construction equipment would be operating at the same time for the various phases of Project construction as well as at the point closest to residences.

4.13.2.2 Offsite Construction Worker Trips

Project construction would result in additional traffic on adjacent roadways over the period that construction occurs. According to the California Emissions Estimator Model, which is used to predict the number of construction-related automotive trips, the maximum number of Project construction trips traveling to and from the Project Site during a single construction phase would not be expected to exceed

43 daily trips in total. According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Project Site is accessible from Bryant Street and County Road M ½. Additionally, Pabst Avenue may be a roadway used in-route to access the Project Site. According to the City's General Plan Circulation Element, Pabst Avenue is designated as a Major Collector, consisting of residential and commercial uses. Additionally, the City has defined Bryant Street and County Road M ½ as Minor Collectors. Major Collectors are capable of accommodating high levels of vehicle traffic, as they provide circulation between activity centers and arterial streets. Minor Collectors feed traffic from local streets to Major Collector roadways.

The Institute of Transportation Engineers' (ITE) 10th Edition Trip Generation Manual (2017) has found that single-family homes generate an average of 9.44 trips daily. The homes surrounding the Project Area that contribute vehicle traffic to the local roadways include homes located on Stony Creek Drive, Stanton Way, James Drive, Bell Way, Bryant Street, and all other homes located east of Pabst Avenue. There are approximately 79 existing residences that are expected to contribute to the local roadway traffic, and according to the ITE Trip Generation Manual, existing conditions could be up to 746 traffic trips daily onto Bryant Street ($9.44 \times 79 = 746$). As Bryant Street and County Road M ½ receive less traffic than Pabst Avenue, it can be assumed that the Proposed Project's 43 daily trips during construction would not contribute to a significant increase in traffic trips. Furthermore, the Project construction would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible. Additionally, it is noted that construction is temporary, and these trips would cease upon completion of the Project.

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 sensitive receptors to the Project Site are several residences fronting Stanton Way and Stony Creek Drive, located directly adjacent to the Project's western boundary.

4.13.2.3 Operational Offsite Traffic Noise

Future traffic noise levels throughout the vicinity of the Proposed Project were modeled based on the traffic volumes identified by CalEEMod version 2022.1 using defaults for Glenn County. Operations of the Proposed Project will result in approximately 614 daily weekday trips and an average of 588 daily weekend trips. According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Project Site will be mainly accessible from Bryant Street and County Road M ½, which has mainly residential and some commercial uses along them. As previously mentioned, there are over 79 single-family homes accessible from Bryant Street, on the segment closest to the Project Site, east of Pabst Avenue. As previously described, according to the ITE 10th Edition Trip Generation Manual (2017), single-family homes generate an average of 9.44 trips daily, and therefore these 79 existing residences could be expected to contribute up to 746 traffic trips daily onto Bryant Street ($9.44 \times 79 = 746$). Additionally, the City of Orland General Plan

EIR Noise Section notes that the roadway segment of County Road M ½ closest to the Project Site receives approximately 963 average daily trips. The Proposed Project would expect to contribute the 614 daily trips across both Bryant Street and County Road M ½. Therefore, the Proposed Project's trips would not result in a doubling of traffic on either Bryant Street or County Road M ½, and therefore would not result in a significant increase in ambient traffic noise.

4.13.2.4 Operational Onsite Noise

The Project is proposing the construction of a residential subdivision consisting of 65 single-family lots. Therefore, the main onsite stationary noise sources related to long-term operation on the Project Site would be from the proposed residences. ECORP staff regularly conduct noise measurements within various land uses, at specific noise-generating events, and at individual pieces of noise-generating equipment in order to develop a wide sampling of potential noise levels. The main noise source generated from the residences on the Project Site would include mechanical equipment and other typical sources specific to residential neighborhoods such as barking dogs, internal traffic circulation, radios, and people talking.

The Project proposes to place residential uses adjacent to existing residential uses. The most basic planning strategy to minimize adverse impacts on new land uses due to noise is to avoid designating certain land uses at locations within the community that would negatively affect noise sensitive land uses. The Project is consistent with the types, intensity, and patterns of land use envisioned for the Project Area, and as previously described, the Project is considered compatible with the existing noise environment. The operation of the Project would not result in a significant noise-related impact associated with onsite sources.

