DRAFT

Initial Study and Mitigated Negative Declaration

for the CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation Project

Lead Agency:

California Department of Forestry and Fire Protection
1416 9th Street
Sacramento, CA 95814

March 2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation

Shasta County, California

Lead Agency:

California Department of Forestry and Fire Protection
1416 9th Street
Sacramento, CA 95814

Prepared By:

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March 2024

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DRAFT MITIGATED NEGATIVE DECLARATION

Lead Agency: California Department of Forestry and Fire Protection (CAL FIRE)

Project Proponent: California Department of General Services

Project Location: The Project site is located on the eastern side of Venture Parkway in the northern portion of Lot 11 (Lot 11A) within the Stillwater Business Park in the City of Redding. The site is designated Assessor's Parcel Number (APN) 054-220-032 in Shasta County.

Project Description: The Project proposes the relocation of the existing CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters to a new co-located facility. The Project would allow CAL FIRE to operate in a safe and efficient manner, efficiently dispatch resources and services, enhance response times, and comply with the Governor's Executive Order B-18-12.

Public Review Period: **March 15, 2024** to **April 15, 2024**

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

BIO-1: Focused Special-Status Plant Surveys

- Perform focused special-status plant surveys of the Project site according to CDFW, CNPS, and USFWS protocols (ECORP 2023b). 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 if special-status plant species are found within the Project site and avoidance of the species is not possible.

BIO-2: **Northwestern Pond Turtle Preconstruction Survey.** The Project site does not support aquatic habitat for northwestern pond turtles. However, there is potentially suitable aquatic habitat in close proximity, and the annual grassland onsite represents potentially suitable upland nesting and dispersal habitat. The following measures are recommended to avoid or minimize potential impacts to northwestern pond turtles.

- Perform preconstruction surveys for northwestern pond turtles within the limits of construction to detect adults, within 48 hours prior to the start of construction. Relocate to suitable habitat in consultation with CDFW if individuals are found.
- No further measures pertaining to this species are necessary if no northwestern pond turtles are found.

BIO-3: **Western Spadefoot Preconstruction Survey.** The Project site does not support ephemeral wetland features that western spadefoot require for breeding. However, the Project site is in close proximity to known western spadefoot occurrences, and the annual grassland onsite represents potentially suitable upland aestivation and dispersal habitat. The following measures are recommended to avoid or minimize potential impacts to western spadefoot.

- Perform preconstruction surveys for western spadefoot within the limits of construction to detect adults, within 14 days prior to the start of construction. Relocate to suitable habitat, in consultation with CDFW if adults are found,
- No further measures pertaining to this species are necessary if no western spadefoot are found.

BIO-4: **Special-Status Bird and Migratory Bird Treaty Act Protected Birds (Including Raptors) Preconstruction Surveys.** Suitable nesting and/or wintering and foraging habitat for several special-status birds is present within the Project site. These include golden eagle, ferruginous hawk, grasshopper sparrow, and tricolored blackbird. If present, the Project could result in harassment to nesting individuals or temporary disruption of 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, the following measures are recommended to avoid or minimize potential impacts to protected birds, their eggs, and nests:

- Conduct a preconstruction nesting bird survey of all suitable habitats within and surrounding the Project site within 14 days prior to the commencement of construction during the nesting season (February 1 through August 31).
- The preconstruction nesting bird survey shall be conducted in all accessible areas within 0.25 mile of the Project site for raptors and within 100 feet for other special-status birds and birds protected under the MBTA.
- 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.

Cultural Resources

CUL-1: **Inadvertent Discovery.** The following mitigation measures are intended to address the evaluation and treatment of inadvertent/unanticipated discoveries of potential tribal cultural resources (TCRs), archaeological, or cultural resources during the project's ground disturbing activities.

- If any subsurface deposits are encountered during ground disturbing activities that are believed to be cultural or human in origin, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, 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:
  1. If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
  2. If the professional archaeologist determines 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 by CEQA or a historic property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the resource 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.
  3. If the find is pre-contact in nature, then a Tribal Representative from a Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified. In this case, mitigation measure TCR-1 shall be followed.

CUL-2: **Human Remains.** In the event of discovery of human remains, whether intact, fragmentary, or displaced from their original context, the Shasta County Coroner and the Native American Heritage Commission (NAHC), West Sacramento (916-373-3710), shall be notified of the discovery immediately, and all work in the vicinity of the find shall cease, as determined by the CAL FIRE archaeologist, and there shall be no further excavation or disturbance of the find site or any nearby area reasonably suspected to overlie adjacent remains until the

coroner of that county in which the remains are discovered has determined whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC. Public Resources Code Section §5097.98 specify the procedures to be followed in the event of discovery of human remains on non-federal land. The disposition of Native American burials is within the jurisdiction of the NAHC. Upon request, the NAHC will provide the project director with a list of most likely descendants, who will specify treatment and disposition of any Native American remains found within the area of potential effect of the project. Final disposition of the human remains is subject to the approval of the landowner. Human remains and associated grave goods are protected under Public Resources Code § 5097.94 and Health and Safety Code § 7050.5.

Geology and Soils

GEO-1: **Unanticipated Discovery of Paleontological Resources.** If paleontological resources are discovered during construction, all work must halt within a 100-foot radius of the discovery and a qualified paleontologist shall be retained to evaluate the find. The paleontologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The lead agency will be notified if there is a significant discovery. The qualified paleontologist will evaluate the significance of the find and recommend appropriate measures for the disposition of the find (e.g., fossil recovery, curation, data recovery, and/or monitoring). Construction activities may continue on other parts of the construction site while evaluation and treatment of the paleontological resource takes place.

Tribal Cultural Resources

TCR-1: **Unanticipated Discovery of Tribal Cultural Resources.** If potentially significant TCRs are discovered during ground disturbing activities, all work shall cease within 100 feet of the find. A Native American Representative from traditionally and culturally affiliated Native American Tribes that requested consultation on the Project shall be immediately contacted and invited to assess the significance of the find, make recommendations for further evaluation and treatment, and may be requested to provide worker training to recognize sensitive cultural resources, as necessary. If deemed necessary by CAL FIRE, a qualified cultural resources specialist, who meets the Secretary of Interior's Standards and Qualifications for Archaeology, may also assess the significance of the find in joint consultation with Native American representatives to ensure that Tribal values are considered. Work at the discovery location cannot resume until CAL FIRE, in consultation, as appropriate, and in good faith determines that the discovery is either not a TCR, or has been subjected to culturally appropriate treatment, if avoidance and preservation cannot be accommodated.

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ECORP Consulting, Inc., July 2023.

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ECORP Consulting, Inc. August 2023.

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CGI Technical Services, Inc. March 29, 2023.

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ECORP Consulting, Inc. June 14, 2023.

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GEOCON Consultants, Inc. 2019.

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ECORP Consulting, Inc. July 2023.

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
AAB	Air Attack Base
AB	Assembly Bill
AC	alternating current
ADA	Americans with Disabilities Act
APN	Assessor's Parcel Number
ARD	Aquatic Resources Delineation
BA	Biological Assessment
BAMM	Best Available Mitigation Measures
BCC	Bird of Conservation Concern
BLM	Bureau of Land Management
BMPs	Best Management Practices
BO	Biological Opinion
BP	Before Present
BRA	Biological Resources Assessment

Term	Definition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
CalGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historic Resources Information Center
CIWM Act	California Integrated Waste Management Act
CNEL	Community Noise Equivalent Level
CNDDB	California Natural Diversity Database
CNR	CAL FIRE Northern Region
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CO Plan	Federal Attainment Plan for Carbon Monoxide
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DC	direct current
DGS	Department of General Services
DHS	Department of Health Services
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
ECC	Emergency Command Center
EIR	Environmental Impact Report

Term	Definition
EIS	Environmental Impact Statement
EMFAC	EMission FACtor
EO	Executive Order
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FER	Fault Evaluation Report
FHSZ	High Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GLO	General Land Office
HCP	Habitat Conservation Plan
HQ	Headquarters
HVAC	Heating, Ventilation, and Air Conditioning
ICS	Incident Command System
IPCC	Intergovernmental Panel on Climate Change
IEPR	Integrated Energy Policy Report
IS/MND	Initial Study/Mitigated Negative Declaration
JAC	Joint Apprentice Committee
kv	kilovolts
kWh	kilowatt hours
L_{dn}	Day-Night Average
L_{eq}	Equivalent Noise Level
LID	Low-Impact Design
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MCC	Motor Control Center
MLRA	Major Land Resource Area
MND	Mitigated Negative Declaration
MRF	Material Recovery Facility
MRZ	Mineral Resource Zone
Mw	moment magnitude
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	Negative Declaration
NEIC	Northeast Information Center
NFDRS	National Fire Danger Rating System
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health

Term	Definition
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NO_x	nitrogen oxides
NOPS	Northern Region Operations
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRTP	Northern Region Training Plan
NSVAB	Northern Sacramento Valley Air Basin
OCC	Operational Command Center
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSFM	Office of the State Fire Marshal
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric Company
PI	plasticity index
$PM_{2.5}$	Particulate matter with a diameter of 2.5 microns or less
PM_{10}	Particulate matter with a diameter of 10 microns or less
PPV	peak particle velocity
PRC	Public Resources Code
PV	photovoltaic
Reclamation	Bureau of Reclamation
REU	Redding Electric Utility
RMS	root mean square
ROG	Reactive Organic Gases
ROW	Right-of-way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDMs	Site Design Measures
SHU	Shasta-Trinity Unit
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act of 1975
SMM	Standard Mitigation Measures
SR	State Route
SRA	State Responsibility Area
SSC	Species of Special Concern
STC	Sound Transmission Class

Term	Definition
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCRs	Tribal Cultural Resources
THPO	Tribal Historic Preservation Officer
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMP	Vegetation Management Program
VMT	Vehicle Miles Traveled
VOCs	volatile organic compounds
WBWG	Western Bat Working Group
WPP	Watershed Protection Program

1.0 BACKGROUND

1.1 Summary

Project Title:	California Department of Forestry and Fire Protection (CAL FIRE) Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation
Lead Agency Name and Address:	California Department of Forestry and Fire Protection 1416 9th Street Sacramento, CA 95814
Contact Person and Phone Number:	Ms. Terry Ash, Senior Environmental Planner California Department of General Services 707 3rd Street, 4th Floor West Sacramento, California 95605 (916) 201-0085 terry.ash@dgs.ca.gov
Project Location:	The Project site is located on the eastern side of Venture Parkway in the northern portion of Lot 11 (Lot 11A) within the Stillwater Business Park in the City of Redding. The site is designated APN 054-220-032 in Shasta County.
General Plan Designation:	General Industry – Planned Development
Zoning:	Heavy Industrial

1.2 Introduction

The California Department of Forestry and Fire Protection (CAL FIRE) is the Lead Agency for this California Environmental Quality Act (CEQA) Initial Study. This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation (Proposed Project) to satisfy CEQA (Public Resources Code [PRC], Section 21000 et seq.) and state CEQA Guidelines (Title 14, California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences before approving those projects. CAL FIRE will use this CEQA Initial Study to determine which CEQA document is appropriate for the Project: Negative Declaration (ND), Mitigated Negative Declaration (MND), or Environmental Impact Report (EIR).

In accordance with CEQA, this Initial Study/Mitigated Negative Declaration (IS/MND) will be circulated for a 30-day public review and comment period. Written comments on the Draft IS/MND should be submitted to:

Ms. Terry Ash, DGS Senior Environmental Planner
cc: Amberly Morgan
2525 Warren Drive
Rocklin, CA 95677
amorgan@ecorpconsulting.com

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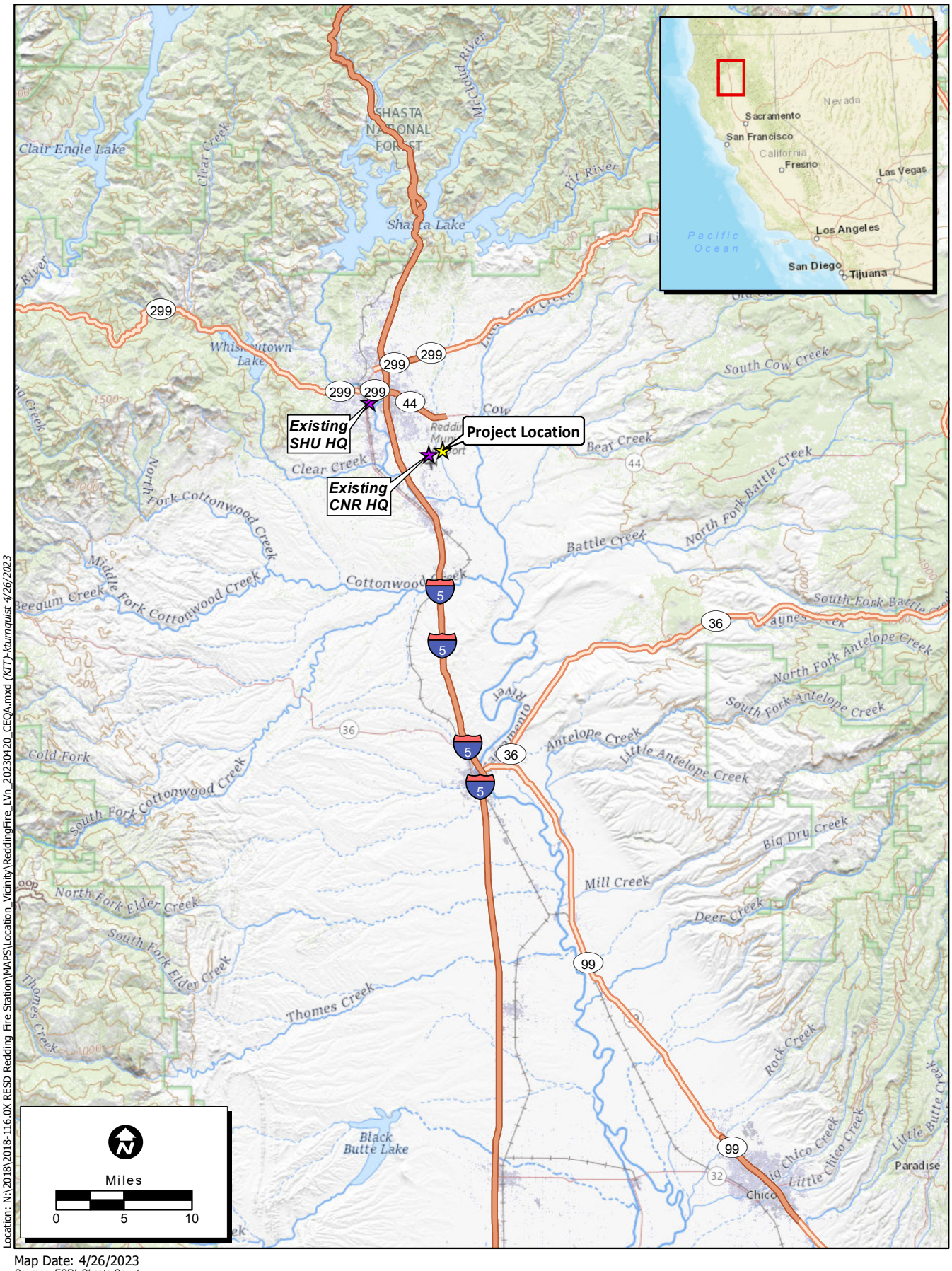
2.0 PROJECT DESCRIPTION

2.1 Project Background and Objectives

CAL FIRE proposes to relocate the existing Shasta-Trinity Unit (SHU or Unit) Headquarters (HQ) at 875 Cypress Avenue, Redding, to a new facility to be constructed in the Stillwater Business Park. The Project also proposes to relocate several Northern Region Operations - Redding (NOPS) facilities and programs, including the existing CAL FIRE Northern Region (CNR) HQ - Redding facility located at 6105 Airport Road, to a new co-located SHU and CNR Headquarters. The Project site is 37.46 acres and includes the entire 34.96-acre parcel on the eastern side of Venture Parkway in the City of Redding (Figures 2-1 and 2-2). The Project site extends beyond the western parcel boundary to include Venture Parkway because Project utilities, including water and wastewater, will connect to the existing mains located within the road. The parcel comprises the northern portion of Lot 11 (Lot 11A) within the business park and is designated APN 054-220-032 in Shasta County. The new co-located headquarters will have operational functions similar to the existing facilities and will continue to provide 24/7 emergency response. The Proposed Project includes approximately 22 acres to be fully developed and 13 acres planned for future expansion.

The SHU is located at the northern end of the Sacramento Valley. It encompasses most of Shasta County and portions of eastern Trinity County. Federal lands are administered by the Shasta-Trinity National Forest, Lassen National Forest, Bureau of Land Management (BLM), Bureau of Indian Affairs, Bureau of Reclamation (Reclamation) and National Park Service (NPS), all of which are contained within the SHU. The SHU includes portions of the Great Valley, the Southern Cascade, the North Coast Ranges, and the Modoc Plateau. The eastern slopes of Shasta County gently rise across the toe of the Southern Cascade Range toward the Modoc Plateau. To the west and north, the valley abruptly rises to the Klamath Mountains. Southern Trinity County and the southwest corner of Shasta County are partially located in the North Coast Range. There are three incorporated cities that lie within the boundaries of the SHU: Anderson, Redding, and Shasta Lake.

The mountains to the north, west and east, the Sacramento Valley to the south, and the Pacific Ocean 150 miles to the west produce unique weather and make weather forecasting difficult. The CAL FIRE State Responsibility Area (SRA) within the SHU is divided into five distinct National Fire Danger Rating System (NFDRS) areas based on climate, topography, and fuels, and is modified to match existing Wildland Fire Response Area boundaries. These NFDRS areas reflect historical average burning conditions and have been used for fire dispatch and planning within the Unit since 1994. Portions of the United States Forest Service (USFS) Direct Protection Area, mostly in the Interior Timber Planning Belt, are also within the SHU but are not included within NFDRS areas.



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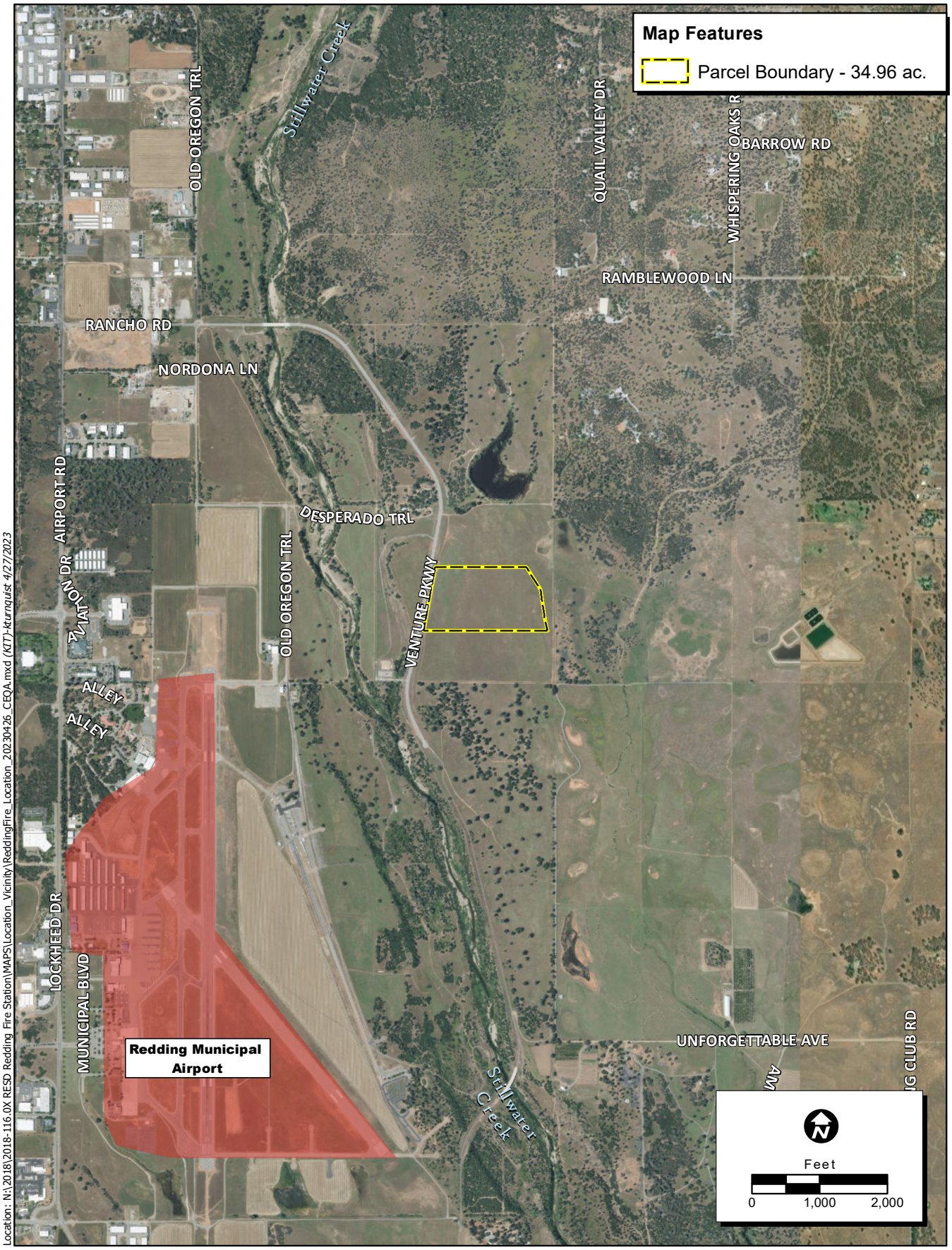
Map Date: 4/26/2023

Sources: ESRI, Shasta County

Figure 2-1. Project Location

2018-116.041 CAL FIRE SHU HQ and CNR HQ Relocation



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Map Date: 4/27/2023

Sources: ESRI, Shasta County, NAIP (2018)

Figure 2-2. Project Vicinity

2018-116.041 CAL FIRE SHU HQ and CNR HQ Relocation

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ENVIRONMENTAL CONSULTANTS

This Proposed Project would allow CAL FIRE to operate the new SHU HQ in a safe and efficient manner. A modern HQ facility, one that includes the Northern Region's combined functions, would improve CAL FIRE's ability to efficiently dispatch resources and service and maintain the Unit's automotive fleet more effectively. The Proposed Project would enhance the Unit's response to an evolving and complex mission of fire protection. In addition, by combining SHU and Northern Region functions, the State could realize cost savings regarding future maintenance and operational expenses (explained further below). The Proposed Project would also improve compliance with the Governor's Executive Order B-18-12 with a co-located facility.

An EIR/Environmental Impact Statement was prepared for the entire Stillwater Business Park in 2006 (SCH #2001032106). Given the age of the previous environmental documentation, the Department of General Services (DGS) Real Estate Services Division has determined that an IS supported by updated technical studies is the appropriate level of CEQA documentation for the Proposed Project.

2.1.1 Shasta-Trinity Unit Headquarters

The SHU HQ is currently located on 3.88 acres of state-owned property in the City of Redding. Through a cooperative agreement with Shasta County, the SHU HQ facility also serves as the Shasta County Fire Department HQ. The SHU HQ is located at a major crossroad in Northern California at the junction of Interstate 5 and State Highways 299 and 44, bisecting Shasta County. The SHU has far-reaching influences beyond that of the average CAL FIRE unit, as works closely with federal, state, and local government agencies and interfaces with two national forests (Shasta-Trinity and Lassen), two national parks (Lassen Volcanic and Whiskeytown National Recreation Area), California State Parks Northern Buttes District, the BLM, Reclamation - Shasta Dam, and numerous local government fire departments and districts. The SHU HQ is a key participant in the Regional Shasta Cascade Hazardous Materials Response Team for seven northern counties in California and serves as a signatory to a multi-agency agreement to provide personnel for the team.

Over the past 20+ years, the SHU has deployed Incident Management Teams to many fire incidents, including, but not limited to: 1999 Jones Fire (26,202 acres; 954 structures), Shasta Command Fire (21,750 acres), Canyon Fire (2,580 acres; 230 structures), Oregon Fire (1,680 acres; 33 structures), 2004 Bear Fire (10,848 acres; 86 structures), 2004 French Fire (13,005 acres; 30 structures), 2006 Junction Fire (3,126 acres; 1 structure), 2008 SHU Lightning Complex (86,500 acres; 22 structures), 2009 SHU Lightning Complex (14,804 acres; 40 separate fires), 2012 Dale Fire (1,200 acres), 2013 Power Fire (248 acres timber; 4 residential), 2013 Clover Fire (8,073 acres; 68 residential, 128 out buildings), 2014 Bully Fire (12,661 acres; 20 residential), 2014 Bald Fire (39,736 acres), 2014 Elier Fire (32,000 acres; 8 residential and 2 commercial), Oregon Fire (580 acres), 2014 Gulch Fire (1,375 acres; 4 residential), and 2015 River Complex Fire.