4.13.2.5 Project Land Use Compatibility

The City's General Plan establishes the use of acceptable exterior and interior noise standards as seen in Table 4-1 and Table 4-2 of the Noise Impact Assessment (Appendix 4.13). The City's allowable noise level standards are applicable to new projects and act as a tool to gauge the compatibility of new land uses relative to existing noise levels. As shown in Table 4-1 of Appendix 4.13, the maximum exterior traffic and railroad noise level permitted at residences is 65 dBA Ldn. As shown in Table 4-2 of Appendix 4.13, the maximum exterior non-transportation noise level permitted at residences is 50 dBA Ldn. In the case that the noise levels identified at the Proposed Project Site fall within the levels presented in Tables 4-1 and 4-2 of Appendix 4.13, the Project is considered compatible with the existing noise environment. As previously stated, the Project is proposing a residential subdivision. In order to quantify existing ambient noise levels in the Project Area, ECORP conducted a 24-hour noise measurement from April 4, 2023, to April 5, 2023. This 24-hour noise measurement is generally representative of ambient noise levels experienced by the Site, as an average of day-night noise, with additional weighting added to noise during noise sensitive, nighttime hours. As shown in Table 4.4-1 of Appendix 4.13, the 24-hour noise level recorded was 45.8 dBA. As the long-term noise level on the Project Site falls below the noise standards, the Project Site is considered an appropriate noise environment to locate the proposed residential land use.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to potential future development would be primarily associated with short-term construction-related activities. Construction at 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 are summarized in Table 5-2 of the Noise Impact Assessment (Appendix 4.13).

The City of Orland does not regulate or have a numeric threshold associated with construction vibrations. 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 construction vibration, construction vibration was measured from the center of the Project Site (FTA 2018). The nearest structure of concern to the construction Site, with regard to groundborne vibrations, is a residence fronting Stanton Way, located 465 feet from the center of the Site.

Based on the representative vibration levels presented for various construction equipment types in Table 5-2 of Appendix 4.13 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential project construction vibration levels. The FTA provides the following equation:

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

Table 4.13-2 presents the expected Project related vibration levels at a distance of 465 feet.

Table 4.13-2 Construction Vibration Levels at 465 Feet							
Receiver PPV Levels (in/sec) ¹					Peak Vibration	Threshold	Exceed Threshold?
Large Bulldozer, Caisson Drilling, & Hoe Ram	Loaded Trucks	Jackhammer	Pile Driver	Vibratory Roller			
0.0011	0.0009	0.0004	0.0021	0.0026	0.0026	0.3	No

Notes: ¹Based on the Vibration Source Levels of Construction Equipment included on Table 4.13-2 (FTA 2018). Distance to the nearest structure of concern is approximately 465 feet measured from Project Site center.

As shown in Table 4.13-2, vibration as a result of onsite construction activities on the Project Site would not exceed 0.3 PPV at the nearest structure. Thus, onsite Project construction would not exceed the recommended threshold.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. The Project would not accommodate any heavy-duty trucks or equipment. Therefore, the Project would result in negligible groundborne vibration impacts during operations.

4.13.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

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 13.3 percent between 2010 and 2022 from 7,291 to 8,267. The DOF estimates that there were 2,978 total housing units in the City, the City had a 4.0 percent vacancy rate and the average number of persons per household was 2.89 as of January 1, 2022 (DOF 2022). Population and housing totals for 2023 have not been published by DOF at this time.

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Approval of the Project would allow for the development of 65 single family homes. Based on the 2022 DOF average household size for the City of 2.89 persons per household, the Project would increase City population by 187 persons. With the addition of 187 new residents, the Proposed Project could increase the population by 2.3 percent when compared to the 2022 estimated population for the City. However, the proposed uses identified for the Project are consistent with the 2008-2028 General Plan land use designations and therefore consistent with the City's planned population growth (City of Orland 2010a). Therefore, implementation of the Proposed Project would not directly contribute to a substantial unplanned increase in population within the City. 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) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Less than significant impact.

No housing is located on the Site. There was a single family home and outbuildings on the Site in the recent past. However, these buildings were removed. Therefore, the Project would have no impact in this area.

4.14.3 Mitigation Measures

No significant impacts were identified, and 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 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. Finally, 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 to the Project Site. 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 2023, the OVFD has 40 volunteers along with a full-time fire chief and full-time office assistant. There were 706 calls, 344 within the city limits and 42 mutual aid calls in 2020. (City of Orland 2023a). The City's Fire Station is located at 810 Fifth Street, approximately 1.25 mile southwest of the Project Site.

4.15.1.2 Police Services

The Orland Police Department (OPD) provides law enforcement services to the Project Site. The OPD has patrol service 24 hours a day. The Police Department also offer the following services: certified child seat installation, free bike helmets, Alice Training (Active Shooter Training), and Volunteers in Polices Services Program. s. Currently there are eight patrol officers (1 K-9 and 1 SRO), two sergeants and one Chief of Police (City of Orland 2023a). The City's police station is located at 817 Fourth Street, approximately 1.2 mile southwest 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 schools (grades 6-8), one high school (grades 9-12), and one continuation high school, one community day school. Additionally, K-12 students may elect to take coursework through an Independent Study Program, and North Valley High offers alternative classes and credit recovery for grades 9-12. The district also operates a Community School for students (OUSD 2023a). The District had 2,287 students in the 2022-2023 school year: 945 elementary school students, 518 middle school students, and 824 high school students (OUSD 2023b). According to the California Department of Education, (DOE), the City also has one private school, the Providence Christian School (DOE 2023).

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 2023c). Based on the DOF 2021 estimated City population of 8,267, the City's parkland to

population ratio is 5.72 acres of parks/1,000 population⁵. 2008-2028 General Plan Program 5.10.A.1 identifies a park dedication standard for the city of 8.4 acres per 1,000 residents.

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:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other Public Facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

4.15.2.1 Fire Protection

Development of the Proposed Project is likely to result in an increased demand for fire protection and emergency services. The Project Site is located approximately 1.25 miles from the City’s fire station. The

⁵ 47.35 acres of parks/(8,267/1,000) population = 5.72 acres of parks/1,000 population.

Project Site is currently served by the City for fire protection and the devolvment of the Proposed Project would not increase the response time required for the OVFD.

Development of the Project Site would result in a need for fire protection services to respond to any potential incidents that may occur at the Project Site. However, the Project Site is located adjacent to a developed part of the City and currently receives fire service. Because the need for fire facilities is based on response times and not population increases, the Proposed Project would not result in the need for new fire facilities, as services can adequately be provided by existing facilities. No new or physically altered fire facilities would be required for the Project. Therefore, this impact is less than significant.

4.15.2.2 Police Services

Development of the Project Site could potentially result in a need for police protection services to respond to any potential incidents that may occur at the Site. 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 Project Site is currently served by the Orland Police Department (OPD). The City's police station is located approximately 1.2 mile southwest of the Project Site. Development of the Project is anticipated to increase population in the city by 187 persons. Although this increase in population would be expected to generate a slight increase in the demand for law enforcement services, it is not anticipated to generate sufficient demand to require construction of new law enforcement facilities as services can adequately be provided by existing personnel operating out of existing facilities. Therefore, this impact is less than significant.

4.15.2.3 Schools

The Proposed Project would result in an increase in the existing student population. The Project would be served by the OUSD for kindergarten through 12th grade. Table 4.15-1 illustrates the estimated student population from the Proposed Project based on an existing city population and OUSD student population ratio. As shown, currently 11.43 percent of the city population are elementary students, 6.27 percent are middle school students, while 9.97 percent are high school students. Using these ratios and the Project's estimated population of 187, the Project would increase the OUSD's student population by 21 elementary students, 12 middle school students, and 19 high school students.

Table 4.15-1. Project Student Population			
	Persons/Students	Percent of Total Population	Project Students
Total City Population	8,267		
Project Population	187		
Elementary Students	945	11.43%	21
Middle School Students	518	6.27%	12
High School Students	824	9.97%	19

Government Code 65996 requires the Project applicant to pay impact fees to the school districts at the time of construction to offset increased student enrollment. As provided in the Government Code, payment of these fees constitutes adequate mitigation of impacts to the provision of school facilities. The applicant would be required to pay school impact fees to the OUSD. Future school facility developments would be subject to CEQA review on a project-by-project basis. Payment of the school impact fees, which would occur at the time building permits are issued, would ensure impacts associated with the addition of students to elementary, middle, and high schools would be less than significant.

4.15.2.4 Parks

2008-2028 General Plan Program 5.10.A.1 identifies a park dedication standard for the city of 8.4 acres per 1,000 residents. Development of the Project will increase the City by approximately 187 persons. At an 8.4 acres per 1,000 residents ratio, the Project would require 1.57 acres of parkland⁶. Orland Municipal Code Section 17.08.1160 identifies a park as a land use which is established for the purpose of providing passive or active recreation on a public or private basis. The Project includes a 7.32 acre area identified as a community area and storm water drainage basin. A storm drain basin currently exists within the 7.32 acre area. This area is also identified in Figure 5-1 of the General Plan Open Space, Conservation and Public Facilities Element as "East Anchor Park". Therefore, the Project would exceed the parkland requirements of the 2008-2028 General Plan and as such, the Project's impacts relating to parks would be less than significant.