2.1.1.1 Existing Facility

The existing facility was built around 1940 and consists of an administrative office building, joint-agency CAL FIRE/USFS Emergency Command Center (ECC), mobile equipment maintenance and repair shop, service center warehouse, SHU HQ training office, and Office of Emergency Services (OES) telecommunications repair shop. Over 50 personnel are assigned to the various SHU HQ functions.

The administrative office building houses the SHU HQ's Training Office, Fire Prevention Bureau and State Fire Marshal, Resource Management, Vegetation Management, field Battalion Chiefs, and administrative and clerical personnel. The administration building provides office space for three field Battalion Chiefs to conduct their administrative duties and program responsibilities, including emergency medical services coordination, safety, equipment coordination and testing, scheduling, and grant administration.

The Training Office provides year-round mandated training for 159 seasonal and 149 permanent fire personnel, 12 resource management personnel, 260 inmate firefighters, and 300 volunteer firefighters. Maintaining highly trained personnel is a critical function to CAL FIRE's mission.

The Fire Prevention Bureau and State Fire Marshal, staffed by seven personnel on a year-round basis, is the key element in the fire planning, investigation, litigation, and law enforcement efforts within the SHU. These peace officers require secure evidence storage space, a law library, firearms and ammunition storage, and specialized equipment lockers for sensitive law enforcement equipment, and materials storage space for volunteers assigned under the Volunteers-In-Prevention program.

The Service Center provides the necessary daily support and supplies for all SHU HQ programs and personnel. During periods of emergency activity, the service center operates on a 24-hour basis, storing emergency supplies required for the SHU HQ's all-risk mission. Heavy truck and forklift access are essential for daily operations.

Various Resource Management programs, including Forest Practice Enforcement and the LaTour Demonstration State Forest, provide continuous contact with private companies and the public. These programs require public meetings which facilitate review and access to state environmental documents such as Timber Harvesting Plans and EIRs in compliance with CEQA. The Vegetation Management Program provides landowner assistance with fuel reduction projects. The program manager coordinates fuel reduction projects with Fire Safe Counsels, communities, and public agencies throughout the SHU.

2.1.1.2 Emergency Command Center

The ECC is a dispatch center coordinating over 13,000 emergency incidents and providing emergency 911 back-up for all of Shasta County and Eastern Trinity County. CAL FIRE estimates that the number of emergency incidents the ECC coordinates has doubled between 2010-2020. The ECC also provides emergency dispatch and communications services to the Shasta County Fire Department's 19 fire companies and nine Shasta County special/fire districts. Six computer consoles are set-up exclusively for expanded emergency operations, which is required to accommodate management of major emergency operations that extend beyond normal initial attack capabilities. During major fire sieges, there can be up to 16 individuals assigned to the joint CAL FIRE/USFS expanded ECC operations center.

2.1.1.3 Additional Facilities

The mobile equipment maintenance and repair shop provides fleet management for 25 fire engines, 50 light utility vehicles, a 35-foot Mobile Command Unit, a 35-foot Mobile Kitchen Unit and support trailer, 3 heavy transports, 3 dozers, 14 17-person Emergency Crew Transport vehicles, and 34 miscellaneous support vehicles.

There is an OES telecommunications repair shop that provides for the installation, maintenance, and repair of communication systems for all California state agencies (e.g., CAL FIRE, California Highway Patrol [CHP], California Department of Transportation [Caltrans]). The facility provides office and bench workspace for four telecommunications technicians, mobile equipment repair bays, a radio equipment vault, and a microwave communication tower. OES will continue to use the existing repair shop and communication tower after the SHU HQ relocates to the Project site.

2.1.1.4 Need for Relocation

The existing facility is located in downtown Redding. When the facility was constructed, it was located on the fringes of Redding city limits. However, Redding has grown substantially and is currently the largest city north of Sacramento. The city limits extend several miles in each direction from the facility, placing it near the center of the city. This requires personnel to negotiate fire apparatus through narrow and congested city streets to conduct daily and emergency activities, extending response time and increasing the potential for vehicle accidents.

The City of Redding owns all parcels surrounding the existing facility. In 2015, the City of Redding completed construction of the new Redding Police Department Headquarters, directly adjacent to SHU HQ, on the east property line. This followed construction of a new library adjacent to the western property line in 2009 and, in 1999, a new City Hall, adjacent to the eastern property line. Construction of the city hall and police headquarters restricted access to the facility from the main access road, Cypress Avenue, and required access to and from the facility via a surface street, Grape Street. This has handicapped the movement of fire apparatus and equipment to and from the facility. The Unit's all-risk emergency operations mission is also in conflict with the city of Redding's General Plan.

Senate Bill (SB) 178, chaptered on October 11, 2009, authorized the Director of the DGS to sell, exchange, or lease the existing 3.88-acre state-owned parcel, and required DGS to use the proceeds to relocate the SHU HQ to a suitable site. The bill also allowed the state to retain ownership of the portion of the HQ where the telecommunications tower and the vault are located. The City of Redding has expressed interest in purchasing the property for the planned expansion of its facilities.

The buildings, built around 1940, are deteriorated, inefficient and significantly inadequate for the critical mission of the SHU. Over the years, numerous additions and remodeling projects have been implemented to keep pace with CAL FIRE's evolving mission. However, the facility no longer meets the needs of the SHU. Many of the old buildings are non-insulated metal structures that do not meet current building codes and do not provide proper restroom facilities for personnel. The facility is not compliant with the Americans with Disabilities Act (ADA). Ramps and a bell have been installed at the main public entrance to assist people with disabilities. The bell alerts staff that a person with a disability needs assistance with entering the building. Additionally, there are no ADA-compliant restrooms. Security of the facility is also a significant issue due to its location. The HQ and its vehicles have been burglarized on several occasions.

Electrical, sewer, water, heating, and cooling systems are antiquated and failing. Due to the increased power usage from electronic equipment such as radios, computers, copiers, and printers, the electrical load often runs at full capacity and repairs are frequently required. Sewer systems back up regularly due

to inadequate sewer capacity, and the public and compound parking areas flood during rainstorm events due to inadequate storm drain capacity. Due to their age, the domestic water delivery pipes are brittle and break often, and when this occurs the entire water supply to the facility must be shut off while repairs are made. The cooling and heating systems are inefficient, antiquated, and costly to operate.

The administrative office building does not provide the needed space for all functions, which include administrative staff, resource management, and fire prevention, personnel sharing office space. The training office is located outside the administration building in a converted storage facility that does not meet building code requirements. There is no training room and storage is inadequate. The Prevention Office is additionally located outside the administration building in office space constructed in the Service Center. The Prevention Office does not have adequate evidence and secure weapon storage. Heating and cooling are inefficient and inadequate in all the office spaces. The heating and cooling system in the administration building is the result of the combination of three separate systems. The separate systems result in uneven temperature control throughout the building that has impacted personnel wellbeing.

The mobile equipment maintenance and repair shop is in a non-insulated, corrugated, metal building that has been repeatedly identified in semi-annual facility safety inspections as being a health and safety risk. During the winter months, the vehicle hoist lifting cylinders are submerged in standing water due to an elevated water table. The antiquated electrical system does not meet National Electrical or Uniform Building Codes. The roll-up service doors are extremely narrow for modern fire engines and other specialized apparatus. These deficiencies create significant safety problems for personnel conducting routine maintenance and repair work on vehicles. The auto shop restroom is inadequate for assigned personnel and does not meet the Uniform Plumbing Code or ADA requirements. Due to the antiquated plumbing, a California Occupation Safety and Health Administration-required emergency drench shower cannot be installed. The general health and safety problems associated with an auto shop pose a liability to the state and to the health and safety of staff who must work in this shop.

The service center warehouse is approximately 5,000 square feet, which is half of the needed storage for the Unit. The service center has inadequate lighting and electrical systems, plumbing, and heating and cooling. Additionally, it is on a 3-foot-raised foundation which makes movement of supplies and material difficult and unsafe.

The OES telecommunications repair shop provides inadequate office and vehicle repair space. The repair shop is not adequately heated and cooled and has inadequate storage. Because of the condition of the building, the OES Telecommunication Technicians have relocated into an offsite leased facility.

2.1.2 Northern Region Operations

The current NOPS site includes the CAL FIRE Northern Region Headquarters - Redding (CNR HQ), the Redding Fire Station (Fire Station #43), the Redding Air Attack Base (AAB), and the Operational Command Center (OCC), jointly operated with the USFS. The components of the CNR HQ include several administration divisions, Technical Services, telecommunications, and various training facilities. The Project proposes to relocate the CNR HQ to the new SHU HQ, and keep the OCC, Redding AAB, and Redding Fire Station at their current location. The OCC is a joint operation with the USFS, and the co-location is operationally efficient. The Redding AAB (also co-located with the USFS) will remain at Redding Airport.

2.1.2.1 Administration Office

The current administration office building is owned by the USFS and maintenance costs are shared by CAL FIRE and the USFS. Built in 1982, the facility houses both Region Administration and Management Services staff, Resource Management, SRA Fire Prevention Fee, Land Use and Planning, Training and Safety, State Forest Program, Cost Recovery, and Law Enforcement, providing office space for over 40 personnel. Due to lack of space, the Cost Recovery and Law Enforcement functions are located off-site at a leased facility.

Region Administration and Management Services include the Regional Executive staff that provides both region and program direction. Management Services includes employee support services such as workers' compensation and employee rights. Region Fleet Administration oversees the region fleet and provides coordination with Davis Mobile Equipment.

2.1.2.2 Northern Region Resource Management Programs

Northern Region Resource Management Programs consist of the Redding Review Team, Forest Practice Enforcement, Archaeology, Pest Management, Vegetation Management, and Forestry Assistance. NOPS houses personnel to administer the program for the Northern Region. The Redding Review Team processes all documents for interior Northern California, relating to the Forest Practice Program and compliance with the Z'berg Nejedly Forest Practice Act of 1973, Board of Forestry and Fire Protection Rules, and CEQA. This requires coordination with other state and federal agencies, timberland owners, professional foresters, and the public. Review and access to state environmental documents, such as Timber Harvesting Plans and EIRs to comply with CEQA, is mandated by state legislation and has specific time frames for public review and comment. As part of the Forest Practice Enforcement Program, Northern Region houses the Region Law Enforcement Coordinator and Program Law Enforcement Coordinator and provides office space for the Program Manager, Assistant Deputy Director for Resource Management, Forest Practice.

The Archaeology program is part of the Department's Environmental Protection Program, which provides CEQA review and compliance for not only Forest Practice documents but all CEQA documents for Departmental projects. The Vegetation Management Program (VMP) reviews and processes all VMP projects for the Northern Region and provides landowner assistance regarding fuel reduction projects. The program manager coordinates with Unit staff on both VMP as well as federal and state grant-funded fuel reduction programs and projects. Collectively, NOPS houses personnel to administer these programs.

Pest Management coordinates with federal and state agencies, regarding both current and emerging forest pest-related problems. The program provides advice and assistance to unit staff, as well as private forest landowners, throughout the Region. Forestry Assistance aids private timberland owners on the California Forest Improvement Program and various federal cost share programs administered by CAL FIRE such as Forest Legacy and the Forest Stewardship program. Collectively, NOPS houses staff to administer these programs.

The Watershed Protection Program (WPP) provides technical support to Sacramento Headquarters, Region, and Unit on matters related to hydrologic and biological resources. These services are routinely

utilized in Forest Practice settings for unit-related CEQA assessment and for applied research on Demonstration State Forests. The WPP currently employs forest hydrologists and a forest practice biologist.

The State Forest Program Manager coordinates with units that contain eight Demonstration State Forests to help allocate funding needs, contract development, and to support forest planning. In addition, this program seeks possible ground to include as a State Forest for future multi-purpose uses such as timber harvesting, recreation, and research.

2.1.2.3 Additional Operations

The Cost Recovery and Law Enforcement branch provides cost recovery on reimbursable incidents within the region and oversees all law enforcement related issues in the region.

The Northern Region Training Program (NRTP) is responsible for in-service training of uniformed personnel of CAL FIRE. All CAL FIRE apparatus engineers must go through training administered and coordinated by the Joint Apprentice Committee (JAC) before becoming fire captains. There is no Northern Region training facility capable of meeting the assessed need for coordinating, scheduling, sponsoring, or presenting thousands of annual student days of mandated training for Fire Protection and all other departmental programs and functions necessary for CAL FIRE to comply with the Mission Statement and Strategic Plan Objectives.

Currently, NRTP provides training for JAC employees to assist each administrative unit with the labor, equipment, and cadre demands for this element of training. The NRTP coordinates and schedules training in Incident Command System (ICS), leadership, and supervision, as well as field operational training such as chainsaw operations, firing methods, and a wide variety of ICS training for lower level ICS positions. Training responsibilities delegated to CNR also include administrative function training and interagency coordinated training, all of which require additional training facilities and classroom access. Federal training facilities in CNR are operating at maximum capability and are unable to fully meet training classroom or simulation classroom for interagency partners, such as CAL FIRE.

Since 1995, NRTP responsibility has grown from 325 student training days to an assessed need of over 6,250 student days in 2012 with a peak need of 9,000 days in 2018. There is currently an average of 60 students being trained at any given time year-round. The demand is increasing due to new and additional statutes, standards, legislative mandates, safety regulations, and departmental policy. This ever-increasing demand creates the need for CNR facilities and classrooms capable of utilizing state-of-the-art training adjuncts to develop productive and professional employees to meet the mandates of today and into the future.

CAL FIRE's NRTP coordinates 119 classes for student participation in the Northern Region alone and sponsors 79 classes directly. To meet the need for classroom space, various facilities are utilized. NRTP used the Magalia Training Center until conservation camp operations resumed in coordination with California Conservation Corps in 2016. This facility provided space for many of the scheduled classes (feeding and lodging are provided for students and cadre), but even then, the center's capability was limited.

2.1.2.4 Need for Relocation

The NOPS site is owned by the USFS. The facility was originally the Region II, Sierra Cascade Region Headquarters. Although a joint facility, CAL FIRE occupies approximately three-fourths of the administration building, with the USFS occupying the remaining one-fourth of the building. Due to its age, the facility needs significant repairs to meet health and safety requirements of employees. The heating, ventilation and air conditioning system was not modified during various remodeling of the interior of the building and needs replacement. Thus, differential heating and cooling occurs throughout the building, and it is impossible to establish uniform temperatures in all the offices. Offices are either very cold or very warm, impacting employee wellbeing.

Since 1982, CAL FIRE programs housed at NOPS have greatly expanded. The Resource Management Program, including Forest Practice, State Forest, SRA Fire Prevention Fee, Land Use and Planning, and Pre-Fire Engineering are all new programs. These programs, and Cost Recovery, have added personnel, which require additional office space, as well as parking for both state-owned and personally owned vehicles. Currently, NOPS has no additional space to accommodate the growing Resource Management Program in the administration building. The Proposed Project would accommodate this program and allow the projected annual rent to be redirected or reallocated.

In 1982, the Forest Practice Redding Review Team consisted of four people which included a Forester III, Forester II, and two office staff, while timber harvesting plans were approximately 15 pages. Today, that same staff consists of a group of 15 foresters, archeologists, biologists, and hydrologists. The average timber harvesting plan is now 200-300 pages, requiring more review and processing time. These personnel, harvest document replication and storage all require more office space.

The Cost Recovery and Law Enforcement branch is currently housed at a leased facility due to insufficient office space at NOPS. With the approval of the Cost Recovery Program, 24 new personnel were assigned to this branch. Cost Recovery also needs a large file room for records and an equipment storage room for law enforcement equipment. As a temporary solution to house the program, CAL FIRE obtained a short-term lease of 3,000 square feet of off-site commercial office space at a cost of almost $50,000 annually in rent. The Proposed Project would accommodate this program and allow the projected annual rent to be redirected or reallocated.

The SRA Fire Prevention Fee, Pre-fire Engineering, and Land Use and Planning Programs have also added positions at NOPS. The Region Pre-Fire Engineer was added to the staff at NOPS in 1994. This position requires extra space to house computer hardware such as plotters to perform the function of the position. With the passage of AB X129, the SRA Fee Program was created. Although it is a State Fire Marshal-administered program, four personnel are housed at NOPS to manage the program in the Northern Region. These include the Northern Region Program Manager and three support staff. Likewise, the Land Use and Planning is administered by the Office of the State Fire Marshal (OSFM). However, one employee is housed at NOPS. In addition, OSFM would include office space for two deputies and one supervisor to handle field review from the Fire Marshal office in Sacramento.

The CNR is now utilizing the units for classroom space for off-site classes along with Butte College classrooms. Inherent with most off-site scheduled classes is increased cost, including student and cadre travel/per diem at over $1,000,000 per year, additional audio/video equipment needs, information technology considerations, specialized classroom furniture, and utilities to support the classroom or facility. Access to off-site training facilities is limited by operational use and severely limited in spring, summer, and fall.

2.2 Project Characteristics

2.2.1 Surrounding Land Uses

The irregular-shaped Project site is currently vacant grassland that is relatively flat, without trees, drainage improvements, or water bodies (Figure 2-3). The surrounding parcels feature similar grassland with some trees dispersed throughout. A small body of water exists on the property to the north. The Project site is approximately 0.75 miles northeast of the Redding Municipal Airport and 1.3 miles southeast of the intersection of Airport Road and Venture Parkway.

Infrastructure improvements including sewer, water, and electricity as well as road improvements were installed in Venture Parkway after the approval of the Stillwater Business Park. Improved road access to the Project site is one-way from the north and Venture Parkway extends south to the southern border of the Stillwater Business Park. The Project site is located outside the Federal Emergency Management Agency 100-year Flood Zone.

2.2.2 Buildings and Facilities

The Proposed Project will include design and construction of a CNR HQ administration building, CNR Technical Services administration, shop, and storage buildings, CNR Training Building, 70-bed dormitory and cafeteria, SHU HQ administration building, SHU Training building, ECC, 120-foot communications tower, Dozer and Motor Control Center (MCC) Storage building, including fitness and tactical training building including an outdoor paved court, service center warehouse, including flammables storage shed and fueling station, six-bay auto shop, fire pump test pit and several parking lots. Other site development improvements will include asphalt paving, curbs, sidewalks, public utilities connections, fire suppression system, fire hose wash rack with drying slab, photovoltaic (PV) solar arrays, and security system with cameras and security fencing. The Proposed Project site layout is shown in Figure 2-4. The buildings/facilities and their functions are explained in further detail below. The SHU HQ's public business hours would be 8:00 am to 5:00 pm. However, facility personnel would utilize various buildings both during and outside of public business hours (Table 2-1).

Photo 1. Annual Grassland near southern boundary

Photo 2. Annual Grassland near SE corner of site

Photo 3. Annual Grassland near eastern boundary

Photo 4. Western portion of site and Venture Parkway

ECORP Consulting, Inc.
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Figure 2-3. Representative Site Photographs

2018-116.041 CAL FIRE SHU HQ and CNR HQ Relocation

Source: Dreyfuss + Blackford Architecture

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Figure 2-4. Conceptual Site Plan

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Table 2-1. Proposed Buildings

Building	Hours of Operation
CNR Administration (Building 100; 33,500 sf)	7:00 a.m. – 7:00 p.m.
CNR Technical Services Administration (Building 200; 5,820 sf)	5:00 a.m. – 7:00 p.m.
CNR Technical Services Storage (Building 300; 5,120 sf)	5:00 a.m. – 7:00 p.m.
CNR Technical Services Shop (Building 400; 8,313 sf)	5:00 a.m. – 7:00 p.m.
CNR Training Center (Building 500; 9,712 sf)	8:00 a.m. – 5:00 p.m. during training season; Intermittent use during fire season
CNR Dormitory and Cafeteria (Building 600; 24,305 sf)	24/7 during training season and strike team operation; Intermittent use by strike teams during fire season
SHU Administration (Building 700; 17,470 sf)	7:00 a.m. – 7:00 p.m.
SHU Training (Building 800; 5,000 sf)	8:00 a.m. – 5:00 p.m. during training season; Intermittent use during fire season
ECC (Building 900; 10,130 sf)	24/7
Dozer and MCC Storage (Building 1000; 5,200 sf)	24/7 during emergency response events; 7:00 a.m. – 7:00 p.m. during non-emergencies
Fitness and Tactical Training (Building 1100; 3,300 sf)	24/7 availability with peak usage likely between 6:00 a.m. – 10:00 p.m.
Service Center Warehouse (Building 1500; 11,340 sf)	24/7 availability during emergency response events; 8:00 a.m. – 5:00 p.m. during non-emergencies
Auto Shop (Building 1600; 13,340 sf)	24/7 availability during emergency response events; 8:00 a.m. – 5:00 p.m. during non-emergencies

Note: CNR = CAL FIRE Northern Region; MCC = Motor Control Center; sf = square foot/feet; SHU = Shasta-Trinity Unit

2.2.2.1 CNR HQ Administration

The 33,500-square foot (sf) CNR HQ Administration building will be located in the western central portion of the site, opposite a site-bisecting central walkway from the SHU HQ building. The building will include offices, conference rooms, records rooms, open plan workspace areas, breakroom, library, lobby and reception area, bathrooms, janitorial closet, and various storage closets. The building would also feature an OCC Suite, with dispatch room and OCC-designated entrance, and a Law Enforcement Suite, with secure weapons and evidence storage rooms, and a Law Enforcement entrance. The public entrance would open into the lobby on the northern side of the building. The building will maintain the same general function as described in Section 2.1.2.1, overseeing various Region Administrative and Management Services. The CNR HQ Administration building would have an estimated 116 full-time employees.

2.2.2.2 CNR Technical Services Administration, Shop, and Storage Buildings

The three Technical Services buildings will be located in the southern central portion of the site along the southern site boundary. The 5,820-sf Administration building will feature a conference room, offices, workstations, library, breakroom, and bathrooms. A walkway with landscaping will connect the Administration Building to the Shop Building. The 8,313-sf Shop Building will feature four separate shops, including parts and tools, electrical, metal, and wood, an air compressor room, and a paint/finish room. Each of the four shops would have a large vehicle entry with an overhead door on the eastern side of the building. The 5,120-sf Storage Building will be located opposite the overhead doors, east of the Shop Building, and connected via an outdoor secured storage area. The CNR Tech Services Administration building would have an estimated 22 full-time employees.

2.2.2.3 CNR Training Center

The 9,712-sf CNR training Center will be located in the center of the site. The Training Center will feature four classrooms, two breakout rooms, a lobby, offices, storage closets, bathrooms, and a paved court. Primary entry will occur via the northwest corner of the building, along the central walkway, and a secondary entrance will be included on the southern side of the building. The Training Center is most active during training season, which operates opposite fire season (winter to mid-spring) and is used intermittently during fire season (mid-spring to late-fall). The Training Center will provide space for the NRTP to train uniformed personnel and CAL FIRE apparatus engineers with the core competencies described in Section 2.1.2.3.

2.2.2.4 CNR Dormitory and Cafeteria

The 24,305-sf CNR Dormitory will be located in the center of the site, east of the training court. The Dormitory will include 70 beds, kitchen and food storage room, dining cafeteria, bathrooms, laundry room, and various electrical, mechanical, and custodial storage closets. The CNR Dormitory will house both trainees during the training season and strike team personnel during peak fire season and/or widespread emergency response events.

2.2.2.5 SHU Administration

The 17,470-sf SHU Administration building will be located in the western central portion of the site, north of the CNR Administration building. The building will include offices, conference rooms, map, filing, and mail rooms, open plan workspace areas, breakroom, library, lobby and reception area, bathrooms, janitorial closet and various storage closets. The building would also feature a Law Enforcement Suite, with secure weapons and evidence storage rooms, interview rooms, and a dedicated secure entrance. The SHU Administration building will provide similar function to the existing facility described in Section 2.1.1.1, providing a workspace for the Fire Prevention Bureau and State Fire Marshal, Law Enforcement, Resource Management, Vegetation Management, field Battalion Chiefs, and administrative and clerical personnel. The SHU Administration Building would have an estimated 52 full-time employees.

2.2.2.6 SHU Training

The 5,000-sf SHU Training Building will be located in the central portion of the site, north of the CNR Training Center. The building will include a training room, offices, restrooms, records and general storage rooms, and a small kitchen. Primary entry will occur via the central walkway with a secondary entrance on the north side of the building. The Training Building will provide the same function as the existing facility described in Section 2.1.1.1, providing a space for year-round mandated training of fire and resource management personnel. The SHU Training Building would have an estimated 6 full-time employees.

2.2.2.7 Emergency Command Center and Telecommunications Tower

The 10,130-sf ECC will be located in the eastern portion of the site and will include construction of and connection to a new telecommunications tower and generator sound attenuation enclosure. The building will feature a dispatch center, command center, public information office and conference room, bedrooms, laundry room, kitchen, bathrooms, breakroom, and electrical, mechanic and telecommunications storage rooms. The ECC will provide the same function as described in Section 2.1.1.2, providing dispatch and communications services to the Shasta County Fire Department's 19 fire companies and 9 Shasta County special/fire districts. During major fire emergencies, additional personnel are assigned to ECC to navigate logistical functions. The ECC would have an estimated 5 full-time employees.