4.15.2.5 Other Public Facilities

The City's many public facilities include the library, community center, and City Hall. The City requires the payment of Development Impact Fees for all new single family and multifamily units. These fees include a Community and Recreation Facility Fee, a Library Fee, and a City Hall Facilities Fee. The Development Impact Fee is imposed for residential, commercial, and industrial development, in order to defray the cost of constructing community facilities as new development occurs. Payment of this fee would offset the costs of other public facility demands associated with the Project and would go toward funding public facility projects. Therefore, the Proposed Project would not directly result in the construction or expansion of other public facilities and this impact would be less than significant.

4.15.3 Mitigation Measures

No significant impacts were identified, and 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

⁶ 8.4 acres / 1,000 persons X 187 persons = 1.57 acres.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The need for additional parkland is primarily based on an increase in population to an area. The Proposed Project is anticipated to add 187 new residents within the City limits. This addition would increase the use of parks and recreational facilities to some extent. Whether this use would result in a substantial physical deterioration of the facility occurring or being accelerated cannot be fully determined because the amount of park/recreational activity use from the Project’s residents would be purely speculative. However, in addition to the parkland space requirements established in the General Plan discussed previously, the Project would also be required to pay the Community and Recreation Facilities Development Impact Fee. Therefore, Project impacts relating to parks and recreational facilities would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Project includes approximately 7.32 acres, Lot A, identified as a passive community recreation area and storm drain basin within the Project Site. The Project applicant proposes to dedicate Lot A to the City. This lot currently has a stormwater detention basin which is used to collect stormwater from the residential neighborhood to the west of the Project Site. The Project would expand this basin to meet the stormwater detention needs of the existing neighborhood and the Project. No formal recreational facilities are proposed for the area as a part of the Project.

The potential environmental effects of the planning, construction, and operation of the Proposed Project, including the onsite recreation and open space area, are being evaluated as part of this IS. No additional environmental effects would occur beyond those that have already been identified as part of the Proposed Project, and no additional mitigation would be required as a result of the Project’s inclusion of

onsite recreation and open space. Therefore, Project impacts relating to the inclusion, construction, or expansion of recreational facilities would be less than significant.

4.16.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.17 Transportation

4.17.1 Environmental Setting

4.17.1.1 Existing Street and Highway System

The Project Site will be accessed via Bryant Steet, Stony Creek Drive, and Road M1/2. Bryant Steet, Stony Creek Drive and Road M1/2 are all identified as minor collector streets in the 2008-2028 General Plan. Collector streets are designed to accept traffic from surrounding local streets and deliver it to larger “through” streets (usually designated Arterial Streets). For this Project, Bryant Street is the primary access street with Road M1/2 likely being the most direct access to SR 32/Walker Street. Bryant Street is an east-west oriented minor collector street extending to the east out of the City Limits and to the west through the City to the CFNR railroad tracks. Stony Creek Drive is a partially developed east-west oriented roadway providing access to developments in the far northern portion of the City. Road M1/2 is a north-south oriented, partially improved collector street connecting Bryant Street to SR 32/Walker Street. Road M1/2 and Stony Creek Drive currently terminate at the Project Site. Development of the Project will assist in linking and/or extending both existing roadways. Regional access to the Site is provided by I-5 and SR 32, which link the Project Site with the other Northern California communities to the north and south.

4.17.1.2 Transit Service, Pedestrian and Bicycle Facilities

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 nine bus stops in Orland serviced by Glenn Ride, which conducts seven runs daily from 7:10 a.m. to 5:48 p.m. Monday thru Friday, with three runs on Saturday and Holiday (Glenn County 2023). The stop closest to the Proposed Project is on Walker Street (SR 32) and County Road M¹/₂, approximately 0.25 miles south of the Project Site.

City standards require sidewalks along all improved streets except in the industrial areas. The City has several projects underway to increase pedestrian facilities throughout the City including a multi-use path on the easterly-side of the City. 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 to move people throughout the community. The *Glenn County Active Transportation Plan* (Glenn County 2019), which includes the City of Orland, provides a number of areas in the City for future bike lanes. However, the area surrounding the Project Site does not currently include bike lanes or shared use paths.

4.17.2 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The 2008-2028 General Plan contains the following transportation policies and programs related to construction and operation of a residential development, which may result from the Proposed Project:

Policy 3.2.E: New development shall be required to mitigate traffic impacts associated with the project.

- *Program 3.2.E.1: Traffic studies of affected streets may be required as part of the environmental assessment of proposed projects to assure citywide traffic service levels are maintained.*
- *Program 3.2.E.2: Traffic studies shall include level-of-service forecasts to account for individual and cumulative major land use changes in the City. Level-of-service forecasts shall be used to identify deficient roadways and update street improvement plans and priorities.*

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.

While General Plan Policy 3.3A establishes traffic standards for level of service (LOS), as of July 1, 2020, LOS is no longer to be considered a significant impact under CEQA. Pursuant to CEQA Guidelines, Section 15064.3, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision 15064.3(b)(2) of the CEQA Guidelines, regarding roadway capacity, a project's effect on automobile delay cannot constitute a significant environmental impact. As such, mitigation for the improvement of LOS is not required. 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
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

CEQA Guidelines Section 15064.3, subdivision (b) provides criteria for analyzing transportation impacts based on a VMT methodology instead of the now superseded (as of January 1, 2019) Level of Service methodology. Pertinent to the Proposed Project are those criteria identified in Section 15064.3(b)(1) Land Use Projects. According to this section:

Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor⁷ should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

The City is currently in the process of adopting VMT thresholds for new development projects within the existing City boundaries. According to the VMT analysis completed for this process, the Project Site meets the requirements of the City of Orland Vehicle Miles Traveled Screening Thresholds (2023) for a project within the existing City boundaries (City of Orland 2023d). Therefore, the Project would not result in a VMT or be inconsistent with the City of Orland VMT requirements.

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant 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). All internal

⁷ *High-quality transit corridor* means an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. For the purposes of this Appendix, an *existing stop along a high-quality transit corridor* may include a planned and funded stop that is included in an adopted regional transportation improvement program.

roadways and connections to existing roadways would be required to meet existing City roadway design standards. 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's impact with regard to roadway design and users is less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Project Site will be accessed via Bryant Street, and Stony Creek Drive. All Project lots will have direct access to an existing or proposed street allowing for adequate emergency access. Additionally, The Project's Andrea Way will provide access to the undeveloped land between the Project Site and Stony Creek. Therefore, the Project would have a less than significant impact regarding emergency access.

4.17.3 Mitigation Measures

To be determined as a part of the EIR analysis.

4.18 Tribal Cultural Resources

A Cultural Resources Inventory Report was prepared by ECORP Consulting, Inc. (ECORP 2023b) 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.

ECORP requested a records search for the property at the Northeast Information Center (NEIC) of the CHRIS at California State University-Chico on March 22, 2023 (see Appendix 4.5). 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 March 30, 2023.

In addition to the official records and maps for archaeological sites and surveys in Glenn County, the following 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; 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 conducted a search for a local historical registry to identify properties and historical resources not listed in national or local databases (Appendix 4.5)

The analysis of cultural resources was based on a records and literature search conducted at the NEIC of the CHRIS at California State University-Sacramento on March 22, 2023, a literature review, historical maps and photographs review, and a field survey on April 5, 2023. The literature search included the results of previous surveys within a 0.5-mile radius of the Proposed Project location.

In addition to the record search, ECORP contacted the NAHC on March 22, 2023, to request a search of the Sacred Lands File for the APE. . 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

Ethnographically, the Project area is located in a region known to have been occupied by the Nomlaki, who 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 Indian 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 beds, bird-bone whistles, stone pipes, and other funerary gifts signifying wealth.

Village structures included headman houses, dance houses, and menstrual huts. Houses were built near water sources, with the Chief houses facing toward the stream. Men would plunge into the stream after participating in sweating ceremonials. Dance houses were a post-contact addition to the village structure and were placed away from the village. Menstrual huts were built at the opposite end of the village, away from the water supply.

The Nomlaki population prior to contact with Europeans is estimated to have been more than 2,000. A malaria epidemic swept through the Central and Upper Sacramento Valley from 1830-1833, 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 by livestock, the pollution of fishing areas by gold miners, and violent conflict with settlers. These factors further diminished the Nomlaki population and, by 1910, the Wintu population is estimated to have been 1,000.

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 August 27, 2021, to request a search of the Sacred Lands File for the APE. A search of the Sacred Lands File by the NAHC on October 11, 2021, 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 April 5, 2023, ECORP performed a field investigation of the Project Site and APE, which concluded that no cultural resources were observed onsite.