The telecommunications tower is anticipated to be a 120-ft four-legged lattice tower with various attached antennas. The tower will be located on the eastern side of the site, furthest away from Venture Parkway vantage points.

2.2.2.8 Dozer and MCC Storage

The 5,200-sf Dozer and MCC Building will be located in the northern central portion of the site. This building will feature an enclosed parking garage for the mobile command center vehicle, fire response bulldozers with transport trucks, bulldozer tender vehicles, two service bay, restrooms, and lockers. An outdoor vehicle wash area will be located next to the building.

2.2.2.9 SHU Fitness and Tactical Training

The 3,300-sf SHU Fitness and Tactical Training building will be located in the center of the site, east of the training court. This building will include a large exercise room, locker room and bathrooms, storage room, and fenced outdoor equipment storage area.

2.2.2.10 Service Center Warehouse

The 11,340-sf Service Center Warehouse will be located in the northeast portion of the site, east of the auto shop. This building would house vehicles. This building will include a large warehouse with shelving storage managed by forklifts, small vehicle storage room, 300-sf cooler, personal protective equipment room, office, records room, break room, and restrooms.

An 8,000-gallon above ground covered fuel storage tank and covered dispensing system would be installed adjacent to the northern side of the warehouse. The tank would be split for 4,000 gallons each of diesel and unleaded gasoline. One 151-sf flammable storage shed would be constructed adjacent to the eastern side of the warehouse. A 20-yard dumpster would also be located near the eastern side of the warehouse. The Service Center Warehouse would have an estimated 3 full-time employees.

2.2.2.11 Auto Shop

The 13,340-sf auto-shop will be located in the northern central portion of the site, between the Dozer and MCC Storage Building and Service Center Warehouse. The six-bay auto shop will include a parts storage room, welding room, bulk fluids room, break room, open office space and equipment manager's office. The Auto Shop would be used for vehicle maintenance. The Auto Shop would have an estimated 8 full-time employees.

2.2.2.12 Fire Pump Test Pit

A 10,000-gallon, three-chamber fire pump test pit would be located in the northeast corner of the site.

2.2.2.13 Photovoltaic Solar Array

Carport-mounted PV solar arrays would be included to generate renewable energy at the Project site. The system would be comprised of multiple carport canopies located over the parking areas, to serve the power system at the CNR Administration Building. Based on the proposed size of the CNR Administration Building, a nominal 100 kW Alternating Current (AC) rated system on approximately 7,000 sf of available carport area would need to be provided. Additional carport mounted PV power systems are being considered for other parking locations on the site. Carport-mounted PV arrays will be provided around most of the surface parking lots. These PV arrays will provide the required renewable energy production mandated by the State of California for a Zero Net Energy Project.

The system will use standard crystalline PV panels installed in a flat orientation on carport canopies and will provide roughly 120,000 kilowatt hours (kWh) of electric energy production per year. The system will be a non-storage type (with no batteries) and will be directly connected into the Main Switchboard with a suitable "knife switch" disconnect located within 10 ft of the main service utility disconnect. The purpose of the disconnect is to allow a single point of disconnection of the PV system if required by the utility company. Additional system components would include direct current (DC) wiring, Three-Phase String Inverters at each canopy, AC and DC disconnects, AC collector panels and feeders, and related monitoring components, as well as a tie-in to the main electric service. The system would be commissioned in full compliance with utility company regulations for interconnection with the utility grid. The system would use "netmetering" to allow credit of all generated power against each monthly bill at the retail rate (using a bi-directional utility meter).

The elevated carport PV panels will be supported by a series of cantilevered, structural steel frame bents. Round, square, or rectangular HSS columns will be located at every other parking space, supporting a cantilever beam. Cold-formed steel Z-purlins will span between the beams and serve as the support and

attachment joints for the PV panels. Each column will be supported by either a reinforced concrete cylinder "flagpole" foundation or a spread footing.

2.2.3 Additional Site Improvements

Construction would begin with site grading to level areas for buildings, paving, and flatwork. Additional site improvements would include:

- Concrete and/or asphalt paving for site driveways and concrete curbs, gutters, sidewalks, and flatwork
- Bio-Treatment areas for stormwater quality requirements
- Installation of retaining walls, maximum four feet high
- Temporary and permanent erosion and sediment control measures
- Landscaping and associated irrigation
- 8-ft perimeter chain link security fencing with barbed wire
- Electric powered sliding gates at site entrance
- Pole-mounted site lighting
- Flagpole with lighting
- Directional and entrance signage
- Trash enclosures
- Mechanical equipment zones

2.2.3.1 Lighting

The developed areas of the site will be illuminated with pole lights and the undeveloped areas will not have installed lighting until future development is defined. Lighting will be designed to limit light trespass on adjacent parcels. Walkways shown in Figure 2-4, the entry gates, and 24-hour occupancy buildings, including the ECC and dormitories, will all be well lit at night year round. During emergency events, operations will extend past regular business hours in additional buildings, resulting in additional site lighting.

2.2.3.2 Parking

Approximately 540 total parking spaces would be provided, including parking for staff, visitors, trainees, and fleet vehicles. The spaces would be dispersed throughout the site in approximately 12 total parking lots.

2.2.4 Staffing

The new combined facility would staff approximately 212 full-time employees. In addition to the employees identified building-by-building above, approximately 6 full-time kitchen staff and 6 housekeeping staff would also be required. Some facilities may require future part-time staff but those positions are unknown at this time. During training season, the dormitory would house approximately 70 trainees for the duration of the season. Peak facility capacity, whether during training season or in the event of a large wildfire response, would likely approach 320 persons. The Proposed Project also includes a 12-acre undeveloped area that would allow for future expansion and occupancy.

2.2.5 Project Construction

Project construction would likely begin in Summer/Fall 2024 or Spring 2025 and be complete within 24 months. Construction activities would start when Project funding has been fully secured and all construction contracts have been put in place.

2.2.6 Utilities

2.2.6.1 Water

The City of Redding will provide potable water service to the site. The 16-inch water main located in Venture Parkway has sufficient pressures to serve the site. The proposed water system is 8 inches and will connect to the 16-inches water main at two points. A water valve and water meter are proposed at each connection. The system will be looped and supply domestic, and fire demands to all structures and hydrants. A fire pump will be installed to boost pressure for the fire suppression system. New domestic water and fire water distribution systems will be installed in each building. Additional fire water improvements include storage tanks, pump and pressure system, fire hydrants, and backflow prevention.

2.2.6.2 Stormwater

Per the City of Redding post-construction standards, the new development is classified as a regulated project (improvements greater than 5,000 sf) which will require storm treatment. No runoff detention is required according to the City of Redding Stillwater Business Park Environmental Impact Report (EIR), dated February 2, 2026. The site naturally drains east to west and discharges to the drainage ditch along Venture Parkway. The proposed system will mimic existing drainage patterns and capture/treat runoff before ultimately discharging to the Venture Parkway drainage ditch within the public right of way. A series of bio-treatment basins are proposed in the center plaza of the site to treat impervious runoff from adjacent areas. The basins shall provide an integrated design that is both functional and aesthetically pleasing. Runoff not treated by the bio –treatment basins will be captured and treated by a bio-treatment pond at the southwest corner of the campus. Amended strips are proposed throughout the site to treat surface flow runoff from select parking areas. Stormwater treatment and control measures such as low-impact design methods (LIDs) and site design measures (SDMs) will be utilized to mitigate and treat stormwater runoff. Treatment areas will be sized according to the California Phase II Low-Impact Development (LID) sizing Tool. A combination of bio-treatment ponds (0.37 acres), bio-treatment basins

(0.311 acres), and amended soil strips (0.304 acres) will be used to comply with the City of Redding requirements. The treatment measure sections proposed are as follows:

- Bio-Treatment ponds: 2 feet deep with 2 feet soil, and 2 feet of gravel storage.
- Bio-treatment basins: 1 foot deep with 2 feet soil, and 2 feet of gravel storage.
- Amended soil strips: 18" of amended soil.

2.2.6.3 Wastewater

The City of Redding will provide wastewater collection for the Proposed Project. A new wastewater collection system will connect each building and convey to the existing infrastructure in Venture Parkway. There will be one sanitary sewer line in each interior access road that will collect sewage from each adjacent building (two total). The lines will be 10 inches and connect to the 12-inch sanitary sewer main in Venture Parkway. Sewer stubs will be provided for the future development of parcels.

2.2.6.4 Electricity and Telecommunications

PG&E (SF – TEE: Redding Electric Utility to provide electric utility) will provide electricity for the Project site. New underground electrical and telephone/broadband utility services will be installed and connected to the existing overhead joint utility lines located along Venture Parkway. New underground raceways for electrical, lighting controls, security, fire alarm, and telephone/broadband systems will be installed between each building.

As described above, a PV solar array will be constructed on canopies over several parking areas. The PV array will connect to the site's electrical system, providing approximately 120,000 kWh of electricity production per year to achieve the requirement of Net Zero Energy for this project.

2.2.6.5 Natural Gas

It is anticipated the Project site will be supplied with natural gas from the adjacent street Pacific Gas and Electric Company (PG&E) gas main; to be confirmed upon design team engagement with PG&E.

2.2.6.6 Solid Waste

The City of Redding's Solid Waste Utility offers residential and commercial collection services and will serve the Project site. The City of Redding's Transfer Station and Material Recovery Facility (MRF) is located at 2255 Abernathy Lane. The facility currently processes about 500 tons of garbage each day and has an operating capacity of 750 tons per day. All garbage is transferred to the West Central Landfill for disposal. The Solid Waste Utility also operates the West Central Landfill at 14095 Clear Creek Road, which is owned by the County of Shasta. The landfill accepts commercial and residential solid waste from everywhere in Shasta County (City of Redding 2023a).

2.2.7 Offsite Improvements

The Proposed Project will not include any offsite improvements.

2.3 Regulatory Requirements, Permits, and Approvals

The Proposed Project would require the following approvals and regulatory permits:

- Central Valley Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP)
- City of Redding – Specific Plan Development Review for conformance to Stillwater Development Plan and City Planning Ordinances.
- City of Redding Fire Department – Local Fire Authority Access Review
- City of Redding - Public Works Permits for Grading, Frontage Improvements, and Utilities
- Division of State Architect Essential Services Plan review for ECC and Dozer MCC Building and Communications Tower
- Division of State Architect Access Compliance review for entire project.
- Office of the State Fire Marshall – Fire and Life Safety Review
- Shasta County Air Quality Management District – Permit for Emergency Generator
- Shasta County Environmental Health – Construction Permit for Kitchen/Food Services

2.4 Consultation With California Native American Tribe(s)

2.4.1 Summary of AB 52 Tribal Consultation

Within 14 days of initiating CEQA review for the Project, on July 13, 2023, CAL FIRE sent Project notification letters to the 12 California Native American tribes named above that CAL FIRE obtained contact information from the Native American Heritage Commission (NAHC). Of the 12 tribes, only one tribe, the Paskenta Band of Nomlaki Indians, had previously submitted a general consultation request letter pursuant to Section 21080.3.1(d) of the PRC. The letter provided each tribe with a brief description of the Project and its location, the contact information for CAL FIRE's authorized representative, and a notification that the tribe has 30 days to request consultation.

Paskenta Band of Nomlaki Indians

On July 21, 2023 Mr. Laverne Bill, Tribal Historic Preservation Officer (THPO), responded to the initial consultation letter sent on July 13, 2023. Mr. Bill stated that the Project is located within the aboriginal territory of the Paskenta Band of Nomlaki Indians and the tribe has a cultural interest in the project. He requested a formal coordination meeting with the lead agency.

CAL FIRE re-sent initial consultation letters with updated contact information on September 1, 2023. Mr. Bill responded on September 28, 2023. He stated that a TCR, as defined in PRC 21074, is located in proximity to the proposed Project. Due to this proximity, Mr. Bill requested a cultural awareness training prior to any ground disturbing work.

Mr. Len Nielson replied on October 25, 2023 that CAL FIRE did not find evidence of a TCR and requested supporting evidence from the Tribe.

Mr. Bill responded on November 27, 2023 and provided additional evidence to support the identification of a TCR in proximity to the Project. A cultural awareness training was specifically requested to be provided to construction personnel to assist in the identification of TCR's.

On December 21, 2023, Mr. Nielson replied to Mr. Bill and stated that CAL FIRE understood the Tribe's concerns. CAL FIRE had drafted the following mitigation measures:

CUL-1: **Inadvertent Discovery.** The following mitigation measures are intended to address the evaluation and treatment of inadvertent/unanticipated discoveries of potential tribal cultural resources (TCRs), archaeological, or cultural resources during the project's ground disturbing activities:

- If any subsurface deposits are encountered during ground disturbing activities that are believed to be cultural or human in origin, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, 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:
    1. If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
    2. If the professional archaeologist determines 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 by CEQA or a historic property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the resource 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.
    3. If the find is pre-contact in nature, then a Tribal Representative from a Native American tribe that is traditionally and culturally affiliated with a geographic

area shall be immediately notified. In this case, mitigation measure TCR-1 shall be followed.

TCR-1: **Unanticipated Discovery of Tribal Cultural Resources.** If potentially significant TCRs are discovered during ground disturbing activities, all work shall cease within 100 feet of the find. A Native American Representative from traditionally and culturally affiliated Native American Tribes that requested consultation on the Project shall be immediately contacted and invited to assess the significance of the find, make recommendations for further evaluation and treatment, and may be requested to provide worker training to recognize sensitive cultural resources, as necessary. If deemed necessary by CAL FIRE, a qualified cultural resources specialist, who meets the Secretary of Interior's Standards and Qualifications for Archaeology, may also assess the significance of the find in joint consultation with Native American representatives to ensure that Tribal values are considered. Work at the discovery location cannot resume until CAL FIRE, in consultation, as appropriate, and in good faith determines that the discovery is either not a TCR, or has been subjected to culturally appropriate treatment, if avoidance and preservation cannot be accommodated.

San Manuel Band of Mission Indians

On July 20, 2023, Bonnie Bryant with Yuhaaviatam (formerly known as the San Manuel Band of Mission Indians) responded via email and thanked CAL FIRE for the opportunity to review the Project and stated that it is located outside of their ancestral territory and has declined to consult, and therefore, the threshold for conducting tribal consultation with that tribe under PRC 21080.3.1(e) was not met. No further attempts at consultation were required by state law.

Mishewal Wappo Tribe of Alexander Valley

The notice of opportunity addressed to Vincent Salsedo with the Mishewal Wappo Tribe of Alexander Valley was returned as "Not Deliverable As Addressed-Unable to Forward." No updated mailing address was provided to resend the letter; therefore, no further attempts at consultation were required by state law.

Non-Responding Tribes

None of the following Tribes responded to CAL FIRE's notification letter: The Pechanga Band of Luiseno Indians, Elk Valley Rancheria, United Auburn Indian Community, Soboba Band of Luiseno Indians, Paskenta Band of Nomlaki Indians, Pit River Tribe, Morongo Band of Mission Indians, Wilton Rancheria, Wiyot Tribe, Rincon Band of Luiseno Indians, nor the Mishewal Wappo Tribe of Alexander Valley, and therefore the threshold for conducting tribal consultation with those tribes under PRC 21080.3.1(e) was not met. No further attempts at consultation were required by state law.

Since none of these tribes responded, or stated the project was outside of their ancestral territory, other sources were reviewed to determine potential impacts to tribal cultural resources (TCRs). Sources consulted included the ethnographic history context, ethnographic maps, and results of the records

search with the CHRIS, which are all incorporated into the cultural resources report. In summary, the ethnographic information reviewed for the Project did not identify any villages, occupational areas, or resource procurement locations in or around the current Project Area. The cultural resources records search did not reveal any Native American archaeological sites within the Proposed Project Area.

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

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

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

Determination

On the basis of this initial evaluation:

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

AGENCY REP NAME *Terry Ash* TITLE Senior Environmental Planner		Date 3-5-2024

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

4.1.1.1 Regional Setting

Views of hills and mountain ranges to the west, north and east of the Project site are the most important aesthetic resources in the area. To the west, Shasta Bally is the most prominent feature among the hills and mountains. To the north and east, Mt. Shasta and Lassen Peak, respectively, are visible scenic features in the Cascade Range.

4.1.1.2 Visual Character of the Project Site

The irregular-shaped Project site is currently vacant grassland that is relatively flat, without trees, drainage improvements, or water bodies. The surrounding parcels feature similar grassland with some trees dispersed throughout. A small body of water exists on the property to the north. The Project site is approximately 0.75 miles northeast of the Redding Municipal Airport and 1.3 miles southeast of the intersection of Airport Road and Venture Parkway. Stillwater Creek and it's oak and riparian habitat are visible just west of the Project site opposite Venture Parkway.

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. Caltrans can designate a highway 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 quality of the view. State Route (SR) 44 runs east-west from Lassen Volcanic National Park through Redding, approximately 2.5 miles north of the Project site, and is designated as a state scenic highway.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

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

No Impact.

The Project site is not within a designated scenic vista. 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
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No Impact.

SR 44 is a designated state scenic highway approximately 2.5 miles north of the Project site. Due to the distance of the Project site from SR 44, the Proposed Project would not result in damage to scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings viewable from a designated (or eligible) state scenic highway. Therefore, the Project will have no impact due to changes in view of scenic resources from a designated scenic highway.

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?	☐	☐	☒	☐

Less Than Significant Impact.

Although the Proposed Project would alter the visual character of the Project site, the Project would comply with the General Plan designation and zoning and is consistent with the development of Stillwater Business Park. The Project site is vacant land that contains no unique visual resources and is not within a scenic vista or state scenic highway corridor. 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
d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Less Than Significant Impact.

Street light fixtures will be provided along the driveways consistent with City Standards. All lighting would comply with Zoning Code requirements and be shielded and directed downwards to ensure that light

does not spill onto neighboring properties or adversely affect nighttime views. This would ensure that the Project would result in a less than significant impact associated with Project site lighting.

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 Regulatory Setting

Laws and regulations relevant to the proposed Project are presented below.

4.2.1.1 State

Williamson Act

The Williamson Act is an agricultural conservation tool. Under the Williamson Act, local governments can enter into contracts with private property owners to protect land for agricultural and open space purposes. The Stillwater Business Park, including the Project site, is not under a Williamson Act contract (City of Redding 2005).

Farmland Mapping and Monitoring Program

The California Department of Conservation, Division of Land Resource Protection, administers the Farmland Mapping and Monitoring Program (FMMP). The program produces agricultural resource inventories and maps that rate agricultural lands based on soil quality, irrigation status, and land use within California. These ratings are used to help prioritize farmland conservation efforts. The inventories and maps are updated every two years and were last updated in 2008. The FMMP uses the term "Important Farmland" to describe parcels that meet certain criteria. There is no Important Farmland within the Stillwater Business Park or the Project site (City of Redding 2005).

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

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

No Impact.

The Project site is located in a business park planned and permitted for future development and is currently vacant. The site is identified as Grazing Land by the California Department of Conservation and is not designated as prime farmland, unique farmland, or farmland of statewide importance. Further, the Project site is not under a Williamson Act contract. The site has not historically been used for any agricultural purposes other than grazing. The construction of the proposed Project would not result in the conversion of any agricultural land, conflict with any agricultural use, or conflict with a Williamson Act contract. There would be no impact.

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

No Impact.

See response to 4.2.2 a). There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

No Impact.

The Project site is not zoned as forest land and does not contain forest land or forest resources. The construction of the Proposed Project would not result in the conversion of any forest land to non-forest use. There would be no impact.

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

No Impact.

See response to 4.2.2 c). There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact.

As discussed above, the Project site does not support any farmland or forest uses. Construction and operation of the Proposed Project would not result in conversion of any farm, agricultural, or forest land to non-agricultural or non-forest uses.

4.2.3 Mitigation Measures

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

4.3 Air Quality

This section is based on the analysis and recommendations presented in the *Air Quality and Greenhouse Gas Emissions Assessment* (ECORP 2023a, Appendix A) prepared for the Proposed Project in July 2023.

4.3.1 Environmental Setting

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. Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Northern Sacramento Valley Air Basin (NSVAB), which encompasses the Project Area, pursuant to the regulatory authority of the Shasta County Air Quality Management District (SCAQMD). The purpose of this assessment is to estimate criteria air pollutants attributable to the Project and determine the level of impact the Project would have on the environment.

4.3.1.1 Northern Sacramento Valley Air Basin

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 Shasta County, which is in the 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 above mean sea level, 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 air basin is relatively flat, bordered by mountains to the east, west, and north and by the San Joaquin Valley to the south. Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the Sacramento Valley. Because the valley is in a bowl-like shape, this can trap pollutants and a temperature inversion layer can create unhealthy pollution concentrations.

Meteorological Influences on Air Quality

Regional flow patterns affect air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as moderate winds, disperse pollutants and reduce pollutant concentrations. However, the mountains surrounding the NSVAB can create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right and a temperature inversion exists. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical air flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground.

The ozone season (May through October) is characterized by stagnant morning air or light winds, with the delta sea breeze arriving in the afternoon out of the southwest. Usually, the evening breeze transports the airborne pollutants to the north. During about half of the days from July to September, however, a phenomenon called the Schultz Eddy prevents this from occurring. Instead of allowing the prevailing wind patterns to move north and carry the pollutants out of the NSVAB, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon exacerbates the pollution levels in the area and increases the likelihood of exceeding federal or state standards.

4.3.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. Particulate matter (PM) is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 4.3-1.

Table 4.3-1. Criteria Air Pollutants – Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)
Note: CO = Carbon Monoxide; N_2O = Nitrous Oxide; NO_2 = Nitrogen Dioxide; O_3 = Ozone; $PM_{2.5}$ = Fine Particulate Matter; PM_{10} = Coarse Particulate Matter; ROG = Reactive Organic Gas; SO_2 = Sulphur Dioxide

Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease, and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the NSVAB are in compliance with the state and federal one- and eight-hour standards.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections and lowers resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, are attributed to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of Reactive Organic Gas (ROG) emissions is unburned hydrocarbons in motor vehicles and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and

emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

4.3.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, 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.

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. 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.

Most recently, CARB identified diesel particulate matter (DPM) as a Toxic Air Contaminant (TAC). DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

4.3.1.4 Ambient Air Quality

Ambient air quality in the Project Area can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As described in detail below, the region is designated as a nonattainment area for the state O_3 standard (see Table 4.3-2 below). The Project region is classified as unclassified/attainment for all federal standards.

The Redding - Health Department air quality monitoring station (2630 Breslauer Way), located 5.45 miles northwest of the Project Site, monitors ambient concentrations of O_3, $PM_{2.5}$, and PM_{10}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project Area.

Table 4.3-2 summarizes the published data concerning O_3, $PM_{2.5}$, and PM_{10} from the Redding - Health Department air quality monitoring station. O_3, $PM_{2.5}$, and PM_{10} are the pollutant species most potently affecting the Project region.

Table 4.3-2. Summary of Ambient Air Quality Data

Pollutant Standards	2019	2020	2021
O_3			
Max 1-hour concentration (ppm)	0.072	0.077	0.089
Max 8-hour concentration (ppm) (state/federal)	0.070/0.070	0.070/0.069	0.068/0.067
Number of days above 1-hour standard (state/federal)	0/0	0/0	0/0
Number of days above 8-hour standard (state/federal)	0/0	0/0	0/0
PM_{10}			
Max 24-hour concentration (µg/m^3) (state/federal)	28.1/26.4	94.4/95.4	121.6/126.2
Number of days above 24-hour standard (state/federal)	*/0	23/0	*/0
$PM_{2.5}$			
Max 24-hour concentration (µg/m^3) (state/federal)	24.1/24.1	68.3/68.3	165.3/165.3
Number of days above federal 24-hour standard	0	18.4	26.4

Source: California Air Resources Board (CARB) 2022a
Note: * = Insufficient data available; µg/m^3 = micrograms per cubic meter; O_3 = Ozone; PM_{10} = Coarse Particulate Matter; $PM_{2.5}$ = Fine Particulate Matter; ppm = parts per million

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the Shasta County portion of the NSVAB, which encompasses the Project Area, is included in Table 4.3-3.

Table 4.3-3. Attainment Status of Criteria Pollutants in the Shasta County Portion of the NSVAB

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Unclassified/Attainment
PM_{10}	Attainment	Unclassified
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: California Air Resources Board (CARB) 2022b
Note: CO = Carbon Monoxide; NO_2 = Nitrogen Dioxide; NSVAB = Northern Sacramento Valley Air Basin; O_3 = Ozone; $PM_{2.5}$ = Fine Particulate Matter; PM_{10} = Coarse Particulate Matter; SO_2 = Sulfur dioxide

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the state O_3 standard (CARB 2022b).