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 400 feet. Gravity flow from an 80,000-gallon elevated storage tank provides for the primary 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 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 gpd, while the high-density residential daily water demand per 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 the subbasin. The only limitation to groundwater extraction, and consequently the City's water supply, would be the pumping capacity of the City's wells and the availability of future groundwater. As discussed in Section 4.10, the estimated storage capacity of the groundwater subbasin to a depth of 200 feet is approximately 13,025,887 AF 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 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 the groundwater surface to ground surface for a well (State Well number: 22N03W22G002M) located approximately ½ mile to the west of the Project Site was 23 feet in October 2010 and 58 feet in October 2022. Another well (State Well number 22N03W24E003M), approximately one mile to the southeast of the Project Site, the groundwater surface to ground surface was 19 feet in October 2010 and 36 feet in October 2022 (DWR 2023b).

However, the depth to groundwater varies by location and rainfall. For example, in March of 2022, when the National Drought Mitigation Center (NDMC) indicated that 93.23 percent of the entire state of California was in *D2 – Severe Drought*-level conditions, the groundwater surface depth for well number 22N03W22G002M was approximately 35 feet below the surface (bgs). By March of 2023, only 8.49 percent of California was in *D2 – Severe Drought*-level conditions and the groundwater surface in well number 22N03W22G002M had risen to 22 bgs feet (NDMC 2023, DWR 2023b). Therefore, groundwater levels in 2023 are expected to be higher than 2022 levels.

4.19.1.2 Wastewater

Wastewater collection and treatment in the City is provided by the City of Orland. The City's sanitary sewer system includes over 30 miles of pipelines, 400 sanitary sewer manholes, and four lift stations. Each lift station currently serves an area of less than 20 acres. Pipe sizes range from 4 to 24 inches in diameter (City of Orland 2019). All sewage is collected and processed by the Orland Wastewater Treatment 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, during the last quarter of 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 the past year. The treatment plant capacity is 2.1 mgd leaving a remaining capacity of 1.45 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. There is an existing stormwater drainage basin located on the Project Site. This basin receives stormwater from the residential uses west of the Project Site from two inlet pipelines as well as natural drainage from the Site.

Approximately 80 percent of the City's area is served by, and 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.

As shown in Table 4.19-1, in 2019 (the most recent year with available data) the majority of GCWMRA's solid waste was disposed of at the Anderson Landfill. According to the figures published by the CalRecycle (2023a), in 2019, the Anderson Landfill received approximately 68.6 percent of GCWMRA's solid waste, or 19,999 tons (CalRecycle 2023a). Also as noted in Table 4.19-1, prior to 2019, the Glenn County Landfill was the main disposal site for GCWMRA. However, this facility is now closed.

Table 4.19-1. Solid Waste Disposal Facilities Used by the Glenn County Waste Management Regional Agency						
Destination Facility	Solid Waste Disposal (tons/year)			Landfill Information		
	2017	2018	2019¹	Remaining Capacity (cubic yards)	Remaining Capacity Date	Cease Operation Date
Anderson Landfill, Inc	1	36	55,942	10,409,132	1/1/2015	1/1/2093
Clean Harbors Buttonwillow LLC	-	15	-	10,500 max throughput	Co-disposal facility	1/1/2040
Foothill Sanitary Landfill	2	-	-	125,000,000	6/10/2010	12/31/2082
Forward Landfill, Inc.	103	22	5	24,720,669	1/31/2020	1/1/2036
Glenn County Landfill	19,759	22,763	20,608	866,521	2/28/2015	Closed
Neal Road Recycling and Waste Facility	22	7	11	20,847,970	7/1/2009	1/1/2048
Potrero Hills Landfill	83	5	12	13,872,000	1/1/2006	2/14/2048
Recology Hay Road	20	28	372	30,433,000	7/28/2010	1/1/2077
Recology Ostrom Road LF Inc.	-	27	4,623	39,223,000	6/1/2007	12/31/2066
West Central Landfill	-	4	1	6,589,044	12/1/2013	3/1/2032
Yolo County Central Landfill	4	-	-	33,800,218	6/1/2021	2/21/2124
Yearly Total	19,999	22,908	81,574 ¹			

Source: CalRecycle 2023a and 2023b,

Note: 1) Yearly totals provided in CalRecycle's Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility report appear to be in error as the Jurisdiction Diversion/Disposal Rate Detail for GCWMRA indicates that the total disposal amount is 27,619.42 tons. This number would be more consistent with past reporting.