4.3.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who 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 rural residences located approximately 1,050 feet northwest, on Desperado Trail.

4.3.2 Regulatory Setting

4.3.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. These standards are the levels of air quality considered safe, with an adequate margin of

safety, to protect public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 4.3-3 lists the federal attainment status of the Shasta County portion of the NSVAB for the criteria pollutants.

4.3.2.2 State

California Clean Air Act

The California Clean Air Act allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

Local air districts, in combination with the SCAQMD, prepare air quality attainment plans or air quality management plans (AQMDs) and submit them to CARB for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis. The local air districts and Counties that comprise the NSVAB have attained and

maintained air quality conditions in region through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. Their current strategies are included in the *Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan* (Sacramento County Valley Air Quality Engineering and Enforcement Professionals 2021), which contains mechanisms to achieve ozone standards.

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an Airborne Toxics Control Measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a Health Risk Assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by SB 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

4.3.2.3 Local

Shasta County Air Quality Management District

Air quality standards are set at both the federal and state levels of government. The federal Clean Air Act requires the USEPA to establish ambient air quality standards for six criteria air pollutants: O_3, CO, NO_2, SO_2, lead, PM_{10}, and $PM_{2.5}$. The California Clean Air Act also sets ambient air quality standards. The state standards are more stringent than the federal standards, and they include other pollutants in addition to those regulated by the federal standards. When the concentrations of pollutants are below the maximum allowed standards in an area, that area is considered to be in attainment of the standards. The County has been designated as a nonattainment area for the state O_3 standard, though is considered to be in attainment of all other standards. Similarly, Shasta County is classified as being in attainment for all pollutants under federal standards (CARB 2022b).

All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction. Descriptions of specific rules applicable to construction resulting from implementation of the Proposed Project may include, but are not limited to:

- SCAQMD Rule 2-1A, Authorities to Construct/Permits to Operate, allows any person to use construction equipment for construction activities, and must obtain a permit to operate prior to installation activities.
- SCAQMD Rule 3-2, Specific Air Contaminants, controls the amount of air contaminants allowed to be discharged into the atmosphere.
- Architectural coatings and solvents used at the Project shall be compliant with SCAQMD Rule 3-31, Architectural Coatings.
- Cutback and emulsified asphalt application shall be conducted in accordance with SCAQMD Rule 3-15, Cutback and Emulsified Asphalt.
- SCAQMD Rule 3-16, Fugitive, Indirect, or Non-traditional Sources, controls the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and conditions resulting in wind erosion.

4.3.3 Air Quality (III) Environmental Checklist and Discussion

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

No Impact.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a 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. The NSVAB portion of the SIP is constituted of air quality attainment plans approved by the USEPA. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously mentioned, the Shasta County portion of the NSVAB is designated as unclassified or attainment for all federal standards of criteria pollutants.

As previously mentioned, the Project Site is located within the Shasta County portion of the NSVAB, which is under the jurisdiction of the SCAQMD. The Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan (2021) is the most recent air quality planning document covering Shasta County and contains mechanisms to achieve O_3 standards. These pollutant control strategies are based on the latest scientific and technical information and planning assumptions, updated emission inventory methodologies for various source categories, and the latest population growth projections and associated vehicle miles traveled projections for the region. SCAQMD's latest population growth forecasts were defined in consultation with local governments and with reference to local general plans. A project conforms with the SCAQMD attainment plans if it complies with all applicable district rules and

regulations, complies with all control measures from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan).

SCAQMD growth projections for the City are based on the City of Redding General Plan. As such, projects that propose development consistent with the growth anticipated by the respective general plan of the jurisdiction in which the project is located would be consistent with SCAQMD air quality planning. If a project, however, proposes a project that increases the population density than that assumed in the general plan, the project may conflict with SCAQMD air quality planning efforts and could result in a significant impact on air quality. The Project is proposing the construction and relocation of the existing SHU HQ and CNR HQ. The Proposed Project does not include development of new housing or employment centers but rather the relocation of an existing facility within the City. Thus, the Project would not induce population or employment growth. Additionally, the relocation of these facilities would decrease response time and the potential for vehicle accidents within the City.

The Project would not conflict with or obstruct implementation of the applicable air quality plan. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Less Than Significant Impact.

SCAQMD significance thresholds are used to determine air quality impacts in this analysis. These thresholds are consistent with New Source Review Rule 2-1 adopted by the SCAQMD Board in 1993, as required by the California Clean Air Act. The thresholds of significance are summarized in Table 4.3-4.

Table 4.3-4. SCAQMD Thresholds of Significance – Pounds per Day

Threshold	NO_x	ROG	PM_{10}
Level A Thresholds	25	25	80
Level B Thresholds	137	137	137

Note: NO_x = Nitric Oxide; PM_{10} = Coarse Particulate Matter; ROG = Reactive Organic Gas; SCAQMD = South Coast Air Quality District

The SCAQMD recommends that projects apply Standard Mitigation Measures (SMM) and appropriate Best Available Mitigation Measures (BAMM) when a project exceeds Level A thresholds and SMM, BAMM, and special BAMM when a project exceeds Level B thresholds. Projects that cannot mitigate emissions to levels below the Level B thresholds are considered significant. Based on these standards, the effects of the Proposed Project have been categorized as either a "less than significant impact" or a "potentially

significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

Where criteria air pollutant quantification is required, emissions are modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.14 (CAPCOA 2022). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated primarily using CalEEMod model defaults for Shasta County. Operational air pollutant emissions were based on the land uses, building dimensions, and lot size identified in the Project Site Plan.

The Project proposes to relocate the existing SHU HQ as well as the CNR HQ - Redding facility to the Proposed Project Site. For the purpose of this analysis, operational emissions for the Proposed Project are compared to the emissions that are currently generated for the SHU HQ and CNR HQ, which are proposed for relocation, and the delta in emissions between these two scenarios is assessed against the SCAQMD's recommended thresholds of significance.

4.3.3.1 Construction Criteria for Air Quality Emissions

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. The basic sources of short-term emissions that will be generated through construction of the Proposed Project would be from grading activities and from the operation of the construction vehicles (i.e., trenchers, dump trucks). 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. The dry climate of the area during the summer months creates a high potential for dust generation.

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 A 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 4.3-5. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Table 4.3-5. Construction-Related Emissions

Construction Year	Pollutant (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction Calander Year One	14.62	23.17	34.02	0.06	9.40	5.44
Construction Calander Year Two	14.14	20.24	32.02	0.04	2.00	1.03
Level A Significance Threshold	*25*	*25*	*None*	*None*	*80*	*None*
Exceed Level A Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Level B Significance Threshold	*137*	*137*	*None*	*None*	*137*	*None*
Exceed Level B Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: California Emissions Estimator Model (CalEEMod) version 2022.1.1.14. Refer to Appendix A for Model Data Outputs.

Notes: Emissions taken of the season, summer or winter, with the highest outputs. Building construction, paving, and painting are assumed to occur simultaneously.
CO = Carbon Monoxide; NO_x = Nitric Oxide; $PM_{2.5}$ = Fine Particulate Matter; PM_{10} = Coarse Particulate Matter; SO_2 = Sulfur Dioxide; ROG = Reactive Organic Gas

As shown in Table 4.3-5, emissions generated during Project construction would not exceed the SCAQMD's Level A or Level B thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutants and impacts would be less than significant.

4.3.3.2 Operations Criteria for Air Quality Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM10, PM2.5, CO, and SO_2 as well as O_3 precursors such as ROGs and NO_X. Project-generated increases in emissions would be predominantly associated with motor vehicle use. As previously described, operational air pollutant emissions were based on the land uses, building dimensions, and lot size identified in the Project Site Plan. Long-term operational emissions attributable to the Proposed Project are summarized in Table 4.3-6 and compared to the operational significance thresholds promulgated by the SCAQMD. As previously described, projected emissions associated with the Project are compared to the existing baseline, which includes the existing SHU HQ and CNR HQ.

Table 4.3-6. Operational-Related Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Existing Shasta-Trinity Unit Headquarters and Northern Region Operations Facility						
Area	2.29	0.02	2.91	0.00	0.00	0.00
Energy	0.03	0.59	0.50	0.00	0.04	0.04
Mobile	0.95	0.71	4.43	0.00	0.50	0.13
Total:	**3.27**	**1.32**	**7.87**	**0.00**	**0.54**	**0.17**
Proposed Relocated Shasta-Trinity Unit Headquarters and Northern Region Operations Facility						
Area	5.51	0.08	9.54	0.00	0.01	0.00
Energy	0.07	1.39	1.07	0.00	0.10	0.10
Mobile	1.81	1.83	11.75	0.02	1.84	0.48
Total:	**7.39**	**3.30**	**22.36**	**0.02**	**1.95**	**0.58**
Difference (Proposed New Facility – Existing Facility)						
Area	+3.22	+0.06	+6.63	0.00	+.01	0.00
Energy	+0.04	+0.80	+0.57	0.00	+.0.60	+0.06
Mobile	+0.86	+1.12	+7.32	+0.02	+1.34	+0.35
Difference Total:	**+4.12**	**+1.98**	**+14.49**	**+0.02**	**+1.41**	**+0.41**
SCAQMD Level A Threshold	*25*	*25*	–	–	*80*	–
SCAQMD Level B Threshold	*137*	*137*	–	–	*137*	–
Exceed SCAQMD Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: California Emissions Estimator Model (CalEEMod) version 2022.1.1.14. Refer to Appendix A for Model Data Outputs.

Notes: Emissions taken of the season, summer or winter, with the highest outputs Emission projections based on the land uses, building dimensions, and lot size identified in the Project Site Plan.
CO = Carbon Monoxide; NO_x = Nitric Oxide; $PM_{2.5}$ = Fine Particulate Matter; PM_{10} = Coarse Particulate Matter; ROG = Reactive Organic Gas; SCAQMD = South Coast Air Quality Management District; SO_2 = Sulfur Dioxide

As shown in Table 4.3-6, the Project's net emissions over the existing baseline would not exceed any SCAQMD Level A or Level B thresholds for any criteria air pollutants during operation. Additionally, the Project's operational emissions would not exceed any SCAQMD thresholds for any criteria air pollutants and therefore would not result in a violation of air quality standards. Impacts to air quality from project operations would be less than significant.

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

Less Than Significant Impact.

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 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 rural residences located northwest of the Project Site, fronting Desperado Trail.

4.3.3.3 Construction-Generated Air Contaminants for Sensitive Receptors

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of DPM, ROG, NOx, CO, and PM10 from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the NSVAB which encompasses the Project Area is designated as a nonattainment area for the state O3 standard (CARB 2022b). Thus, existing O_3 levels in the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 4.3-5, the Project would not exceed the SCAQMD regional significance thresholds for emissions.

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

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

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. PM 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. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and PM10 exhaust contains $PM_{2.5}$ exhaust as a subset. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SCAQMD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

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

4.3.3.4 Operational Air Contaminants for Sensitive Receptors

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional heavy-duty truck sources, a major source of DPM, that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

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 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 SCAQMD's 1992 Federal Attainment Plan for Carbon Monoxide (CO Plan) in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a

CO hot spot analysis as part of the 1992 CO 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, 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.

According to information provided by the Project proponent, it is assumed that the Proposed Project could result in fewer than 110 new daily trips. 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. Operational impacts to sensitive receptors would be less than significant.

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

Less Than Significant Impact.

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same

odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

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 Proposed Project does not propose any of these uses.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the Project Area. 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. Therefore, construction odors would not adversely affect a substantial number of people. Impacts with regard to odors would be less than significant.

4.3.4 Mitigation Measures

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

4.4 Biological Resources

This section is based on the analysis and recommendations presented in the Biological Resources Assessment (BRA) (ECORP 2023b, Appendix B) and Aquatic Resources Delineation (ARD) (ECORP 2023c, Appendix C) prepared for the Proposed Project.

4.4.1 Environmental Setting

The Project site is located within the Stillwater Business Park. However, only a few parcels within the business park have been developed and much of the surrounding area consists of undeveloped oak woodland and grassland in a rural setting. The Project site appeared to have been tilled/cleared between 1976 and 2006 and is currently used as cattle grazing pastureland (ECORP 2023b). Portions of the Project site appear to have been further disturbed during the construction of Venture Parkway around 2009-2010.

There are no trees or other woody vegetation onsite. The Project site consists entirely of annual grassland with the exception of Venture Parkway, which is a developed road. An ARD was performed coincident with the site visits for this assessment, and no aquatic resources were found onsite. The Project site is situated at an elevation range of 490-500 feet above mean sea level.

Surrounding land uses include undeveloped portions of the Stillwater Business Park, undeveloped oak woodlands and grassland pastures throughout, Stillwater Creek and the Redding Regional Airport to the west, the Stillwater Plains Mitigation Bank to the southeast, and scattered rural residences to the northeast.

Representative site photographs are included in Appendix B.

4.4.1.1 Vegetation Communities

There is one plant community within the Project site, annual grassland, and one land cover type: developed (Figure 4.4-1).

Annual Grassland

The annual grassland community onsite has a history of disturbance as previously described. It is currently used for cattle grazing and dominated by nonnative weedy species including ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), and broadleaf filaree (*Erodium botrys*), with scattered native species including sky lupine (*Lupinus nanus*), blue dicks (*Dipterostemon capitatus*), rusty popcorn-flower (*Plagiobothrys nothofulvus*), and pineapple weed (*Matricaria discoidea*). There are no trees or other woody vegetation in this community onsite. This vegetation community most resembles the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance as characterized by the Manual of California Vegetation (ECORP 2023b). Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in the state, do not have state rarity rankings, and are not considered Sensitive Natural Communities by California Department of Fish and Wildlife (CDFW).

A list of plants identified onsite is included in Appendix B.

Developed

The developed land cover type consists of the paved Venture Parkway and the disturbed roadsides.

4.4.1.2 Wildlife

The annual grassland community within the Project site is likely to support a variety of common wildlife species. There are no trees or aquatic habitats onsite, so wildlife use is limited. Wildlife species that could be found in this community include ground-nesting bird species such as western meadowlark (*Sturnella neglecta*) and foraging habitat for raptors such as red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Other wildlife that can be found in the annual grassland community onsite includes western yellow-bellied racer (*Coluber constrictor*), western fence lizard (*Sceloporus occidentalis*), deer mouse (*Peromyscus maniculatus*), and Botta's pocket gopher (*Thomomys bottae*). No large mammal burrows or burrow surrogates were found onsite during the site reconnaissance.

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Map Contents

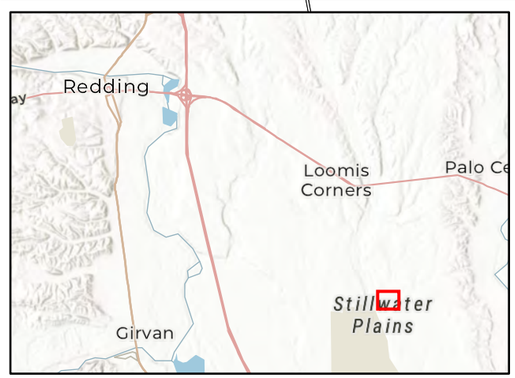
Project Site - 37.46 ac.

Landcover Type

Annual Grassland - 36.40 ac.

Developed - 1.06 ac.

Sources: Esri Imagery, Vivid Advanced, MAXAR (9/16/2022)



Location: N:\2018\2018-116.041 RESD Redding Fire Station\MAPS\Vegetation_and_LandCover\Redding Fire Vegetation and Landcover.aprx - RF_Landcover_20230609 (kturnquist - 7/12/2023)

Map Date: 7/12/2023

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 100 200

Figure 4.4-1. Vegetation Communities and Land Cover

2018-116.041 CAL FIRE SHU HQ and CNR HQ Relocation

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4.4.1.3 Soils

According to the Web Soil Survey (ECORP 2023b), two soil units, or types, have been mapped within the Project site (Figure 4.4-2). These are (MhA) Moda loam, seeped, 0 to 3 percent slopes and (RbA) Red Bluff loam, 0 to 3 percent slopes, Major Land Resource Area (MLRA) 17, moist. Both of these soil units contain hydric components; they may all contain hydric inclusions (ECORP 2023b). Moda loam, seeped, 0 to 3 percent slopes contains Modo components in drainageways, fan remnants, and stream terraces and Unnamed, Ponded components in drainageways and fan remnants. Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist contains Moda and Unnamed hydric components in fan remnants.

Moda Series

The Moda series consists of moderately deep, moderately well-drained soils that formed in alluvium from metamorphic, sedimentary, and igneous rocks. Moda soils are on fan remnants. Slopes range from 0 to 3 percent.

Red Bluff Series

The Red Bluff series consists of very deep, well-drained soils formed in old mixed alluvium. Red Bluff soils are on terraces and have 0 to 9 percent slopes.

4.4.1.4 Potential Waters of the U.S.

No aquatic features were found onsite. The BRA (Appendix B) was performed coincident with an ARD conducted according to U.S. Army Corps of Engineers (USACE) standards. The ARD is included as Appendix C.

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, there are no previously mapped aquatic resources onsite (Figure 4.4-3).

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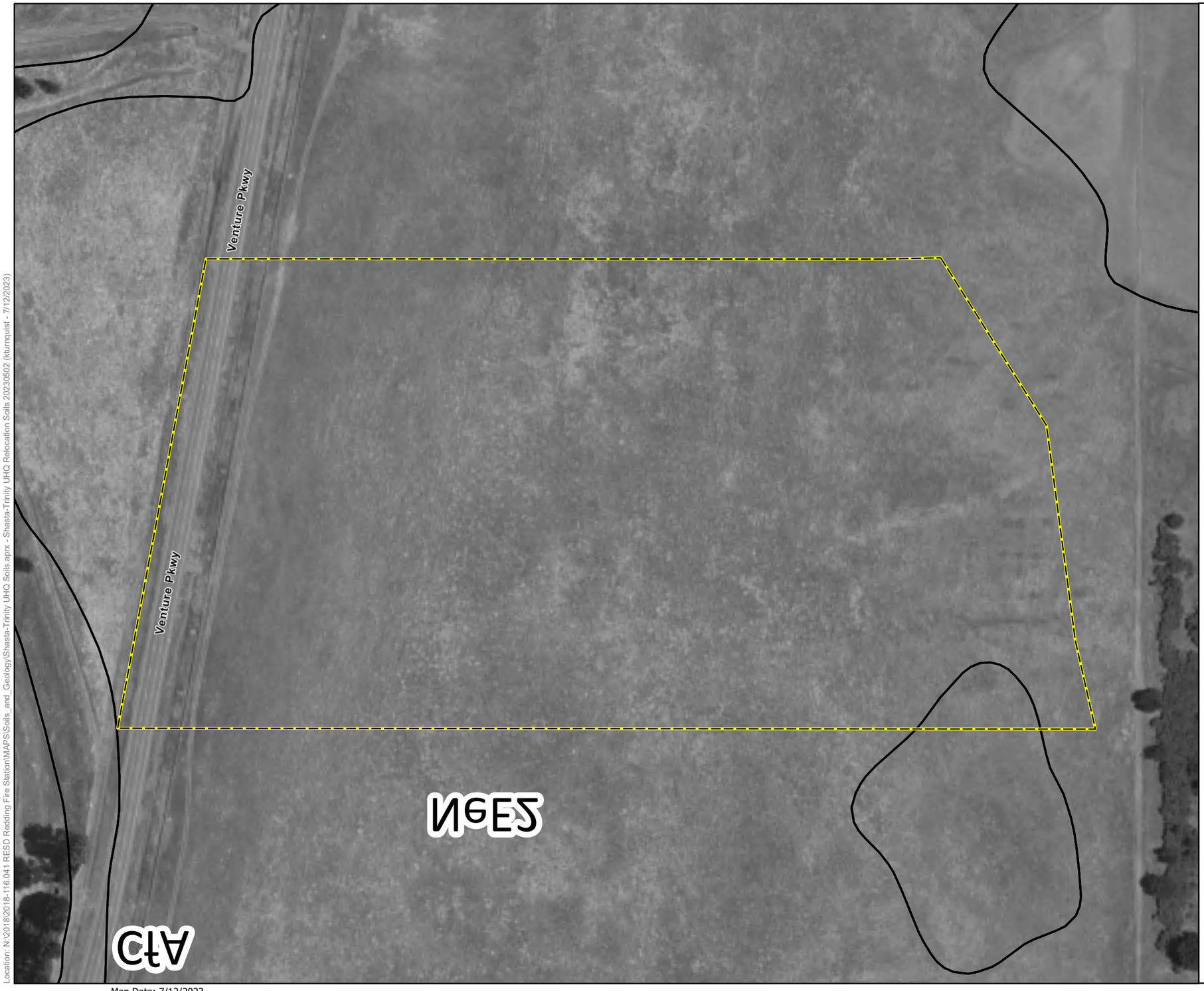

Map Features

Project Site - 37.46 ac.

Series Number - Series Name

MhA - Moda loam, seeped, 0 to 3 percent slopes

RbA - Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Shasta County, CA

Sources: NRCS Soils, NAIP 2018

Location: N:\2018\2018-116.041 RESD Redding Fire Station\MAPS\Soils_and_Geology\Shasta-Trinity UHQ Soils aprx - Shasta-Trinity UHQ Relocation Soils 20230502 (kturnquist - 7/12/2023)

Map Date: 7/12/2023

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Scale in Feet
0 200

Figure 4-2. Natural Resources Conservation Service Soil Types
2018-116.041 Shasta-Trinity UHQ Relocation

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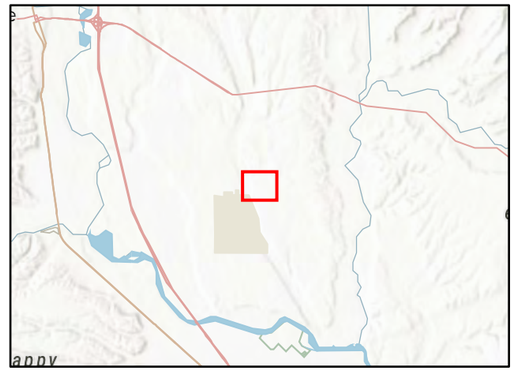
Map Contents

Project Site - 37.46 ac.

NWI Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Sources: Esri, City of Redding 2020 Imagery



Location: N:\2018\2018-116.041 RESD Redding Fire Station\MAPS\Jurisdictional_Delineation\Redding Fire UHQ Relocation Aquatic Resources.aprx - Redding Fire UHQ Relocation NWI 20230502 (kturnquist - 7/12/2023)

Map Date: 7/12/2023

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 200 400

Figure 4.4-3. National Wetlands Inventory

2018-116.041 CAL FIRE SHU HQ and CNR HQ Relocation

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4.4.1.5 Evaluation of Special-Status Species Identified in the Literature Search

There are no previously documented occurrences of special-status species on the Project site in the California Natural Diversity Database (CNDDB, ECORP 2023b). However, several special-status species occurrences have been documented within an approximate 5-mile radius of the Project site, particularly within the Stillwater Plains Mitigation Bank located less than 1 mile southeast of the Project site.

Table 4.4-1 lists all special-status plant and animal species identified through the database queries (Appendix B) and literature review. 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/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Plants					
Big–scale balsamroot *(Balsamorhiza macrolepis)*	–	–	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils. Elevation: 150'–5,100' Bloom Period: March–June	Low potential to occur. The grassland may provide marginally suitable habitat for this species.
Watershield *(Brasenia schreberi)*	–	–	2B.3	Freshwater marshes and swamps. Elevation: 100'–7,220' Bloom Period: June–September	Absent. No suitable habitat.
Sulphur Creek brodiaea (*Brodiaea matsonii*)	–	–	1B.1	Occurs within rocky, metamorphic amphibolite schist within cismontane woodland streambanks, and meadows and seeps. Elevation: 640'–722' Bloom Period: May–June	Absent. No suitable habitat.
Pink creamsacs *(Castilleja rubicundula* var. *rubicundula)*	–	–	1B.2	Serpentine substrates in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland. Elevation: 65'–2,985' Bloom Period: April–June	Absent. No suitable habitat.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Silky cryptantha (*Cryptantha crinita*)	–	–	1B.2	Gravelly streambeds of cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland, and valley and foothill grassland habitats. Elevation: 200'–3,985' Bloom Period: April–May	Absent. No suitable habitat.
Boggs Lake hedge–hyssop *(Gratiola heterosepala)*	–	CE	1B.2	Marshes, swamps, lake margins, and vernal pools. Elevation: 35'–7,790' Bloom Period: April–August	Absent. No suitable habitat.
Red Bluff dwarf rush *(Juncus leiospermus* var. *leiospermus)*	–	–	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 115'–4,100' Bloom Period: March–June	Absent. No suitable habitat. There are no aquatic resources or vernally mesic areas onsite.
Legenere *(Legenere limosa)*	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (ECORP 2023b). Elevation: 5'–2,885' Bloom Period: April–June	Absent. No suitable habitat. There are no aquatic resources or seasonally inundated areas onsite.
Bellinger's meadowfoam (*Limnanthes floccosa* ssp. *bellingeriana*)	–	–	1B.2	Mesic areas in cismontane woodland and meadows and seeps. Elevation: 950'–3,610' Bloom Period: April–June	Absent. No suitable habitat. There are no aquatic resources or mesic areas onsite.
Baker's navarretia *(Navarretia leucocephala* ssp. *bakeri)*			1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forests, meadows and seeps, and valley and foothill grasslands. Elevation: 15'–5,710' Bloom Period: April–July	Absent. No suitable habitat. There are no aquatic resources or mesic areas onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Shasta snow–wreath (*Neviusia cliftonii*)	—	–	1B.2	Cismontane woodland, lower montane coniferous forest, and riparian woodland. Elevation: 985'–1,935' Bloom Period: April–June	Absent. No suitable habitat.
Slender Orcutt grass *(Orcuttia tenuis)*	FT	CE	1B.1	Vernal pools, often gravelly. Elevation: 115'–5,775' Bloom Period: May–September	Absent. The Project Site is located within designated Critical Habitat for this species (ECORP 2023b). However, the Project site does not support suitable habitat (Physical and Biological Features or Primary Constituent Elements) for this species.
Ahart's paronychia (*Paronychia ahartii*)	–	–	1B.1	Well–drained rocky outcrops, often vernal pool edges, and volcanic upland of cismontane woodland, valley and foothill grassland, and vernal pools. Elevation: 100'–1,675' Bloom Period: February–June	Absent. No suitable rocky habitat.
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2	Shallow marshes and freshwater swamps. Elevation: 0'–2,135' Bloom Period: May–October	Absent. No suitable habitat. There are no aquatic resources onsite.
Maverick clover *(Trifolium piorkowskii)*	–	–	1B.2	Volcanic clay, openings, and often streambanks of chaparral, cismontane woodland, lower montane coniferous forest, mesic valley and foothill grasslands, and vernal pools. Elevation: 525'–2,230' Bloom Period: April–May	Absent. No suitable habitat. There are no aquatic resources or mesic areas onsite.
Shasta huckleberry *Vaccinium shastense* ssp. *shastense*	–	–	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, riparian forest, and subalpine coniferous forest. Elevation: 1,065'–4,005' Bloom Period: December–May	Absent. No suitable habitat.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Oval–leaved viburnum *(Viburnum ellipticum)*	–	–	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest communities. Elevation: 705'–4,595' Bloom Period: May–June	Absent. No suitable habitat.
Brazilian watermeal *(Wolffia brasiliensis)*	–	–	2B.3	Assorted shallow freshwater marshes and swamps. Elevation: 65'–330' Bloom Period: April–December	Absent. No suitable habitat. There are no aquatic resources onsite.
Invertebrates					
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. No suitable habitat.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April when surface water is present.	Absent. The Project Site is located within designated Critical Habitat for this species (ECORP 2023b). However, the Project site does not support suitable habitat (Physical and Biological Features or Primary Constituent Elements) for this species.
Monarch (*Danaus plexippus*)	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.	Low Potential. No suitable overwintering habitat. However, wildflowers in the annual grassland onsite may provide sources of nectar. No milkweed plants were observed onsite during the reconnaissance site visit.
Valley elderberry longhorn beetle	FT	–	–	Found exclusively on its host plant, the elderberry shrub, in riparian and oak woodland/ oak savannah	Absent. No suitable habitat.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
(*Desmocerus californicus dimorphus*)				habitats of California's Central Valley from Shasta to Madera counties.	
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. The Project site is located within designated Critical Habitat for this species (ECORP 2023b). However, the Project Site does not support suitable habitat (Physical and Biological Features or Primary Constituent Elements) for this species.
Fish					
Green sturgeon (*Acipenser medirostris*)	FT	–	SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates. Survey Period: N/A	Absent. There is no suitable aquatic habitat onsite.
Pacific lamprey (*Entosphenus tridentata*)	–	–	SSC	Anadromous; undammed streams rivers, streams, and creeks with gravel spawning substrates. Survey Period: N/A	Absent. There is no suitable aquatic habitat onsite.
Steelhead (CA Central Valley Distinct Population Segment) (*Oncorhynchus mykiss irideus*)	FT	–	–	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable aquatic habitat onsite.
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT	CT	–	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable aquatic habitat onsite.
Chinook salmon (Sacramento River winter-run ESU) *(Oncorhynchus tshawytscha)*	FE	CE	–	Undammed reaches of the mainstem and tributaries to the Sacramento River downstream of Shasta Reservoir. Survey Period: N/A	Absent. There is no suitable aquatic habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Amphibians					
Foothill yellow-legged frog Northwest/North Coast Clade (*Rana boylii*)	–	–	SSC	Partly shaded shallow streams and riffles in variety of habitats. Needs cobble-sized substrate for egg-laying and at least 15 weeks of permanent water to attain metamorphosis. Can be active all year in warmer locations; become inactive or hibernate in colder climates. Northern Coast Ranges, Klamath Mountains and Cascade Range. Survey Period: May–October.	Absent. No suitable habitat.
Western spadefoot (*Spea hammondii*)	–	–	SSC	California endemic species of vernal pools, swales, and seasonal wetlands in grassland, scrub and woodland habitats throughout the Central Valley and South Coast Ranges. Prefers open areas with sandy or gravelly soils. Survey Period: Winter-Spring.	Low potential to occur. No suitable habitat onsite, but some very nearby. CNDDB records within 5 miles.
Reptiles					
Northwestern pond turtle (*Actinemys marmorata*)	–	–	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. Survey Period: April-September	Low potential to occur. Suitable aquatic habitat within 0.5 mile of Project site. Nesting turtles could potentially be found within Project Site.
Birds					
Golden eagle (*Aquila chrysaetos*)	–	–	CFP, CDFW WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff	Low Potential-There is no suitable nesting habitat onsite but the annual grassland represents potential foraging habitat.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
				ledges, river banks, trees, and human-made structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. Nesting: February-August Wintering in Central Valley: October-February	
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands. Nesting: February-September Wintering: October-March	Absent. There is no suitable nesting or foraging habitat onsite.
Ferruginous hawk (*Buteo regalis*)	–	–	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas. Wintering: September-March	Potential. There is no suitable nesting habitat but the annual grassland onsite represents suitable foraging habitat.
Northern spotted owl *(Strix occidentalis caurina)*	FT	CT	–	Found from Marin County through coastal ranges north to British Columbia; breeds in old growth mature forest. They use forests with greater complexity and structure. Nesting: March-June	Absent. There is no suitable nesting or foraging habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Nuttall's woodpecker *(Dryobates nuttallii)*	–	–	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands. Nesting: April-July	Absent. There is no suitable nesting habitat onsite.
Yellow-billed magpie (*Pica nuttallii*)	–	–	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	Absent-There is no suitable nesting habitat onsite.
Oak titmouse (*Baeolophus inornatus*)	–	–	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	Absent. There is no suitable nesting habitat onsite.
Bank swallow (*Riparia riparia*)	–	CT	–	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California. Nesting: May-July	Absent. There is no suitable nesting habitat onsite.
Purple martin (*Progne subis*)	–	–	SSC	In California, breeds along coast range, Cascade-northern Sierra Nevada region and isolated population in Sacramento. Nesting habitat includes montane forests, Pacific	Absent. There is no suitable nesting habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
				lowlands with dead snags; the isolated Sacramento population nests in weep holes under elevated highways/bridges. Winters in South America. Nesting: May-August	
Wrentit (*Chamaea fasciata*)	–	–	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens. Nesting: March-August	Absent. There is no suitable nesting habitat onsite.
California thrasher (*Toxostoma redivivum*)	–	–	BCC	Resident and endemic to coastal and Sierra Nevada-Cascade foothill areas of California. Nests are usually well hidden in dense shrubs, including scrub oak, California lilac, and chamise. Nesting: February-July	Absent. There is no suitable nesting habitat onsite.
Grasshopper sparrow (*Ammodramus savannarum*)	–	–	BCC, SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental. Nesting: May-August	Potential. The annual grassland onsite represents potential nesting habitat.
Belding's savannah sparrow	–	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh.	Absent. There is no suitable nesting habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
(*Passerculus sandwichensis beldingi*)				Year-round resident; nests March-August	
Tricolored blackbird (*Agelaius tricolor*)	–	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. (ECORP 2023b) Nesting: March-August	Potential. There is no suitable nesting habitat onsite but the annual grassland onsite represents potential foraging habitat.
Bullock's oriole (*Icterus bullockii*)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	Absent. There is no suitable nesting habitat onsite.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	–	–	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July	Absent. There is no suitable nesting habitat onsite.
Mammals					
Pallid bat *(Antrozous pallidus)*	–	–	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human occupied as well as	Absent. There is no potential roosting habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
				vacant buildings (WBWG 2023). Survey Period: April-September	
Townsend's big-eared bat *(Corynorhinus townsendii)*	–	–	SSC	Caves, mines, buildings, rock crevices, trees. Survey Period: April-September	Absent. There is no potential roosting habitat onsite.
Spotted bat *(Euderma maculatum)*	–	–	SSC	Roost in cracks, crevices, and caves, usually high in fractured rock cliffs. Found in desert, sub-alpine meadows, desert-scrub, pinyon-juniper woodland, ponderosa pine, mixed conifer forest, canyon bottoms, rims of cliffs, riparian areas, fields, and open pastures (WBWG 2023). Survey Period: April-September	Absent. There is no potential roosting habitat onsite.
Western red bat (*Lasiurus blossevillii*)	–	–	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). Survey Period: April-September	Absent. There is no potential roosting habitat onsite.
Western red bat (*Lasiurus blossevillii*)	–	–	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,	Absent. There is no potential roosting habitat onsite.

Table 4.4-1. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
				cottonwoods, and sycamores) (WBWG 2023). Survey Period: April-September	

Status Codes:

ESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	ESA listed, Endangered
FT	ESA listed, Threatened
FC	Candidate for ESA listing as Threatened or Endangered
BCC	USFWS Bird of Conservation Concern
CE	CESA- or NPPA listed, Endangered
CT	CESA- or NPPA-listed, Threatened
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5050-reptiles/amphibians)
SSC	CDFW Species of Special Concern
CDFW WL	CDFW Watch List
1B	California Rare Plant Rank/Rare or Endangered in California and elsewhere
2B	CRPR/Plants rare, threatened, or endangered in California but more common elsewhere
0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted

Note: CNDDB = California Natural Diversity Database; ESU = Evolutionarily Significant Unit; N/A = Not Applicable; NPPA = Native Plant Protection Act; WBWG = Western Bat Working Group

4.4.1.6 Special-Status Plants

Eighteen special-status plant species were identified through the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, 17 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. A brief description of the remaining species with potential to occur at the Project site is presented below.

The Project site is located within USFWS-designated Critical Habitat for slender Orcutt grass (*Orcuttia tenuis*). However, the Project site does not support the primary constituent elements required for the species, which are (ECORP 2023b):

- Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the

depressional features including swales connecting the pools, providing for dispersal and promoting hydroperiods of adequate length in the pools; and

- Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and nonnative upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.

Big-Scale Balsamroot

Big-scale balsamroot (*Balsamorhiza macrolepis*) is not listed pursuant to either the federal or California ESAs, but is designated as a California Rare Plant Rank (CRPR) 1B.2 species. This species is an herbaceous perennial that occurs in chaparral, cismontane woodlands, valley and foothill grassland, and sometimes on serpentinite soils. Big-scale balsamroot blooms from March through June and is known to occur at elevations ranging from 150 to 5,100 feet above mean sea level. Big-scale balsamroot is endemic to California; the current range of this species includes Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne counties (ECORP 2023b).

There are no previously reported occurrences of this species within 5 miles of the Project site (ECORP 2023b). However, the annual grassland present at the Project site provides marginally suitable habitat for this species. Big-scale balsamroot has low potential to occur onsite.

4.4.1.7 Special-Status Wildlife

Invertebrates

Five special-status invertebrate species were identified through 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. A brief description of the remaining species that have the potential to occur at the Project site is presented below.

The Project site is located within USFWS-designated Critical Habitat for vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*). However, the Project site does not support the primary constituent elements required for these species, which are (ECORP 2023b):

- Topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pool, providing for dispersal and promoting hydroperiods of adequate length in the pools;

- Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 18 days, for vernal pool fairy shrimp or 41 days, for vernal pool tadpole shrimp, in all but the driest years; thereby providing adequate water for incubation, maturation, and reproduction. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands;
- Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding; and
- Structure within the pools consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

Monarch

The monarch (*Danaus plexippus*) is a candidate for listing under the federal Endangered Species Act (ESA). This butterfly occurs throughout a variety of habitats and requires blooming nectar resources for adults to feed on during breeding and migration, and is dependent on 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 nine to 18 days, feeding on milkweed and sequestering toxic cardenolides as a defense against predators. The larvae then pupate into chrysalis before emerging 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 2 to 5 weeks. Overwintering adults enter into reproductive diapause and live six to nine months (ECORP 2023b).

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 2023b).

Monarchs have not been documented within 5 miles of the Project site in the CNDDB (ECORP 2023b). There is no overwintering habitat, and no milkweed plants were found onsite during the initial site reconnaissance. However, the wildflowers scattered throughout the annual grassland onsite could provide a nectar source for dispersing individuals. Monarch has low potential to occur onsite.

Fish

Five special-status fish species were identified through 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 aquatic habitat. No further discussion of these species is provided in this analysis.

Amphibians

Two special-status amphibian species were identified through 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 has the potential to occur at the Project site is presented below.

Western Spadefoot

The western spadefoot (*Spea hammondii*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a CDFW Species of Special Concern (SSC). Necessary habitat components of the western spadefoot include loose, friable soils in which to burrow in upland habitats and breeding ponds. Breeding sites include temporary rain pools, such as vernal pools and seasonal wetlands, or pools within portions of intermittent drainages (ECORP 2023b). Spadefoots spend most of their adult life within underground burrows or other suitable refugia, such as rodent burrows. In California, western spadefoot toads are known to occur from the Redding area in Shasta County southward to northwestern Baja California, at elevations below 4,475 feet (ECORP 2023b).

Six occurrences of western spadefoot have been documented within 5 miles of the Project site, including one approximately 0.2 mile southeast of the Project site at the Stillwater Plains Mitigation Bank (ECORP 2023b). There is no suitable aquatic habitat onsite, but the annual grassland at the Project site represents potentially suitable upland dispersal and aestivation habitat for this species. Western spadefoot have low potential to occur onsite due to the absence of aquatic habitat and history of ground disturbance onsite.

Reptiles

One special-status reptile species was identified through the database queries and literature review: the northwestern pond turtle (*Actinemys marmorata*) (Table 4-1). A brief description of this species is presented below.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is considered an SSC by CDFW. The range of the northwestern pond turtle in California extends from the Oregon border southward to the Stockton area in the Central Valley, and the western slope of the Sierra-Cascade (ECORP 2023b). 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 (ECORP 2023b). However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats (ECORP 2023b). Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation (ECORP 2023b). Nesting sites for northwestern pond turtles are typically located in annual grasslands adjacent to a watercourse with little slope and hard, dry soil (ECORP 2023b). Nesting habitat soils typically

display high clay or silt fraction, with few nests located in sandy soils. Nests are usually within 400 meters of a watercourse, with the majority being within 50 meters of the water's edge (ECORP 2023b).

One occurrence of northwestern pond turtle has been documented within 5 miles of the Project site (ECORP 2023b). There is no suitable aquatic habitat onsite, but the annual grassland at the Project site represents potentially suitable upland dispersal and nesting habitat for this species. Northwestern pond turtle has low potential to occur onsite due to the absence of aquatic habitat and history of ground disturbance onsite.

Birds

Sixteen special-status bird species were identified through the database queries and literature review (Table 4.4-1). However, upon further analysis and after the site visit, 12 species were determined to be absent from the Project site due to the lack of suitable nesting habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining four species that have the potential to occur at the Project site are presented below.

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is not listed pursuant to either the California or federal ESAs. However, it is fully protected according to Section 3511 of the Fish and Game Code of California and the federal Bald and Golden Eagle Protection Act, and is a CDFW Watch List species. Golden eagles generally nest on cliff ledges and/or large lone trees in rolling to mountainous terrain. Golden eagles nest throughout California except the flat portions of the Central Valley, the immediate coast, and portions of southeastern California (ECORP 2023b). Occurrences within the Central Valley are usually dispersing post-breeding birds, nonbreeding subadults, or migrants. Foraging habitat includes open grassland and savannah. Nesting occurs during February through August.

There are no CNDDB occurrences documented within 5 miles of the Project site (ECORP 2023b). There is no suitable nesting habitat present, but the annual grassland onsite represents foraging habitat. The frequency of occurrence in the region of the Project site is likely diminished due to the fragmented nature of open grassland and presence of development in close proximity. Golden eagle has low potential to forage onsite.

Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) are not listed pursuant to either the California or federal ESAs. However, they are a CDFW Watch List species and USFWS Bird of Conservation Concern (BCC). This species typically occurs in open environments and nests from Oregon to Canada, though nesting has been documented in Lassen County, California (ECORP 2023b). For the remainder of the state, including the Central Valley, ferruginous hawk occurrences are restricted to the nonbreeding season (approximately September through March) (ECORP 2023b). Wintering habitat includes a variety of open communities including annual grasslands, agricultural areas, deserts, and savannahs, where there is an abundance of ground squirrels, prairie dogs, lagomorphs, or pocket gophers (ECORP 2023b).

There are no CNDDB occurrences of this species within 5 miles of the Project site (ECORP 2023b), and the species is not expected to nest in the region. However, the annual grassland onsite represents potentially suitable winter foraging habitat. Ferruginous hawks have potential to occur onsite.

Grasshopper Sparrow

The grasshopper sparrow (*Ammodramus savannarum*) is not listed pursuant to either the California or federal ESAs, but it is designated as an SSC by the CDFW. The grasshopper sparrow is an uncommon and local summer resident and breeder along the western edge of the Sierra Nevada and most coastal counties south to Baja California (ECORP 2023b). This species generally inhabits moderately open grasslands and prairies with patchy bare ground and scattered shrubs (ECORP 2023b). Grasshopper sparrows are more likely to occupy large tracts of habitat than small fragments (ECORP 2023b). Breeding generally occurs from early May through August.

There are no CNDDB occurrences of this species within 5 miles of the Project site (ECORP 2023b). However, the annual grassland onsite represents potentially suitable nesting habitat. Grasshopper sparrows have potential to nest onsite.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) was granted emergency listing for protection under the California ESA 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 BCC and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (ECORP 2023b). 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. Tricolored blackbird 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 (ECORP 2023b). 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 2023b). The nesting season is generally from March through August.

There are four CNDDB occurrences of this species within 5 miles of the Project site (ECORP 2023b). However, there is no suitable nesting habitat present at the Project Site. The annual grassland onsite represents potentially suitable foraging habitat. Tricolored blackbird has potential to forage but not nest onsite.

Mammals

Five special-status mammal species were identified through 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.

4.4.1.8 Wildlife Movement Corridors

Historic disturbances onsite have resulted in the absence of trees and woodlands, and may have contributed to the absence of aquatic habitat. Consequently, the Project site does not represent a significant wildlife movement corridor. No potential nursery sites (e.g., deer fawning grounds, waterbird rookeries) were observed onsite during the site reconnaissance and none are expected to be present. The Project Site is not located in an Essential Habitat Connectivity area (ECORP 2023b).

4.4.2 Regulatory Setting

4.4.2.1 Federal Regulations

Federal Endangered Species Act

The ESA protects plants and animals that are listed as endangered or threatened by the USFWS or the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its Critical Habitat. Through consultation and the issuance of a Biological Opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a Habitat Conservation Plan (HCP) is developed.

Section 7

Section 7 of ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify Critical Habitat for listed species. The adverse modifications will require formal consultation with USFWS or NMFS if direct and/or indirect effects will occur to Critical Habitat that appreciably diminish the value of Critical Habitat for both the survival and recovery of a species. The applicant must conduct a Biological Assessment (BA) for the purpose of analyzing the potential effects of the project on listed species and Critical Habitat to establish and justify an "effect determination." if adverse effects are likely. The federal agency reviews the BA and prepares a BO if it concludes that a project may adversely affect a listed species or its habitat. The BO may recommend *reasonable and prudent alternatives* to the project to avoid jeopardizing or adversely modifying habitat.

Critical Habitat and Essential Habitat

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

- Space for individual and population growth and for normal behavior
- Food, water, air, light, minerals, or other nutritional or physiological requirements
- Cover or shelter
- Sites for breeding, reproduction, or rearing (or development) of offspring
- Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species

Excluded essential habitat is defined as areas that were found to be essential habitat for the survival of a species and assumed to contain at least one of the primary constituent elements for the species but were excluded from the Critical Habitat designation. The USFWS has stated that any action within the excluded essential habitat that triggers a federal nexus will be required to undergo the Section 7(a)(1) process, and the species covered under the specific Critical Habitat designation would be afforded protection under Section 7(a)(2) of ESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be

found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of migratory birds in Section 3513 of the California Fish and Game Code.

Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the USACE. The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The USEPA also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

4.4.2.2 State or Local Regulations

California Fish and Game Code

California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful development projects. Project proponents are required to apply for an Incidental Take Permit from the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat.

Fully Protected Species

The state of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered

under the state and/or federal ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

Native Plant Protection Act

The NPPA of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code §§ 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code §§ 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

Protected Birds

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protects birds. Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits the take, possession, or destruction of any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the federal MBTA, serve to protect birds and their nests. Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations.

California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires that a notification of streambed alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, issues a Streambed Alteration Agreement (SAA) describing the mutually agreed upon measures to protect affected fish and wildlife resources. Projects that require an SAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the SAA frequently overlap in these instances.

Species of Special Concern

SSC are defined by the CDFW as species, subspecies, or distinct populations of animals native to California that are not legally protected under the federal ESA, the California ESA or the California Fish and Game Code, but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.

- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- SSC are typically associated with threatened habitats. Project-related impacts to SSC, state threatened or endangered species are considered significant under CEQA.

California Rare Plant Ranks

The California Native Plant Society (CNPS) maintains the Inventory of Rare and Endangered Plants of California (CNPS 2023), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere
- Rare Plant Rank 3 – a review list of plants about which more information is needed
- Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent of occurrences threatened / moderate degree and immediacy of threat)

- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2023). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the NPDES, including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirement for these activities.

California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant, and are particularly relevant to SSC. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant and require lead agencies to thoroughly analyze and evaluate the impacts. Assessment of "impact significance" to populations of nonlisted species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded

Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if a project would:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

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?	☐	☒	☐	☐

Less Than Significant With Mitigation Incorporated.

No special-status species are known to occur within the Project site; however, focused plant and wildlife surveys have not been conducted. Multiple special-status species, including one state-listed species, have potential to occur within the Project site (Table 4.4-1). These include big-scale balsamroot, monarch, western spadefoot, northwestern pond turtle, golden eagle, ferruginous hawk, grasshopper sparrow, and tricolored blackbird. Vegetation removal, grading, and other ground-disturbing activities associated with construction implementation has potential to impact these species. The Proposed Project may potentially have a substantial adverse effect on special-status species, either directly or through habitat modifications. Implementation of Mitigation Measures BIO-1 through BIO-4 would avoid or minimize potential effects to special-status species to less than significant.

Monarch may infrequently forage on scattered wildflowers within the annual grassland community onsite. Further, there is no overwintering habitat onsite and no known overwintering sites in the immediate vicinity, and no milkweed plants were found onsite during the initial site reconnaissance. Potential impacts to Monarch are considered less than significant because there is no overwintering or breeding habitat onsite.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

No Impact.

There are no sensitive natural communities or riparian habitat within the Project site. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

No Impact.

There are no aquatic resources or potential Waters of the U.S. or State present onsite. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

Less Than Significant With Mitigation Incorporated.

The Project site does not represent a significant wildlife movement corridor. There are no known nursery sites within the Project site. However, the Project site includes potential breeding habitat for multiple bird species. Implementation of Mitigation Measure BIO-4 would avoid or minimize potential effects to breeding birds to less than significant.

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

No Impact.

There are no trees present and the Proposed Project would not conflict with local policies or ordinances. No impact would occur.

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

No Impact.

The Proposed Project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan area. No impact would occur.

4.4.4 Mitigation Measures

BIO-1: Focused Special-Status Plant Surveys

- Perform focused special-status plant surveys of the Project site according to CDFW, CNPS, and USFWS protocols (ECORP 2023b). 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 if special-status plant species are found within the Project site and avoidance of the species is not possible.