Table 4.19-2 shows GCWMRA's average daily solid waste disposal by resident and employee from 2016 to 2020. As shown, the amount of solid waste disposal per resident and employee has fluctuated somewhat between 2016 and 2020.

Table 4.19-2. Solid Waste Disposal Per Resident and Employee – Glenn County Waste Management Regional Agency (pounds/day)					
Category	2016	2017	2018	2019	2020
Average per Resident	4.2	3.8	4.3	5.2	5.8
Average per Employee	13.4	12.3	13.9	16.3	18.0

Source: CalRecycle 2023c

4.19.1.5 Electricity/Natural Gas Services

Electricity

Electric service in this portion of the City is provided by PG&E. PG&E's power is generated in fossil-fueled plants, hydroelectric powerhouses, geothermal generators, a nuclear power plant, and ten combustion turbines. PG&E also buys power from independent power producers and other utilities. PG&E provides service to approximately 5.1 million customers in Northern and Central California and has approximately 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines (PG&E 2023).

PG&E's services are provided in accordance with California Public Utilities Commission rules and regulations. Electric connections would be provided to the Site from the existing transmission network in the Project vicinity. The Project applicant would be responsible for the costs associated with extension of electrical service infrastructure to the Project Site.

Natural Gas

PG&E supplies natural gas to homes and businesses in the Project Area. PG&E has 42,141 miles of distribution pipelines supplying 4.5 million natural gas customers. Extension of the natural gas infrastructure by PG&E is financed through the collection of developer fees and through consumer payment for service (PG&E 2023).

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

4.19.2.1 Water

Development of the Project would increase the demand for water in the City due to human consumption and irrigation required for landscaping. The City provides water use estimates based on HUE, the amount of water a single-family home would use on a monthly basis. The average daily water demand per HUE is 571 gallons (City of Orland 2015). Using this factor, the Proposed Project has the potential to result in a single family water demand of 31,115 gpd or 13.5 million gallons per year. The Project’s annual water demand represents 0.00032 percent⁸ of the available groundwater in the Colusa Groundwater Subbasin. Therefore, the Project would have a less than significant impact on groundwater supply.

Based on the City’s existing groundwater pumping ability and the fact that currently there is not a regulated limit on the amount of groundwater that can be extracted for the Colusa Groundwater Subbasin, the future commercial water demand of 31,115 gpd would not result in the need for additional City’s water treatment or conveyance facilities. As such, the future residential uses would have a less than significant impact to the City’s water treatment or conveyance facilities.

4.19.2.2 Wastewater

Wastewater generated at the Site would be collected by the City and conveyed to 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.

According to the City of Orland Sanitary Sewer System Management Plan current sewer lines have enough capacity for the next twenty years and the wastewater ponds are at approximately 34 Percent of their

⁸ 13.5 million gallons of Project annual water demand/4.24 trillion gallons of water in the Colusa Groundwater Subbasin = 0.00032 percent.

designed capacity. At this time the Master Plan does not make any recommendations for increasing the capacity of the sewer lines or treatment ponds (City of Orland 2019).

Wastewater generated by the Project would be conveyed to the City's Wastewater Facility for processing via an existing 6-inch sewer line collection facilities located in Stony Creek Drive and/or an 8-inch sewer line located in County Road M½ near the Project Site (City of Orland 2009). According to the City's Public Works Department, the average single-family home produces approximately 431 gpd of wastewater (City of Orland 2015). Based on this information, the future residential uses of the Proposed Project would account for 28,015 gpd of wastewater.⁹ This increased demand would represent 2.0 percent of the 1.45 mgd remaining plant capacity. Since there is adequate capacity remaining at the Wastewater Facility to serve future residential uses at the Project Site, the Proposed Project would not result in the need for new or expanded facilities.

4.19.2.3 Storm Drainage

The Project Site improvements include the construction of curbs, gutters and sidewalks along all Project internal streets and Bryant Street adjacent to the Project Site. An existing stormwater drainage basin is located on the Project Site. The Project Site would be designed to direct stormwater flows the Project's street drainage system which then flows into the existing basin. This stormwater drainage basin would be sized to accommodate all stormwater runoff from the Site as well as the are for which it currently serves. See Figure 6 (Page 3 of Site plan). As such, the Proposed Project would not result in the need for new or expanded stormwater facilities. This impact would be considered less than significant.