BIO-2: Northwestern Pond Turtle Preconstruction Survey. The Project site does not support aquatic habitat for northwestern pond turtles. However, there is potentially suitable aquatic habitat in close proximity, and the annual grassland onsite represents potentially suitable upland nesting and dispersal habitat. The following measures are recommended to avoid or minimize potential impacts to northwestern pond turtles.

- Perform preconstruction surveys for northwestern pond turtles within the limits of construction to detect adults, within 48 hours prior to the start of construction. Relocate to suitable habitat in consultation with CDFW if individuals are found.
- No further measures pertaining to this species are necessary if no northwestern pond turtles are found.

BIO-3: Western Spadefoot Preconstruction Survey. The Project site does not support ephemeral wetland features that western spadefoot require for breeding. However, the Project site is in close proximity to known western spadefoot occurrences, and the annual grassland onsite represents potentially suitable upland aestivation and dispersal habitat. The following measures are recommended to avoid or minimize potential impacts to western spadefoot.

- Perform preconstruction surveys for western spadefoot within the limits of construction to detect adults, within 14 days prior to the start of construction. Relocate to suitable habitat, in consultation with CDFW if adults are found,
- No further measures pertaining to this species are necessary if no western spadefoot are found.

BIO-4: Special-Status Bird and Migratory Bird Treaty Act Protected Birds (Including Raptors) Preconstruction Surveys. Suitable nesting and/or wintering and foraging habitat for several

special-status birds is present within the Project site. These include golden eagle, ferruginous hawk, grasshopper sparrow, and tricolored blackbird. If present, the Project could result in harassment to nesting individuals or temporary disruption of 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, the following measures are recommended to avoid or minimize potential impacts to protected birds, their eggs, and nests:

- Conduct a preconstruction nesting bird survey of all suitable habitats within and surrounding the Project site within 14 days prior to the commencement of construction during the nesting season (February 1 through August 31).
- The preconstruction nesting bird survey shall be conducted in all accessible areas within 0.25 mile of the Project site for raptors and within 100 feet for other special-status birds and birds protected under the MBTA.
- 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.

4.5 Cultural Resources

ECORP prepared an Archaeological Resources Inventory Report (ECORP 2023d, Appendix D) for the Proposed Project in July 2023 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. Cultural resources include prehistoric archaeological sites, historic archaeological sites, and historic structures, and generally consist of artifacts, food waste, structures, and facilities made by people in the past. Prehistoric archaeological sites are places that contain the material remains of activities carried out by the native population of the area (i.e., Native Americans) prior to the arrival of Europeans in Southern California. Places that contain the material remains of activities carried out by people during the period when written records were produced after the arrival of Europeans are considered historic archaeological sites. Historic structures include houses, garages, barns, commercial structures, industrial facilities, community buildings, and other structures and facilities that are more than 50 years old. Historic structures may also have associated archaeological deposits, such as abandoned wells, cellars, privies, refuse deposits, and foundations of former outbuildings.

The information provided below is an abridged version of the Cultural Resources Inventory and Architectural History Evaluation Report and is included here to provide a brief context of the potential cultural resources in the Project Area. Due to the sensitive nature of cultural resources and their records and documentation, which are restricted from public distribution by state and federal law, the IS/MND appendices do not include the cultural resources report; however, all pertinent information necessary for impact determinations is included in this section. A redacted version of the cultural resources report that

does not include site records or locations may be obtained by contacting the California Department of General Services.

4.5.1 Environmental Setting

The Project Area is in the northern Sacramento Valley in southern Shasta County. The surrounding land is characterized by rolling foothills and grasslands. Stillwater Creek flows southward and is located west of the Project Area, on the other side of Venture Parkway. The land surrounding the Project Area to the north, east, and south comprises open, grassy fields. Residential and commercial development is located west of the Project Area. The elevations within the Project Area range from 490 to 506 feet above mean seal level. Redding Airport is located southwest of the Project Area.

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 6,000 years BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found but cannot definitely be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and vegetal foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods.

The Project Area is in the unceded territory of the Wintu tribe. Wintu territory encompassed portions of present-day Trinity, Tehama, Shasta, and Siskiyou counties. The territory is bounded in the southeast by the South Fork Trinity River, in the southwest by Beegum and Little Cow Creeks, and in the north by Mount Shasta. Prior to the contact of European, the Wintu population estimated to have been over 14,000. A malaria epidemic swept through the Central and Upper Sacramento Valley in 1830-1833 and it took the lives of 75 percent of the population. As settlers moved into the region, the Wintu 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 Wintu population, and by 1910 the Wintu population is estimated to have been 395. In the 20th century, dams were constructed, dispersing the last large concentrations of Wintu as much of their habitable land was inundated. The Wintu population in 1971 is estimated to have reached 900. Today, the descendants of the Wintu are members of Redding Rancheria, Winnemum Wintu Tribe, and Wintu Tribe of Northern California.

The first Viceroy of New Spain, Antonio de Mendoza, commissioned maritime explorer Hernando de Alarcón to chart the Gulf of California and Colorado River in 1540. Alarcón and his crew became the first Europeans to reach Alta (Upper) California when they set foot on the banks of the Colorado River in what is now Imperial County. In 1542, Juan Rodriguez Cabrillo sailed north up the Pacific coast from Mexico in search of the Strait of Anián. Cabrillo and his crew, the first Europeans to explore the Alta California coast, visited San Diego Bay, Santa Catalina Island, and San Pedro Bay, and may have reached as far north as Point Reyes. In 1579, the English privateer Francis Drake visited Miwok villages north of San Francisco Bay. Sebastian Vizcaíno, sailing north from Mexico, charted Monterey Bay in 1602 (ECORP 2023d).

Although Russian and Spanish explorers were said to have travelled through the area as early as 1815, the earliest documented European American presence in the area was related to fur trapping by the Hudson's Bay Company. Seeking beaver pelts, which commanded top dollar, the trappers established and mapped the first Euro-American trails into Shasta County (Smith 2009). Among these were Peter Skene Ogden (who is believed to have named Mount Shasta) and Jedediah Strong Smith, who travelled up the Sacramento Valley and into Oregon, via the Pacific Coast, in 1827 and 1828. They were followed by an influx of miners, responding to the discovery of gold at Sutter's Mill in 1848.

European American settlement in the northern Sacramento Valley began in large part with the acquisition and development of Rancho Buenaventura. Mexican Governor Manuel Micheltorena gave this land grant to Major Person Barton Reading in 1844, who received a patent for the land from the U.S. government by 1854. Rancho Buenaventura encompassed six square leagues of land on both sides of the Sacramento River from north of downtown Redding to south of Anderson (ECORP 2023d).

The Gold Rush of the late 1840s and 1850s created a surge of miners working the rivers and creeks in Shasta County. Although mining was primarily conducted several miles west of the Project Area, one of the main routes the immigrants traveled to get to the mining areas near the Sacramento Valley was the Noble's Trail. The present day Highway 44 (located approximately 46 miles east of the Project Area) essentially follows the Noble's Trail, intersecting several historic towns such as Viola, Shingletown and Millville (ECORP 2023d). At the end of the Gold Rush, most miners took up ranching, farming, or other trades in the valley areas, with very few settling the forested areas or higher elevations.

Major Person Barton Reading was a decorated member of the military, having participated in the Bear Flag Revolt in 1846, and gaining the rank of Major while enlisted in Fremont's Battalion in the late 1840s. He was also a skilled rancher and a well-traveled gold miner. He worked in Captain John Sutter's employ before taking over Rancho Buenaventura and was among the first to visit Coloma after James Marshal's gold discovery at Sutter's Mill (Kyle 2002). The gold discovery marked a turning point for him, and he established a gold mine just north of Clear Creek. He named the area Reading Springs, and by 1849 it became a permanent site for miners, and subsequently became the Gold Rush boom town of Shasta (ECORP 2023d).

The Homestead Act of 1862 and the arrival of the Central Pacific Railroad in Redding in 1872 led to a population boom in Shasta County. The Homestead Act gave away 160-acres of land at a time to any individual over the age of 21 who was head of household and could pay the $12 processing fee. The vagueness of the wording allowed many women and immigrants to file land claims during this time (ECORP 2023d). The expansion of the railroads was correlated with the migration spurred by this act. A land agent of the Southern Pacific Railroad named Benjamin B. Redding decided to make a rail stop there, and in 1872 the tracks were routed through the area and the town was born (ECORP 2023d).

Benjamin Bernard Redding was born in Canada in 1824 and sailed to California in 1849 to make his fortune in the Gold Rush. He earned quite a diverse skillset, doing mining, clerical work, and editing. He was elected to the California State Assembly from 1853-54, and elected Mayor of Sacramento in 1856. He also served as Secretary of State from 1863 to 1867. He became the first land agent for the Central Pacific Railroad in 1868 and bought the original property so the railroad could be built. The area six miles east of

Shasta, known at the time as Poverty Flats, was selected to be the northern terminus of the railroad in 1872. People named the town Redding in honor of their land agent (ECORP 2023d).

In 1874, the local legislature moved to change the spelling of the town's name to Reading to honor Pierson B. Reading as founder of the Shasta community. The railroad, however, refused to recognize the name change, and as a result there was a lot of confusion over the official spelling of the town's name. By 1880, the name was officially changed to Redding (ECORP 2023d). It became the County Seat in 1888 and it was moved from Shasta after the decline of the mining industry (Gu ECORP 2023d).

From its early beginnings, mineral extraction was one of Redding's principal industries. Other than simply the gold that spurred California's exponential growth in the 1850s, copper and iron were also mined heavily in the mountains surrounding Redding (ECORP 2023d); however, these industries also produced heavy pollution that damaged local agriculture. Their decline after the turn of the twentieth century led to a drop in Redding's population. The population recovered with a boom in the 1930s spurred by the construction of Shasta Dam, 19 miles north of the Project Area. The dam project also spurred the development of nearby commuter towns of Central Valley, Summit City, and Project City, which are now known under the name Shasta Lake City. Growth through the 1950s was largely spurred by post-war demand for lumber production, which remains one of Redding's principal industries today (ECORP 2023d).

4.5.1.1 Cultural Resources Analysis

ECORP requested a records search for the Project Area at the Northeast Information Center (NEIC) of the California Historic Resources Information Center (CHRIS) at California State University, Chico on May 1, 2023 (NEIC search # NE23-199; Appendix D). 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 Area, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NEIC staff completed and returned the records search to ECORP on May 7, 2023.

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (BLM 2022). Maps reviewed include:

- 1855 BLM GLO Plat map for Township 31 North, Range 4 West;
- 1885 BLM GLO Plat map for Township 31 North, Range 4 West;
- 1890 U.S. Geological Survey (USGS) Red Bluff, California topographic quadrangle map (1:250,000 scale);
- 1894 USGS Red Bluff, California topographic quadrangle map (1:250,000 scale);
- 1901 USGS Redding, California topographic quadrangle map (1:125,000 scale);
- 1944 Redding, California topographic quadrangle map (1:62,500 scale);
- 1957 Enterprise, California topographic quadrangle map (1:24,000 scale); and
- 1957 (photorevised 1969) Enterprise, California topographic quadrangle map (1:24,000 scale).

ECORP reviewed aerial photographs taken in 1943, 1951, 1955, 1963, 1969, 1983, 1998, 2005, 2009, 2010, and from 2011 to 2020 for any indications of property usage and built environment.

ECORP emailed a letter to the Shasta County Historical Society on May 1, 2023, to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

Additionally, ECORP subjected the Project Area to an intensive pedestrian survey on May 16, 2023, under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* using 15-meter transects. ECORP examined the ground surface for indications of surface or subsurface cultural resources and inspected the general morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

4.5.2 Regulatory Setting

4.5.2.1 Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires that the federal government list significant historic resources on the National Register of Historic Places (NRHP), which is the nation's master inventory of known historic resources. The NRHP is administered by the NPS and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects more than 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a historic district can also be included in the NRHP. The criteria for listing in the NRHP include resources that:

a) are associated with events that have made a significant contribution to the broad patterns of history;

b) are associated with the lives of persons significant in our past;

c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) have yielded or may likely yield information important in prehistory or history.

4.5.2.2 State

California Register of Historical Resources

The State Historical Resources Commission designed the California Register of Historical Resources (CRHR) for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. This program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under CEQA.

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to PRC § 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (PRC § 21084.1). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC § 5024.1).
- A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1), including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

    b) Is associated with the lives of persons important in our past;

c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

d) Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC § 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC § 5024.1(g)) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC §§ 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the CRHR, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC § 5024.1 and 14 CCR § 4850).

CEQA also requires lead agencies to determine if a proposed project would have a significant effect on unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources.

"Unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR Section 15064[c][4]).

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

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

Less Than Significant With Mitigation Incorporated.

There are no known historical resources in the Project Area; however, there is always the potential that ground-disturbing activities associated with the Project will expose previously unknown cultural resources. Therefore, implementation of Mitigation Measure CUL-1 has been included to reduce the potential impact to historical resources to less than significant.

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

Less Than Significant With Mitigation Incorporated.

The Project Area was investigated by a professional archaeologist. No archaeological sites were identified in the Project Area. The records search from the Northeastern Information Center one historic-era bridge approximately 0.4-mile northwest of the Project Area. While there is increased preservation for archaeological deposits in alluvium, the underlying geology of the area consists of Pliocene-Pleistocene-aged rocks and soils that predate the time of human occupation in the area. The older soils suggest that Stillwater Creek may be eroding the land on the western edge of the Project Area. Therefore, the Project Area has a low likelihood of containing intact buried pre-contact resources and buried disturbed pre-contact resources.

There are no known archaeological resources in the Project Area; however, there is always the potential that ground-disturbing activities associated with the Project will expose previously unknown archaeological resources. Therefore, implementation of Mitigation Measure CUL-1 has been included to reduce potential impacts to archaeological resources to less than significant.

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

Less Than Significant With Mitigation Incorporated.

No human remains have been identified in or within 0.5-mile of the Project Area; however, there is always the potential that ground-disturbing Project activity could result in the inadvertent disturbance of currently undiscovered burial sites or human remains. Therefore, implementation of Mitigation Measure CUL-2 has been included to reduce potential impacts to less than significant.

4.5.4 Mitigation Measures

CUL-1: **Inadvertent Discovery.** The following mitigation measures are intended to address the evaluation and treatment of inadvertent/unanticipated discoveries of potential tribal cultural resources (TCRs), archaeological, or cultural resources during the project's ground disturbing activities.

- If any subsurface deposits are encountered during ground disturbing activities that are believed to be cultural or human in origin, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, 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:
  1. If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
  2. If the professional archaeologist determines 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 by CEQA or a historic property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the resource 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.
  3. If the find is pre-contact in nature, then a Tribal Representative from a Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified. In this case, mitigation measure TCR-1 shall be followed.

CUL-2: **Human Remains.** In the event of discovery of human remains, whether intact, fragmentary, or displaced from their original context, the Shasta County Coroner and the Native American Heritage Commission (NAHC), West Sacramento (916-373-3710), shall be notified of the discovery immediately, and all work in the vicinity of the find shall cease, as determined by

the CAL FIRE archaeologist, and there shall be no further excavation or disturbance of the find site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of that county in which the remains are discovered has determined whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC. Public Resources Code Section §5097.98 specify the procedures to be followed in the event of discovery of human remains on non-federal land. The disposition of Native American burials is within the jurisdiction of the NAHC. Upon request, the NAHC will provide the project director with a list of most likely descendants, who will specify treatment and disposition of any Native American remains found within the area of potential effect of the project. Final disposition of the human remains is subject to the approval of the landowner. Human remains and associated grave goods are protected under Public Resources Code § 5097.94 and Health and Safety Code § 7050.5.

4.6 Energy

This section is based on the analysis and recommendations presented in the *Energy Consumption Assessment* (ECORP 2023e, Appendix E) prepared for the Proposed Project in July 2023. This section analyzes energy consumption due to the potential direct and indirect environmental impacts associated with the Project. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emissions of pollutants during the construction and operational phases. The impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

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 followed by renewables, large hydroelectric and nuclear. Redding Electric Utility (REU) provides electrical services to the City of Redding through state-regulated public utility contracts. REU states that they have been aggressive in diversifying their energy resource portfolio for economic and reliability reasons, and more recently for environmental, renewable, and carbon reduction objectives. REU operates

from 50 percent green energy generated through hydropower, wind and solar (Shasta Economic Development Corporation 2023).

Natural gas is provided to the Project Site by Pacific Gas and Electric (PG&E). PG&E provides natural gas to most of the northern 2/3 of California, from Bakersfield and Barstow to near the Oregon, Nevada, and Arizona State Lines. It provides 5.2 million people with electricity and/or natural gas across 70,000 square miles.

The California Public Utilities Commission (CPUC) regulates REU and PG&E. The CPUC has developed energy efficiency programs such as smart meters, low-income programs, distribution generation programs, self- generation incentive programs, and a California solar initiative. Additionally, the California Energy Commission (CEC) maintains a power plant database that describes all of the operating power plants in the state by county.

The components of transmission and distribution systems include the generating facility, switching yards and stations, primary substation, distribution substations, distribution transformers, various sized transmission lines, and the customers. The United States contains over a quarter million miles of transmission lines, most of them capable of handling voltages between 115 kilovolts (kv) and 345 kv, and a handful of systems of up to 500 kv and 765 kv capacity. Transmission lines are rated according to the amount of power they can carry, the product of the current (rate of flow), and the voltage (electrical pressure). Generally, transmission is more efficient at higher voltages. Generating facilities, hydro-electric dams, and power plants usually produce electrical energy at fairly low voltages, which is increased by transformers in substations. From there, the energy proceeds through switching facilities to the transmission lines. At various points in the system, the energy is "stepped down" to lower voltages for distribution to customers. Power lines are either high voltage (115, 230, 500, and 765 kv) transmission lines or low voltage (12, 24, and 60 kv) distribution lines. Overhead transmission lines consist of the wires carrying the electrical energy (conductors), insulators, support towers, and grounded wires to protect the lines from lightening (called shield wires). Towers must meet the structural requirements of the system in several ways. They must be able to support both the electrical wires, the conductors, and the shield wires under varying weather conditions, including wind and ice loading, as well as a possible unbalanced pull caused by one or two wires breaking on one side of a tower. Every mile or so, a "dead-end" tower must be able to take the strain resulting if all the wires on one side of a tower break. Every change in direction requires a special tower design. In addition, the number of towers required per mile varies depending on the electrical standards, weather conditions, and the terrain. All towers must have appropriate foundations and be available at a fairly regular spacing along a continuous route accessible for both construction and maintenance. A right-of-way (ROW) is a fundamental requirement for all transmission lines. A ROW must be kept clear of vegetation that could obstruct the lines or towers by falling limbs or interfering with the sag or wind sway of the overhead lines. If necessary, land acquisition and maintenance requirements can be substantial. The dimension of a ROW depends on the voltage and number of circuits carried and the tower design. Typically, transmission line ROWs range from 100 to 300 feet in width.

The California Independent System Operator (CAISO) manages the flow of electricity across the high-voltage, long-distance power lines (high-voltage transmissions system) that make up 80 percent of California's and a small part of Nevada's grid. This nonprofit public benefit corporation keeps power

moving to and throughout California by operating a competitive wholesale electricity market, designed to promote a broad range of resources at lower prices, and managing the reliability of the electrical transmission grid. In managing the grid, CAISO centrally dispatches generation and coordinates the movement of wholesale electricity in California. As the only independent grid operator in the western U.S., CAISO grants equal access to 26,000 circuit miles of transmission lines and coordinates competing and diverse energy resources into the grid where it is distributed to consumers. Every five minutes, CAISO forecasts electrical demand and dispatches the lowest cost generator to meet demand while ensuring enough transmission capacity for delivery of power.

CAISO conducts an annual transmission planning process that uses engineering tools to identify any grid expansions necessary to maintain reliability, lower costs or meet future infrastructure needs based on public policies. CAISO engineers design, run and analyze complex formulas and models that simulate grid use under wide-ranging scenarios, such as high demand days coupled with wildfires. This process includes evaluating power plant proposals submitted for study into the interconnection queue to determine viability and impact to the grid. The long-term comprehensive transmission plan, completed every 15 months, maps future growth in electricity demand and the need to meet state energy and environmental goals that require the CAISO grid to connect to renewable-rich, but remote areas of the Western landscape. CAISO promotes energy efficiency through resource sharing. CAISO electricity distribution management strategy is designed so that an area with surplus electricity can benefit by sharing megawatts with another region via the open market. This allows the dispatch of electricity as efficiently as possible. By maximizing megawatts as the demand for electricity increases, CAISO helps keep electricity flowing during peak periods.

4.6.1.2 Energy Consumption

Electricity use is measured in kWh, and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g., gallons of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh. As previously stated, this impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity usage, natural gas usage, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

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

Table 4.6-1. Nonresidential Electricity Consumption in Shasta County 2017 – 2021

Year	Electricity Consumption (kilowatt hours)
2021	838,880,937
2020	808,058,771
2019	804,330,098
2018	827,248,560

Table 4.6-1. Nonresidential Electricity Consumption in Shasta County 2017 – 2021	
Year	**Electricity Consumption (kilowatt hours)**
2017	817,529,318

Source: California Energy Commission (CEC) 2022

The natural gas consumption associated with all nonresidential uses in Shasta County from 2017 to 2021 is shown in Table 4.6-2. As indicated, natural gas consumption has increased since 2017.

Table 4.6-2. Nonresidential Natural Gas Consumption in Shasta County 2017 – 2021	
Year	**Natural Gas Consumption (therms)**
2021	16,891,905
2020	16,482,526
2019	16,765,884
2018	14,857,325
2017	15,750,715

Source: California Energy Commission (CEC) 2022

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

Table 4.6-3. Automotive Fuel Consumption in Shasta County 2018 – 2022	
Year	**Total Fuel Consumption**
2022	139,798,190
2021	140,851,948
2020	128,494,172
2019	141,035,680
2018	140,986,386

Source: California Air Resources Board (CARB) 2022

4.6.2 Regulatory Setting

4.6.2.1 State

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Bowen, Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (Public Resources Code Section 25301a). The CEC prepares these assessments and associated policy recommendations every two years, with updates on alternate years, as part of the Integrated Energy Policy Report (IEPR).

The 2017 IEPR focuses on next steps for transforming transportation energy use in California. The 2017 IEPR addresses the role of transportation in meeting state climate, air quality, and energy goals; the transportation fuel supply; the Alternative and Renewable Fuel and Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; transportation energy demand forecasts; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure.

Executive Order B-55-18

In September 2018 Governor Jerry Brown Signed Executive Order (EO) B-55-18, which establishes 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 a net zero carbon dioxide 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 emission reduction. EO 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.

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law SB 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the CPUC.

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gas.

- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the Emissions Performance Standard (Perata, Chapter 598, Statutes of 2006).

Senate Bill 1368 Renewable Energy Sources (Renewable Portfolio Standards)

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the CAISO into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 RPS.

4.6.2.2 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to energy if it would do any of the following:

1) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

As stated at the beginning of the section, the impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity usage, natural gas usage, the equipment fuel necessary for Project construction, and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no

established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use. For the purposes of this analysis, the amount of electricity and natural gas estimated to be consumed by the Project are quantified and compared to that consumed by all nonresidential land uses in Shasta County. Similarly, the amount of fuel necessary for Project construction and operations is calculated and compared to that consumed in the County.

4.6.2.3 Methodology

The levels of construction and operational related energy consumption estimated to be consumed by the Project include the number of kWh of electricity, therms of natural gas, and gallons of gasoline. The amount of total construction-related fuel used was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Electricity and natural gas consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.14 (see Appendix A). CalEEMod is a statewide land use computer model designed to quantify resources associated with both construction and operations from a variety of land use projects. Operational automotive fuel consumption has been calculated with EMission FACtor (EMFAC) 2021. EMFAC 2021 is a mathematical model that was developed to calculate emission rates and rates of gasoline consumption from motor vehicles that operate on highways, freeways, and local roads in California.

4.6.3 Energy (VI) Environmental Checklist and Discussion

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

Less Than Significant Impact.

4.6.3.1 Project Construction

The Project is proposing the construction and relocation of the existing SHU HQ as well as several CNR HQ facilities and programs. 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 nonresidential land uses in Shasta County. The amount of fuel necessary for Project construction is calculated and compared to that consumed in Shasta County. Similarly, the amount of fuel necessary for Project operations is calculated and compared to that consumed in Shasta County as well. 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
Building Energy Consumption		
Electricity Consumption[1]	2,595,507 kilowatt-hours	0.30
Natural Gas[1]	52,335 therms	0.30
Automotive Fuel Consumption		
Project Construction Calendar Year One[2]	52,808 gallons	0.03
Project Construction Calendar Year Two[2]	59,409 gallons	0.04
Project Operations[3]	148,274 gallons	0.10

Notes: The Project increases in electricity and natural gas consumption are compared with all nonresidential uses in Shasta County in 2021, the latest data available. The Project increases in automotive fuel consumption are compared with the anticipated countywide fuel consumption in 2022, the most recent full year of data.

Source: [1]California Air Pollution Control Officers Association (CAPCOA 2022; [2]Climate Registry 2016; [3]California Air Resources Board [CARB] 2022a)

Fuel necessary for Project construction would be required for the operation and maintenance of construction equipment and the transportation of materials to the Project Area. The fuel expenditure necessary to construct the Project would be temporary, lasting only as long as Project construction. As indicated in Table 4.6-4, the Project's gasoline fuel consumption during the two-year construction period is estimated to be 52,808 gallons during the first calendar year of construction and 59,409 gallons during the second calendar year of construction. This would increase the annual countywide gasoline fuel use in the county by 0.03 percent and 0.04 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. Impacts to energy resources during Project construction would be less than significant.

4.6.3.2 Project Operations

Proposed Project operations would include electricity, natural gas, and automotive fuel usage. As shown in Table 4.6-4, the annual electricity consumption due to operations would be 2,595,507 kilowatt-hours resulting in an imperceivable increase (0.30 percent) in the typical annual electricity consumption attributable to all nonresidential uses in Shasta County. However, this is potentially a conservative estimate. 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 (CO_2) 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 emission reduction. Governor's EO 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." Additionally, this number does not take into account the 100,000 square foot solar array that is proposed on the eastern boundary of the Project Site. This, in turn, would result in less nonrenewable energy consumption on the Project Site and a smaller contribution to annual nonrenewable electricity consumption in Shasta County. Natural gas consumption due to operations would be 52,335 therms resulting in an insignificant increase (0.30 percent) in the typical annual natural gas consumption attributable to all nonresidential uses in Shasta County. For these reasons, it is expected that energy consumption associated with Project buildings would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

As indicated in Table 4.6-4, Project automotive trips would equate to a consumption of approximately 148,274 gallons of automotive fuel per year, which would lead to a minimal (0.10 percent) increase in the annual countywide automotive fuel consumption. Further, the project involves relocation of existing operations to a more energy efficient facility. Therefore, fuel consumption associated with the vehicle trips generated by the Project during ongoing operations would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Impacts would be less than significant.

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

No Impact.

The California IEPR provides policy recommendations to be implemented by energy providers in California. Electricity would be provided to the Project by REU and natural gas would be provided to the Project by PG&E. REU's 2019 Integrated Resource Plan and PG&E's 2022 Integrated Energy Policy Report build on existing state programs and policies that support the IEPR goals of improving electricity, natural gas, and transportation fuel energy use in California. REU's 2019 Energy Efficiency Report states that the REU will meet the statewide 2030 renewable energy target as well as the intermediate targets (REU 2019). PG&E's 2022 Integrated Energy Policy Report states that in 2030, expected gas savings from various natural gas consumption reduction strategies equate to 1,870 million therms (PG&E 2023). In 2035, the expected savings grow to a total of 3,904 million therms (PG&E 2023). REU and PG&E are consistent with, and would not otherwise interfere with, nor obstruct implementation of the goals presented in the 2023 California IEPR. Thus, because the REU and PG&E are consistent with the 2023 IEPR, the Project is consistent with, and would not otherwise interfere with, nor obstruct implementation of the goals presented in the 2023 IEPR.

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 will be built to the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (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; the 2019 Title 24 updates went into effect on January 1, 2020. The 2022 standards went into effect became effective 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 focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, encouraging better energy efficiency, strengthening ventilation standards, and more. The 2022 Energy Standards are a major step toward meeting 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 subsequently updated in 2013. CalGreen covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. With these building standards in place, the Project would not obstruct any state or local plan for renewable energy or energy efficiency. There would be no impact.

4.6.4 Mitigation Measures

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

4.7 Geology and Soils

This section addresses the potential impact of the Proposed Project on geological and soil resources within the Project area. The information and analysis presented here is based, in part, on the *Geotechnical Report* by CGI Technical Services, Inc. (CGI 2023). CGI conducted a geotechnical field investigation to evaluate subsurface soil conditions and to provide subsurface data for evaluation of the Proposed Project on February 15 and 17, 2023. The *Geotechnical Report* is included with this Initial Study as Appendix F.

4.7.1 Environmental Setting

4.7.1.1 Geomorphic Setting

The Project site is located in the northern Sacramento Valley near the northern margin of the Great Valley Physiographic province. The Great Valley province is bordered to the north by the Klamath and Cascade Physiographic provinces, to the east by the Cascade and Sierra Nevada Physiographic provinces, to the west by the Klamath and Coast Ranges Physiographic provinces, and to the south by the Transverse Ranges Physiographic province. The Great Valley Physiographic province is about 50 miles wide and 400 miles long. The Sacramento Valley, which forms the northern portion of the province, is about 150 miles long and 40 miles wide. The Great Valley is a large elongate northwest-trending asymmetric structural

trough that has been filled with a tremendously thick sequence of sediments ranging from Jurassic to recent. Sediment thicknesses of up to 10 miles are reported within the Sacramento Valley; however, in the Project area, being at the northern margin of the valley, those thicknesses have been projected to be less than one mile. Sediments within the Great Valley consist of both marine and continental deposits, with most of the sediments underlying the project area consisting of continental deposits (CGI 2023).

4.7.1.2 Project Site

The Project site is underlain by the Red Bluff Formation. This formation is Pliocene-age and consists of nonmarine alluvial sediments deposited from ancestral fluvial systems derived from the Klamath Mountains, and Cascade and Coast Ranges.

The topography of the Project area is dominated by stepped alluvial terraces leading down to the active Stillwater Creek channel located at about 700 feet to the west of the Project site. The Project site is relatively flat and inclined at less than about two degrees towards the west/southwest. The Project site is covered with grass and weeds and surrounded by undeveloped parcels to the north, east and south, and Venture Parkway to the west.

4.7.1.3 Regional Seismicity and Fault Zones

The California Department of Conservation, Division of Mines and Geology, defines an *active fault* as one that has been subjected to surface displacement within the last 11,000 years. A fault is considered *inactive* if it has not shown geologic evidence of surface displacement in the last 11,000 years.

The California Geologic Survey evaluates the activity rating of a fault in Fault Evaluation Reports (FER). FERs compile available geologic and seismologic data and evaluate if a fault should be zoned as Holocene-active, pre-Holocene, or age undetermined. If an FER evaluates a fault as Holocene-active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Fault Zoning Act. Alquist-Priolo Special Studies Zones require site-specific evaluation of fault location for structures for human occupancy and require a habitable structure setback if the fault is found traversing a Project site.

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no Holocene-active faults are known to pass through the area (CGI 2023). However, a number of regional and local faults traverse the Project region. The most significant of these faults is the Pre-Holocene Battle Creek fault, located about 12 miles south of the Project site. The fault mapped closest to the site is the Pre-Holocene Bear Creek fault, located about 5 miles to the southeast. The closest Holocene-active fault, as zoned by the State, is the Hat Creek-McCarthur Fault System, located about 45 miles east of the site.

In addition to the continental faulting noted above, the Project area rests above the Cascadia subduction zone. West of the site, off the coast of California, the oceanic crust of the Gorda plate is being subducted beneath the continental crust of the North American Plate, in an area known as the Gorda Escarpment. The descending ramp caused by that subduction, called the Cascadia Subduction zone, extends beneath the project area at a depth of about 20 to 25 miles. That ramp is capable of storing elastic stress that periodically causes earthquakes that could affect the Project area (CGI 2023).

Over the last approximately 200 years, 16 earthquakes with local magnitudes equal or greater than 5.5 have occurred within approximately 100 miles of the site, based on a search of selected USGS earthquake catalogs (CGI 2023). The most significant earthquake to affect the Project area was an earthquake (Vacaville-Winters) with a moment magnitude (Mw) of 6.6 that occurred on April 19, 1892, approximately 150 miles from the site. The closest known earthquake to the Project area was an earthquake with a Mw of 5.1 that occurred on November 26, 1998, approximately 15 miles from the site (CGI 2023).

Local earthquakes can also be expected from Lassen Peak if it enters a phase nearing eruption or if subsurface migration of magma occurs. Those earthquakes, similar to earthquakes experienced prior to eruption of Mt. St. Helens or at Mammoth Mountain (without eruption), typically occur as swarms with earthquake magnitudes of low to moderate intensity.

4.7.1.4 Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey database, the Project site is dominated by Red Bluff loam, 0 to 3 percent slopes. The southwest corner of the Project site also contains a small amount of Moda loam, seeped, 0 to 3 percent slopes (Figure 4.4-2). The Web Soil Survey identifies drainage, flooding, erosion, runoff, and the linear extensibility potential for Red Bluff loam (NRCS 2023):

- Drainage Class: Well-Drained
- Runoff Class: Medium
- Flooding Frequency Class: None
- Hydrologic Soil Group: C

4.7.1.5 Paleontological Resources

ECORP prepared a *Paleontological Assessment Memorandum* (ECORP 2023f, Appendix G) for the Proposed Project to determine if paleontological resources were present in or adjacent to the Project Area and assess the area for undiscovered paleontological resources. This assessment included a paleontological record search through the University of California Museum of Paleontology (UCMP) and a desktop study of the geology and paleontology of the Project Area.

Located in the northernmost portion of the Sacramento Valley, the Project Area is part of the Great Valley Geomorphic Province. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. The northern Sacramento Valley has been described as a large, asymmetric, structural trough or syncline formed by westward-tilting blocks of plutonic and metamorphic rocks on the eastern side and folded and faulted blocks of metamorphic rocks (Franciscan) on the west side (ECORP 2023f). Along with the San Joaquin Valley to the south (collectively referred to as the Great Valley geomorphic province), the Great Valley Sequence consists of coalescing submarine fans whose sources were the Klamath Mountains and Sierra Nevada to the north and east. These deposits include mudstones, sandstones, and conglomerates (Analytical Environmental Services 2019). These sedimentary units vary in age from Jurassic (199 to 144 million years ago) to Quaternary (200 million years ago to present) (Sikes

and Arrington 2017). Tertiary and Quaternary fluvial sedimentary desists overlie the Great Valley Sequence. The Pliocene Tehama Formation, consisting of pale green to tan semi-consolidated silt, clay, sand, and gravel, is the oldest and is derived from erosion of the Coast Ranges and Klamath Mountains. The Red Bluff Formation is a broad erosional surface of low relief formed on the Tehama Formation between 0.45 and 1 million years ago. Recent alluvium consists of loose sedimentary deposits of clay, silt, sand, gravel, and boulders.

4.7.2 Regulatory Setting

Laws and regulations relevant to the Proposed Project are presented below.

4.7.2.1 State

Alquist-Priolo Earthquake Fault Zoning Act (PRC, §§ 2621-2630)

This Act requires that *sufficiently active* and *well-defined* earthquake fault zones be delineated by the State Geologist and prohibits locating structures for human occupancy on active and potentially active surface faults. Note that since only those potentially active faults that have a relatively high potential for ground rupture are identified as fault zones; not all potentially active faults are zoned under the Alquist-Priolo Earthquake Fault Zone, as designated by the State of California.

California Building Code (CCR, Title 23)

The California Building Code (CBC) provides a minimum standard for building design, which is based on the International Building Code, but is modified for conditions unique to California. The CBC is selectively adopted by local jurisdictions, based on local conditions. The CBC contains requirements pertaining to multiple activities, including excavation, site demolition, foundations and retaining walls, grading activities including drainage and erosion control, and construction of pipelines alongside existing structures.

4.7.3 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:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐

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

Less Than Significant Impact.

i and ii) As discussed above, the Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no Holocene-active faults are known to pass through the area (CGI 2023). However, a number of regional and local faults traverse the Project region. The most significant of these faults is the Pre-Holocene Battle Creek fault, located about 12 miles south of the Project site. The fault mapped closest to the site is the Pre-Holocene Bear Creek fault, located about 5 miles to the southeast. The closest Holocene-active fault, as zoned by the State, is the Hat Creek-McCarthur Fault System, located about 45 miles east of the site. The Project would comply with CBC seismic design criteria, and impacts would be less than significant.

iii) Liquefaction is the sudden loss of soil shear strength due to a rapid increase of soil pore water pressures caused by cyclic loading from a seismic event. This means that liquefied soil acts more like a fluid than a solid when shaken during an earthquake. In order for liquefaction to occur, the following are needed:

- Granular soils (sand, silty sand, sandy silt, and some gravels);
- A high groundwater table; and
- A low density in the granular soils underlying the site.

If those criteria are present, then there is a potential for soils to liquefy during a seismic event. The adverse effects of liquefaction include local and regional ground settlement, ground cracking and expulsion of water and sand, the partial or complete loss of bearing and confining forces used to support loads, amplification of seismic shaking, and lateral spreading. In general, the effects of liquefaction on the Proposed Project could include:

- Lateral spreading;
- Vertical settlement; and/or
- The soils surrounding lifelines can lose their strength and those lifelines can become damaged or severed.

The Project site is underlain by fine-rich material over dense to very dense soils. Because of the grain size characteristics and relative density of the sediments, these materials are considered to have a low potential for liquefaction during a seismic event. This finding is corroborated by a study commissioned by

the City of Redding that found the Project area has a low potential for liquefaction. Therefore, impacts from liquefaction potential would be less than significant.

iv) Regional subsidence typically occurs due to sustained withdrawal of subsurface fluids or gas, leading to consolidation of the subsurface reservoirs and surface settlement. No regional subsidence is known to be occurring in the Project area. The Project site is also relatively flat. Naturally occurring landslides pose a low risk to the Project and potential impacts are 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?	☐	☐	☒	☐

Less Than Significant Impact.

Development of the Proposed Project will require site preparation and grading activities that have the potential to result in soil erosion or the loss of topsoil if not properly controlled. Water and wind serve as the primary catalyst of soil erosion, with steeper slopes intensifying the effects. Vegetation removal as part of the site preparation process as well as grading and ground disturbing activities associated with development can heighten the potential for and accelerate soil erosion.

Best Management Practices (BMPs) will be included as part of the SWPPP being prepared for the Proposed Project. These BMPs would be implemented to manage erosion and the loss of topsoil during construction-related activities, as described in Section 4.10 *Hydrology and Water Quality*. Implementation of the SWPPP would ensure potential impacts from soil erosion are 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Less Than Significant Impact.

Lateral spreading is defined as lateral earth movement of liquefied soils, or soil riding on a liquefied soil layer, down slope toward an unsupported slope face, such as a creek bank, or an inclined slope face. In general, lateral spreading has been observed on low to moderate gradient slopes, but has been noted on slopes inclined as flat as one degree.

Another potentially adverse secondary seismic effect is co-seismic compaction of moderately consolidated, sandy, relatively cohesionless soils above or below groundwater. Co-seismic compaction is soil densification resulting from dynamic loading of relatively loose, non-cohesive soil materials. Shaking

or vibration can densify loose to moderately consolidated granular soils, resulting in settlement of the ground surface.

Soils encountered during CGI's geotechnical investigation are estimated to have a low potential for seismic induced settlement under the anticipated seismic ground motions at the site. Therefore, impacts from unstable geologic units and soils 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 expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

Less Than Significant Impact.

There is a direct relationship between plasticity of a soil and the potential for expansive behavior, with expansive soil generally having a high plasticity. 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. CGI conducted Atterberg limit testing on two selected samples found plasticity index (PI) ranging from about 13 to 14. A PI value ranging from 13 to 14 is associated with soils having a low expansion potential. Therefore, impacts from expansive soils would be less than significant.

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

No Impact.

The Proposed Project would connect to the existing sanitary sewer system that conveys effluent to the regional wastewater treatment facility. There are no onsite septic tanks or alternative wastewater treatment facilities proposed as part of the Project. Therefore, there would be no impacts due to septic tanks or alternative wastewater disposal systems.

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

Less Than Significant With Mitigation Incorporated.

A paleontological record search was conducted by ECORP through the UCMP. There were no records of previous findings on or near the Project Site. The nearest sites are Cretaceous invertebrates from rocks located north of Millville, California, approximately 13 miles east of Redding, California. In addition to the record search results, ECORP also conducted reviews of published and unpublished literature. No fossils have been recovered due to the complexity of the geology in the Study Area (ECORP 2023f). Nevertheless, slim potential remains for the discovery of buried paleontological resources. Because the potential for inadvertent discovery of paleontological or unique geological resources exists, Mitigation Measure GEO-1 shall be implemented. Mitigation Measure GEO-1 will ensure that proper procedures are followed in the event of a paleontological discovery, thereby reducing potential impacts to less than significant.

4.7.4 Mitigation Measures

GEO-1: **Unanticipated Discovery of Paleontological Resources.** If paleontological resources are discovered during construction, all work must halt within a 100-foot radius of the discovery and a qualified paleontologist shall be retained to evaluate the find. The paleontologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The lead agency will be notified if there is a significant discovery. The qualified paleontologist will evaluate the significance of the find and recommend appropriate measures for the disposition of the find (e.g., fossil recovery, curation, data recovery, and/or monitoring). Construction activities may continue on other parts of the construction site while evaluation and treatment of the paleontological resource takes place.

4.8 Greenhouse Gas Emissions

This section is based on the analysis and recommendations presented in the *Air Quality and Greenhouse Gas Emissions Assessment* (ECORP 2023a, Appendix A) prepared for the Proposed Project in July 2023. This section presents regional and local existing conditions in addition to pertinent Greenhouse Gas (GHG) emissions-related standards and regulations. The purpose of this assessment is to estimate Project-generated GHG emissions and to determine the level of impact the Project would have on the environment.

4.8.1 Environmental Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation

is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. More specifically, experts agree that human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. (Intergovernmental Panel on Climate Change [IPCC] 2023).

Table 4.8-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect. 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. CH4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalent (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and HAPs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Despite the sequestration of CO2, human-caused climate change is already causing damaging effects, including weather and climate extremes in every region across the globe (IPCC 2023).

Table 4.8-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.

Sources: U.S. Environmental Protection Agency (USEPA) 2016a, 2016b, 2016c
Note: CH_4 = Methane; CO_2 = Carbon Dioxide; N_2O = Nitrous Oxide;

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

4.8.1.1 Sources of Greenhouse Gas Emissions

In 2022, CARB released the 2022 edition of the California GHG inventory covering calendar year 2020 emissions. In 2020, California emitted 369.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2020, accounting for approximately 38 percent of total GHG emissions in the state. Continuing the downward trend from previous years, transportation emissions decreased 27 million metric tons of CO_2e in 2020, though the intensity of this decrease was most likely from light duty vehicles after shelter-in-place orders were enacted in response to the COVID-19 pandemic. Emissions from the electricity sector account for 16 percent of the inventory and have remained at a similar level as in 2019 despite a 44 percent decrease in in-state hydropower generation (due to below average precipitation levels), which was more than compensated for by a 10 percent growth in in-state solar

generation and cleaner imported electricity incentivized by California's clean energy policies. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2020, accounting for 23 percent (CARB 2022c).

4.8.2 Regulatory Setting

4.8.2.1 State

Executive Order S-3-05

EO S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2022 California Building Codes include provisions related to energy efficiency to reduce energy consumption and greenhouse gas emissions from buildings. Some of the key energy efficiency components of the codes are:

1. Energy Performance Requirements: The codes specify minimum energy performance standards for the building envelope, lighting, heating and cooling systems, and other components.
2. Lighting Efficiency: The codes require that lighting systems meet minimum efficiency standards, such as the use of energy-efficient light bulbs and fixtures.
3. Heating, Ventilation, and Air Conditioning (HVAC) Systems: The codes establish requirements for HVAC systems, including the use of high-efficiency equipment, duct sealing, and controls.
4. Building Envelope: The codes include provisions for insulation, air sealing, glazing, and other building envelope components to reduce energy loss and improve indoor comfort.
5. Renewable Energy: The codes encourage the use of renewable energy systems, such as photovoltaic panels and wind turbines, to reduce dependence on non-renewable energy sources.
6. Commissioning: The codes require the commissioning of building energy systems to ensure that they are installed and operate correctly and efficiently.

Overall, the energy efficiency provisions of the 2022 California Building Codes aim to reduce the energy consumption of buildings, lower energy costs for building owners and occupants, and reduce the environmental impact of the built environment. The 2022 Building Energy Efficiency Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The exact amount by which the 2022 Building Codes are more efficient compared to the 2019 Building Codes would depend on the specific provisions that have been updated and the specific building being considered. However, in general, the 2022 Building Codes have been updated to include increased requirements for energy efficiency, such as higher insulation and air sealing standards, which are intended to result in more efficient buildings. The 2022 standards are a major step toward meeting Zero Net Energy.

4.8.2.2 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

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

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant. Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or

administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a less than significant finding for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

In Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the State that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The SCAQMD does not promulgate thresholds for GHG emissions. To determine if the Project will generate GHG emissions that may have a significant impact on the environment Project GHG emissions will be compared with the thresholds established by the CAPCOA. CAPCOA has provided guidance for determining the significance of GHG emissions generated from land use development projects. CAPCOA also considers projects that generate more than 900 metric tons of CO2e to be significant. This threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the Statewide GHG emissions reduction goals for 2023 reduction goals and beyond promulgated under SB 32. Thus, both cumulatively and individually, projects that generate less than 900 metric tons CO_2e per year have a negligible contribution to overall emissions.

4.8.2.3 Methodology

Where GHG emission quantification is required, emissions are modeled using CalEEMod, version 2022.1.1.14. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions are calculated primarily using CalEEMod model defaults. Operational GHG emissions are based on the land uses, building dimensions, and lot size identified in the Project Site Plan.

The Project proposes to relocate the existing SHU HQ as well as the CNR HQ facility to the Proposed Project Site. For the purpose of this analysis, operational emissions for the Proposed Project are compared to the emissions that are currently generated for the SHU HQ and CNR HQ, which are proposed for relocation, and the delta in emissions between these two scenarios is assessed against the CAPCOA's potentially significant threshold.

4.8.3 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

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

Less Than Significant Impact.

4.8.3.1 Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Area, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 4.8-2 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 will cease.

Table 4.8-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Construction Calander Year One	539
Construction Calander Year Two	609
CAPCOA's Potentially Significant Threshold	*900*
Exceed Significance Threshold?	**No**

Source: California Emissions Estimator Model (CalEEMod) version 2022.1.1.14. Refer to Appendix A for Model Data Outputs.
Note: CO_2e = Carbon Dioxide Equivalent; CAPCOA = California Air Pollution Control Officers Association

As shown in Table 4.8-2, Project construction would result in the generation of approximately 539 metric tons of CO_2e over the course of the first calendar year of construction and 609 metric tons of CO_2e over the course of the second calendar year. Once construction is complete, the generation of these GHG emissions would cease. Impacts would be less than significant.

4.8.3.2 Project Operations

Operation of the Project would result in an increase in GHG emissions primarily associated with motor vehicle trips. For the purposes of this analysis, Proposed Project operational emissions are compared to existing operational emissions, and the delta in emissions between these two scenarios are assessed against CAPCOA's potentially significant threshold. Table 4.8-3 illustrates long-term operational emissions.

Table 4.8-3. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Existing Shasta-Trinity Unit Headquarters and Northern Region Headquarters	
Area	0
Energy	341
Mobile	112
Waste	21
Water	24
Refrigerants	0
Total:	**498**
Proposed Relocated Shasta-Trinity Unit Headquarters and Northern Region Headquarters	
Area	2
Energy	722
Mobile	371
Waste	106
Water	47
Refrigerants	109
Total:	**1,357**
Difference (Proposed New Facility – Existing Facility)	
Area	**+2**
Energy	**+381**
Mobile	**+259**
Waste	**+85**
Water	**+23**
Refrigerants	**+109**
Difference Total:	**+859**
CAPCOA's Potentially Significant Threshold	*900*
Exceed Significance Threshold?	**No**

Source: California Emissions Estimator Model (CalEEMod) version 2022.1.1.14. Refer to Appendix A for Model Data Outputs.
Notes: CO_2e = Carbon Dioxide Equivalent; CAPCOA = California Air Pollution Control Officers Association

As shown in Table 4.8-3, the delta in operational-generated emissions would not exceed CAPCOA's Potentially Significant Threshold. Operational impacts would be less than significant.

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

No Impact.

At the time of this analysis, the City of Redding has yet to adopt a Climate Action Plan. The Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. As discussed previously, the Proposed Project-generated GHG emissions would not surpass the CAPCOA GHG significance threshold for Project construction or operation. This threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the Statewide GHG emissions reduction goals for 2023 reduction goals and beyond promulgated under SB 32. As such, the Project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. There would be no impact.

4.8.4 Mitigation Measures

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

4.9 Hazards and Hazardous Materials

The analysis presented in this section is based in part on the results of the *Phase I Environmental Site Assessment* prepared by GEOCON Consultants, Inc. in June 2019. The *Phase I Environmental Site Assessment* is included with this Initial Study as Appendix H.

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 22 CCR Section 662601.10 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.