4.19.2.4 Electric Power

Electricity is provided to the Project Site by PG&E. The electricity provider's ability to provide its services concurrently for each project is evaluated during the development review process. The utility company is bound by contract to update its systems to meet any additional demand. During operation of Project-induced residential development, the ability of the electricity provider to power the Site would be evaluated. Utility connections will be in accordance with state, local, and PG&E standards and would not result in the need for the construction or expansion of utility facilities. Therefore, impacts would be less than significant.

4.19.2.5 Natural Gas

PG&E is the service provider of natural gas for the City and Project Site. Utility connections will be in accordance with state, local, and PG&E standards and would not result in the need for the construction or expansion of utility facilities. Therefore, impacts would be less than significant.

⁹ Wastewater demand: 65 dwelling units X 431 gpd of wastewater = 28,015 gpd of wastewater

4.19.2.6 Telecommunications

Telecommunication will be through existing company and personal cell phones. No new telecommunication facilities will be required to serve the Project.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Refer to Item a) above.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

Refer to Item a) above.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

According to CalRecycle (2023a), the estimated solid waste generation rates for residents is 5.8 pounds per resident per day. Based on this information and an anticipated 187 additional residents to the area at full operation of the Project (see Section 4.14), the Project would produce approximately 1,084.6 pounds per day, or 197.9 tons per year.

The Proposed Project’s annual solid waste represents a 0.86 percent increase¹⁰ in solid waste from the City. Based on information provided in Table 4.19-1, the City disposes approximately 68.6 percent of their solid waste at the Anderson Landfill. According to the Environmental Protection Agency Volume-to-Weight Conversion Factors, compacted municipal solid waste at a large landfill facility, with best management and cover practices, has an estimated 1 ton per cubic yard conversion factor. Therefore, the Proposed Project’s annual waste of 197.9 tons would convert to roughly 198 cubic yards of municipal solid waste, which represents approximately 0.002 percent of the total remaining Anderson Landfill capacity. As such, the Project impacts associated with solid waste generation would be less than significant.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less than significant impact.

The Proposed Project is required to comply with all local, state, and federal statutes regarding solid waste, including Chapter 10.12, Waste Collection and Reduction, of the Municipal Code. No operations-generated acutely toxic or otherwise hazardous materials are expected to be generated by the proposed residential Project. This impact is considered less than significant.

4.19.3 Mitigation Measures

No significant impacts were identified and 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 (e.g., 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 Site is relatively flat and dominated by vacant undeveloped land. As discussed in Section 4.16, the area is not designated as a Very High Fire Hazard Severity Zone (VHFHSZ [CAL FIRE 2023]).

¹⁰ Based on total solid waste production in 2018 as shown in Table 4.19-1.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Project Site is not in an area designated by CAL FIRE as a VHFHSZ. Furthermore, no VHFHSZs are located nearby. Also, the Project Site is not located in a state responsibility area (SRA) (CAL FIRE 2023). 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Project Site is not in an area designated by CAL FIRE as a VHFHSZ. Furthermore, no VHFHSZs are located nearby. Also, the Project Site is not located in a state responsibility area (SRA) (CAL FIRE 2023). 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
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Project Site is not in an area designated by CAL FIRE as a VHFHSZ. Furthermore, no VHFHSZs are located nearby. Also, the Project Site is not located in a state responsibility area (SRA) (CAL FIRE 2023). 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
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No impact.

The Project Site is not in an area designated by CAL FIRE as a VHFHSZ. Furthermore, no VHFHSZs are located nearby. Also, the Project Site is not located in a state responsibility area (SRA) (CAL FIRE 2023). The Project would have no impact in this area.

4.20.3 Mitigation Measures

No significant impacts were identified, and 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than Significant with Mitigation Incorporated.

As discussed in Section 4.4 Biological Resources, Section 4.5 Cultural Resources, and 4.18 Tribal Cultural Resources, the Proposed Project may have potential impacts to these resources. However, implementation of mitigation measures provided in this Initial Study would reduce those impact 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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than Significant with Mitigation Incorporated.

Implementation of the Proposed Project, in conjunction with other approved or pending projects in the region, may have the potential to result in cumulatively considerable impacts to the physical environment. However, these potential impacts would be reduced to a level that is considered less than significant with implementation of City of Orland General Plan Policies and Programs, compliance with local, state, and federal rules and regulations, and implementation of BMPs where applicable and as proposed in the relevant subsections of this IS/MND.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less than Significant with Mitigation Incorporated.

The Project would not result in direct and indirect impacts to human beings as all potential impacts were determined to have no impact or a less than significant impact.

5.0 LIST OF PREPARERS

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