Transporters of hazardous waste in California are subject to several federal and state regulations. They must register with the California Department of Health Services (DHS) and ensure that vehicle and waste container operators have been trained in the proper handling of hazardous waste. Vehicles used for the transportation of hazardous waste must pass an annual inspection by the CHP. Transporters must allow the CHP or DHS to inspect its vehicles and must make certain required inspection records available to both agencies. The transport of hazardous materials that are not wastes is regulated by the U.S. Department of Transportation through national safety standards.

Other risks resulting from hazardous materials include the use of these materials in local industry, businesses, and agricultural production. The owner or operator of any business or entity that handles hazardous material above threshold quantities is required by state and federal laws to submit a business plan to the local Certified Unified Program Agency (CUPA). The Shasta County Environmental Health Division is designated by the State Secretary for Environmental Protection as the CUPA for Shasta County in order to focus the management of specific environmental programs at the local government level. The CUPA program is designed to consolidate, coordinate, and uniformly and consistently administer permits and conduct inspection and enforcement activities throughout Shasta County. This approach strives to reduce overlapping and sometimes conflicting requirements of different governmental agencies independently managing these programs. The County will refer large cases of hazardous materials contamination or violations to the RWQCB (Region 5R) and the California Department of Toxic Substances Control (DTSC). It is not uncommon for other agencies, such as federal and state Occupational Safety and Health Administrations, to become involved when issues of hazardous materials arise.

Under Government Code Section 65962.5, both the 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. The Project site is not listed by the DTSC or SWRCB as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code § 65962.5 (Cortese List).

4.9.1.1 Project Site

GEOCON (2019) describes the site as irregular-shaped and generally consisting of vacant pasture land with gated access from Venture Parkway. The surrounding vicinity generally consists of similar vacant pasture land. Site topography is relatively flat at an approximate elevation of 500 feet above mean sea level. The regional topography is characterized by similar relatively flat terrace terrain incised by creeks. GEOCON found no evidence of recognized environmental conditions or potential environmental concerns in connection with the Project site through preparation of the *Phase I ESA*.

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

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

Less Than Significant Impact.

The Project proposes an 8,000-gallon above ground covered fuel storage tank and covered dispensing system adjacent to the northern side of the proposed warehouse. The tank would be split for 4,000 gallons each of diesel and unleaded gasoline. The tanks would be designed and certified specifically for the purpose of fuel storage. Routine transportation of these fuels would occur in order to refill the fuel reserves. Transportation of these fuels would be via approved fuel transport trucks that have been licensed specifically for this purpose. The transport of hazardous materials by truck is regulated by federal safety standards under the jurisdiction of the U.S. Department of Transportation. The CHP is responsible for tanker truck inspections and permitting within the state. Because of existing requirements for the use, transport, and disposal of propane, diesel and gasoline, the potential for significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous fuels is less than significant.

Additionally, CAL FIRE would comply with all federal, state, and local regulations regarding the storage of hazardous waste. All onsite hazardous waste handling and storage would occur within the specially designed hazardous waste storage areas within the auto shop and warehouse which would be equipped with secondary containment.

Other hazardous materials use may include lubricants, fuels, and solvents. Because all on- and offsite storage and use of hazardous materials would be conducted consistent with applicable regulations, use of these materials would not create a significant hazard to the public. There would be no substantial change over current use of these materials at the existing HQ facilities, and the improved storage facilities would increase site safety. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Less Than Significant Impact.

Hazardous materials, such as diesel fuel and oil, would be used during construction, operation, and maintenance at the Project site. The release of any hazardous substance to the environment would be prevented through the implementation of BMPs listed in the SWPPP and Spill Prevention, Control and Countermeasure Plan. As described above in the discussion for item a), routine use, storage, and handling of hazardous substances would be conducted in accordance with applicable federal, state, and local regulations.

Hazards related to building and vehicle maintenance materials would be present at the Project site. Because of existing requirements for the use, transport, and storage, of diesel and gasoline, the potential for significant hazards to the public, Proposed Project employees, construction workers, and the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be reduced to a less than significant impact.

In addition, CGI (2023) found that asbestos-bearing geologic materials (naturally occurring asbestos) are not known to be present at the Project site. Therefore, hazardous geologic risks posed to the Project area are likely low. Similarly, radon-222 and mine hazards have not been identified as significant geologic hazards in the Project area. No other geologic hazards are known to exist in the Project area (CGI 2023). 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) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No Impact.

The Project site is not within one-quarter mile of an existing or proposed school. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

No Impact.

As described in Section 4.9.1, the Project site is not listed by the DTSC or SWRCB as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code § 65962.5 (Cortese List). There would be no impact.

	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?	☐	☐	☐	☒

No Impact.

The Project site is located approximately 3,000 feet east of the northern end of the Redding Municipal Airport, located at 6751 Woodrum Circle, Redding. However, the Project site is outside of the land use plan according to the 2015 *Redding Municipal Airport Master Plan*. There would be no impact.

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

No Impact.

Construction and operation of the Proposed Project will not impair or conflict with an adopted emergency response plan or evacuation plan. The Project aims to improve natural and manufactured wildfire and emergency response times and evacuation procedures. There would be no impact.

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

Less Than Significant Impact.

As discussed in Section 4.20 *Wildfire*, the Project site is in an area at high risk of wildfire. However, the Project proposes to relocate the SHU HQ and CNR HQ to a new co-located facility that will better serve

the responsibility areas as defined in Section 2.1. The Proposed Project would allow the new facility to provide high-quality fire protection and emergency-response service in the region. Impacts would be less than significant.

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 Site Hydrology and Onsite Drainage

The irregular-shaped Project site is currently vacant grassland that is relatively flat, without trees, drainage improvements, or water bodies. The surrounding parcels feature similar grassland with some trees dispersed throughout. A small body of water exists on the property to the north. The site naturally drains east to west and discharges to the drainage ditch along Venture Parkway. The proposed system will mimic existing drainage patterns and capture/treat runoff before ultimately discharging to the Venture Parkway drainage ditch.

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 groundwater quality?	☐	☐	☒	☐

Less Than Significant Impact.

The majority of the precipitation for the area occurs during the winter months; however, adverse storm events can also occur outside of the winter. During construction of the Proposed Project, impacts to water resources could occur without proper controls to protect water quality and reduce impacts to soil erosion. Soil can be loosened during fill and grading, paving, and tree removal processes. Loosened soils and spills of fluids or fuels from construction vehicles and equipment or miscellaneous construction materials and debris could degrade surface and ground water quality. A heavy rainfall event could cause pollutants to flow offsite and reach nearby surface water drainage features. The Project area impacted would be more than one acre, making the Proposed Project subject to the requirements of the statewide NPDES storm water permit for construction. A SWPPP, a required element of the NPDES, includes a listing of BMPs to prevent construction pollutants and products from violating water quality standards or waste discharge requirements. A SWPPP would be required for the Proposed Project. Stormwater BMPs might include both underground infiltration and vegetated swales.

Additionally, all operational activities would be performed consistent with water quality regulations and all hazardous material special use areas would be designed to protect against surface and groundwater contamination. CAL FIRE would comply with all federal, state, and local regulations regarding the storage of hazardous waste and all onsite hazardous waste storage would occur within the specially designed hazardous waste storage building, which would be equipped with secondary containment. Therefore, the Proposed Project will have a less than significant impact on water quality. No mitigation is required.

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

Less Than Significant Impact.

The City of Redding will provide water service to the Project site via the water main located in Venture Parkway. The City of Redding gets its water from a combination of groundwater and surface water resources.

Per the City of Redding post-construction standards, the new development is classified as a regulated project (improvements greater than 5,000 sf) which will require storm treatment and hydromodification measures. The site naturally drains east to west and discharges to the drainage ditch along Venture Parkway. The proposed system will mimic existing drainage patterns and capture/treat runoff before ultimately discharging to the Venture Parkway drainage ditch. A series of bioretention basins are proposed in the center plaza of the site to treat impervious runoff from adjacent areas. The basins shall provide an integrated design that is both functional and aesthetically pleasing. Runoff not treated by the bioretention basins will be captured and treated by a bioretention pond at the southwest corner of the campus. Amended strips are proposed throughout the site to treat surface flow runoff from select parking areas. Stormwater treatment and control measures such as LIDs and SDMs will be utilized to mitigate and treat stormwater runoff. Treatment areas will be sized according to the California Phase II LID sizing Tool. A combination of bioretention ponds (0.37 acre), bioretention basins (0.311 acres), and amended soil strips (0.304 acres) will be used to comply with the City of Redding requirements. The treatment measure sections proposed are as follows:

- Bioretention ponds: 2 feet deep with 2 feet soil, and 2 feet of gravel storage.
- Bioretention basins: 1 foot deep with 2 feet soil, and 2 feet of gravel storage.
- Amended soil strips: 18" of amended soil.

In addition, hydromodification is required because the Proposed Project increases the impervious area by more than 50%. Therefore, the post-project runoff for the entire site must not exceed the pre-project runoff for the 2-year, 24-hour storm event. Detention pipes and a detention pond are proposed to detain

the difference in volume. Compliance will be demonstrated in a separate hydrology report. As such, the Proposed Project would have a less than significant impact on groundwater. No mitigation is required.

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 onsite or offsite;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒

Less Than Significant Impact.

There are no water courses onsite, and Project construction would not result in the alteration of the course of a stream or river. The potential for erosion or siltation to occur during Project construction is discussed above, and implementation of the SWPPP required as a standard Project condition would ensure that this potential impact is less than significant.

The Proposed Project would alter the existing drainage pattern of the site; however, site runoff would be detained in onsite bioretention basins. The proposed system will mimic existing drainage patterns and capture/treat runoff before ultimately discharging to the Venture Parkway drainage ditch. The Proposed Project would not impede or redirect flood flows. Impacts to site drainage patterns would be less than significant.

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

No Impact.

A tsunami, or seismically generated sea wave, is generally created by a large, distant earthquake occurring near a deep ocean trough. A seiche is an earthquake-induced wave in a confined body of water, such as a lake or reservoir. Damage from tsunamis is confined to coastal areas that are 20 feet or less above sea level. Since the Project site is not located near the coast or any confined bodies of water, the risk of inundation from a tsunami or seiche is considered negligible. There would be no 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?	☐	☐	☐	☒

No Impact.

As stated above, the Proposed Project would be required to comply with SWPPP and NPDES regulations and would not obstruct or conflict with water quality control or sustainable groundwater management plans. There would be no impact and no mitigation is required.

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 irregular-shaped Project site is currently vacant grassland that is relatively flat, without trees, drainage improvements, or water bodies. The surrounding parcels feature similar grassland with some trees dispersed throughout. A small body of water exists on the property to the north. The Project site is within the approved Stillwater Business Park., approximately 0.75 miles northeast of the Redding Municipal Airport and 1.3 miles southeast of the intersection of Airport Road and Venture Parkway. The parcel is designated General Industry – Planned Development in the City of Redding General Plan and is zoned Heavy Industrial.

The State of California and state-owned land, such as the CAL FIRE parcel, are not subject to local city or county land use and zoning regulations. However, the state is subject to the requirement under CEQA to assess Project-related impacts that may occur as a result of conflicts between existing and proposed land uses.

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

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

No Impact.

Projects such as a railroad line, major highway, or water canal may result in physically dividing an established community by removing existing roadway connections, walkways and bike paths and other types of links between community areas. This may result in the division of an existing community by removing those connections. The Proposed Project involves relocation of the SHU HQ and CNR HQ facilities to a new co-located facility in the Stillwater Business Park. No removal of roadways or other connections to the surrounding community would occur. No impact will occur, and no mitigation is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

No Impact.

The State of California and state-owned land, such as a CAL FIRE facility, are not subject to local city or county land use and zoning regulations. Although the state is not subject to local land use and zoning regulations, local land use regulations were considered in this IS/MND. The Project as proposed does not conflict with any local regulations. Therefore, the Proposed Project would have no impact in this area. No mitigation is required.

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

Minerals are defined as any naturally occurring chemical elements or compounds formed by inorganic processes and organic substances. Minable minerals are defined as a deposit of ore or minerals having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the project area. The conservation, extraction, and processing of mineral resources is essential to meeting the needs of society.

The Surface Mining and Reclamation Act of 1975 (SMARA) states that cities and counties shall adopt ordinances "...that establish procedures for the review and approval of reclamation plans and financial assurances and the issuance of a permit to conduct surface mining operations..." (PRC Section 2774). The intent of this legislation is to ensure the prevention or mitigation of the adverse environmental impacts of mining, the reclamation of mined lands, and the production and conservation of mineral resources are consistent with recreation, watershed, wildlife, and public safety objectives (PRC Section 2712).

SMARA requires the State Geologist to classify land into Mineral Resource Zones (MRZ) according to the known or inferred mineral potential of that land. The process is based solely on geology, without regard to existing land use or land ownership. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision makers and considered before land use decisions, which could preclude mining, are made. Areas subject to California mineral land classification studies are divided into the following MRZ categories that reflect varying degrees of mineral potential:

- MRZ-1: Areas of no mineral resource significance
- MRZ-2: Areas of identified mineral resource significance
- MRZ-3: Areas of undetermined mineral resource significance
- MRZ-4: Areas of unknown mineral resource significance

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

No Impact.

According to Mineral Land Classification maps located on the California Department of Conservation website, the Project site is not located in an MRZ. The Proposed Project will not result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state because there are no MRZs placed on the Project site. The State of California Division of Mines and Geology published Open File Report 97-03, Mineral Land Classification of Alluvial Sand and Gravel. Crushed Stone, Volcanic Cinders, Limestone and Diatomite within Shasta County, California to identify the mineral potential of land. There are no mining activities being conducted on or near the site and no mining activities are planned for the site. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No Impact.

The Proposed Project would not 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, because no mining operations exist on or adjacent to the Project site. Therefore, no impact would occur.

4.12.3 Mitigation Measures

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

4.13 Noise

This section documents the results of a *Noise Impact Assessment*, prepared for the Proposed Project in July 2023 (ECORP 2023g; Appendix I), as a comparison of predicted Proposed Project noise levels to noise standards promulgated by the City of Redding Municipal Code. The purpose of this section is to estimate Project-generated noise levels and determine the level of impact the Proposed Project would have on the environment. This section describes the existing environmental and regulatory conditions specific to noise and addresses the potential impact posed by the Proposed Project.

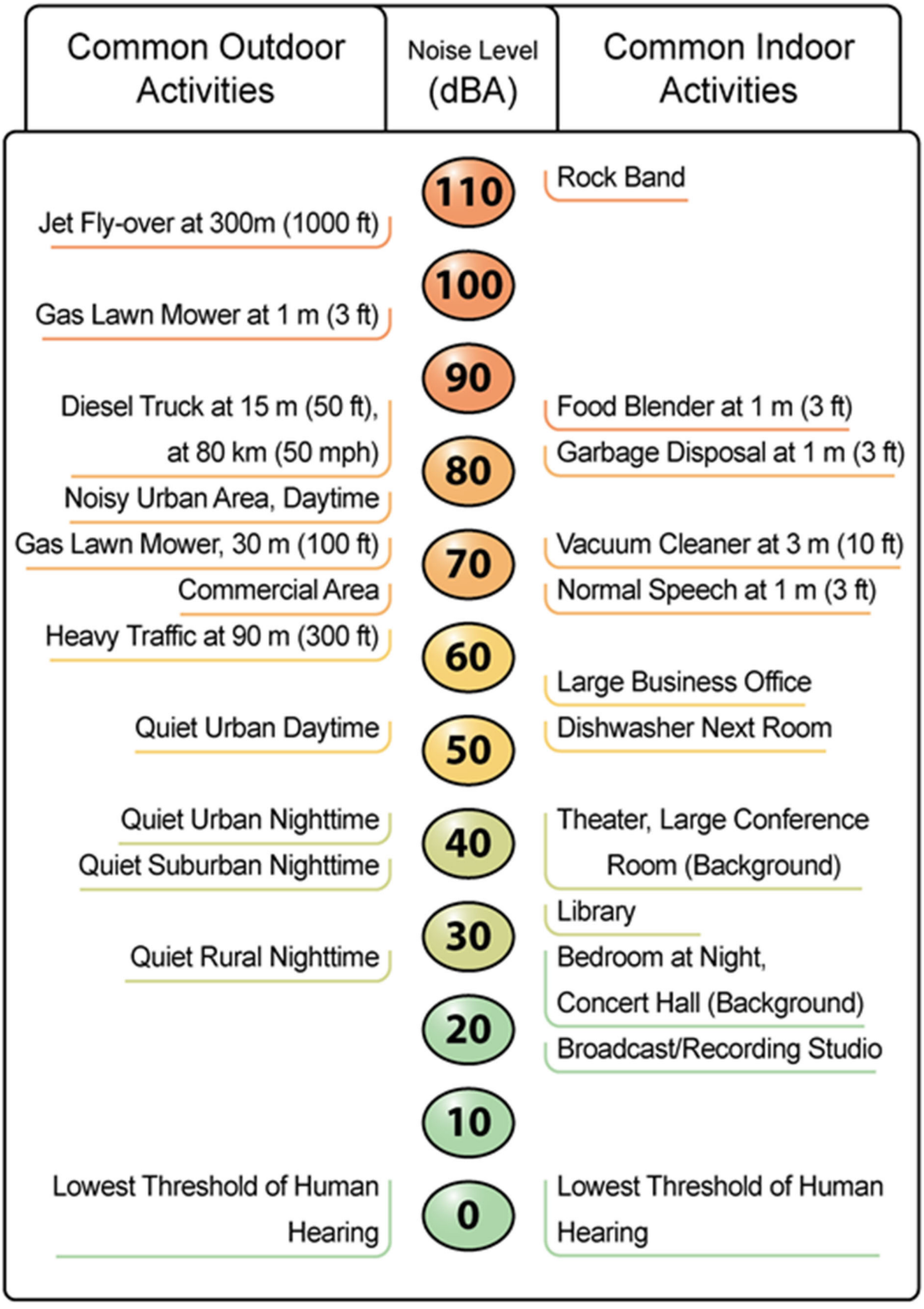
4.13.1 Environmental Setting

4.13.1.1 Fundamentals of Noise and Environmental Sound

Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 4.13-1. Common Noise Levels.



Source: Caltrans

Figure 4.13-1. Common Noise Levels

Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (Federal Highway Administration [FHWA] 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations). In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

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

Table 4.13-1 provides a list of other common acoustical descriptors.

Table 4.13-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.

Table 4.13-1. Common Acoustical Descriptors

Descriptor	Definition
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the Leq 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.
Lmax, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average Leq with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
Community Noise Equivalent Level, CNEL	A 24-hour average Leq with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The A-weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

Human Response to Noise

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

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL or Ldn is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response is expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The Ldn as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

4.13.1.2 Fundamentals of Environmental Groundborne Vibration

Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manufactured causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 4.13-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be

perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 4.13-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 4.13-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/ second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Threshold at which there is a risk of architectural damage to extremely fragile historic buildings, ruins, ancient monuments
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Threshold at which there is a risk of architectural damage to fragile buildings. Virtually no risk of architectural damage to normal buildings
0.25	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to historic and some old buildings
0.3	96	Vibrations may begin to feel severe to people in buildings	Threshold at which there is a risk of architectural damage to older residential structures
0.5	103	Vibrations considered unpleasant by people subjected to continuous vibrations	Threshold at which there is a risk of architectural damage to new residential structures and Modern industrial/commercial buildings

Source: California Department of Transportation (Caltrans) 2020b

4.13.1.3 Noise Sensitive Land Uses

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

The Project Site is currently undeveloped. The nearest noise-sensitive receptors to the Project Site are rural residences located approximately 1,050 feet northwest of the Project Site, fronting Desperado Trail.

Existing Ambient Noise Environment

The Project Site is currently vacant grassland that is relatively flat, without trees, drainage improvements, or water bodies. The Project Site is located in a rural part of the City and is surrounded mainly by undeveloped land and rural residential land uses. The most common and significant source of noise in the Project Area is aircraft noise generated from Redding Municipal Airport. As shown in Table 4.13-3, the ambient recorded noise levels range from 45.9 dBA to 58.8 dBA Leq in the vicinity of the Project Site.

Existing Ambient Noise Measurements

In order to quantify existing ambient noise levels in the Project Area, ECORP Consulting, Inc. conducted three short-term noise measurements (15 minutes) in the areas surrounding the Project Site on the morning of July 12, 2023. These short-term noise measurements are representative of typical existing noise exposure immediately adjacent to the Project Site during the daytime (Appendix I). The 15-minute measurements were taken between 10:20 a.m. and 11:27 a.m. The average noise levels at each location are listed in Table 4.13-3.

Table 4.13-3. Existing (Baseline) Noise Measurements

Location Number	Location Number	L_{eq} dBA	L_{min} dBA	L_{max} dBA	Time
1	Venture Parkway and Desperado Trail intersection.	**45.9**	29.6	66.8	10:20 a.m. – 10:35 a.m.
2	Cul-de-sac/end of pavement on Venture Parkway.	**49.2**	28.5	67.8	10:39 a.m. – 10:54 a.m.
3	Ramblewood Lane and Whispering Oaks Road intersection.	**58.8**	22.5	87.5	11:12 a.m. – 11:27 a.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Appendix A for noise measurement outputs.

Notes: L_{eq} is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. L_{min} is the minimum noise level during the measurement period and L_{max} is the maximum noise level during the measurement period.
dBA = A-weighted decibels

As shown in Table 4.13-3, the ambient recorded noise levels range from 45.9 dBA to 58.8 dBA L_{eq} over the course of the three short-term noise measurements taken in the Project vicinity. The most common and significant source of noise in the Project Area is aircraft noise generated from the Redding Municipal Airport as well as automotive vehicles (e.g., cars, trucks, buses, motorcycles) on area roadways.

4.13.2 Regulatory Setting

4.13.2.1 Federal

Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

National Institute of Occupational Safety and Health

A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

4.13.2.2 State

State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (Office of Planning and Research [OPR] 2003), published by the OPR, also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

California Department of Transportation

In 2020, the Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2020). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage. Table 4.13-2 above presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

4.13.2.3 Local

City of Redding General Plan

The City of Redding Noise Element of the *General Plan* establishes goals and policies addressing major noise sources within the community. The following provides the applicable goals, policies, and criteria for evaluating the feasibility and potential noise impact associated with the Proposed Project:

Goal N2: Protect Residents from Exposure to Excessive Transportation-Related Noise.

- Policy N2B: Prevent development of new projects which contain noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation sources with exceed the levels specified in Table 4.13-4 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in the Table.

Table 4.13-4. Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	–
Transit Lodging	60[3]	45	–
Hospitals, Nursing Homes	60[3,4]	45	–
Theaters, Auditoriums, Music Hall	–	–	35
Churches, Meeting Halls	60[3]	–	40
Office Buildings	–	–	45
Schools, Libraries, Museums	–	–	45
Playgrounds, Neighborhood Parks	70	–	--

Source: City of Redding 2020
Notes: CNEL = Community Noise Level; dB = decibel; L_{dn} = Day-Night Average; L_{eq} = Equivalent Noise Level

Table 4.13-4. Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[2]

[1]The exterior noise level standards shall be applied to the outside activity area of the receiving land use. Outdoor activity areas are normally located near or adjacent to the main structure and often occupied by porches, patios, and balconies.
[2]As determined for a typical worst-case hour during periods of use.
[3]Where it is not possible to reduce noise in outdoor activity areas to 60 dBA L_{dn}/CNEL or less, using a practical application of the best available noise reduction measures, higher exterior noise levels may be allowed provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this Table.
[4]In the case of hotel/motel facilities or other transient lodging, outdoor activity areas, such as pool areas, may not be included in the project design. In these cases, only interior noise-level criterion will apply.

Policy N2C: *Mitigate noise created by new transportation noise sources consistent with the levels specified in Table 4.13-4 in outdoor-activity areas and interior spaces of existing noise sensitive land uses.*

Policy N2E: *Require acoustical analysis for noise sensitive land uses proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 4.13-4 or the performance standards of Table 4.13-5 to determine mitigation for inclusion in the project design.*

Table 4.13-5. Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	55	45

Source: City of Redding 2020
Notes: Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply for residential units established in conjunction with industrial or commercial uses. The City can impose noise level standards which are more restrictive that those specified above based upon determination of existing low ambient noise levels.
Industrial, light industrial, commercial, and public service facilities which have the potential for producing objectionable noise levels at nearby noise sensitive uses are dispersed throughout the City. Fixed noise sources which are typically of concern include, but are not limited to, the following: Heating, Vacuum and Air Conditioning (HVAC) systems, generators, air compressors, outdoor speakers, fans and blowers (this list only includes equipment applicable for the Proposed Project).
dB = decibel; Leq = Equivalent Noise Level;

Policy N2G: *Enforce existing applicable sections of the California Vehicle Code related to vehicle or equipment mufflers and modified exhaust systems.*

Policy N2I: Require that development in the vicinity of Redding Municipal Airport and Benton Airpark complies with the noise standards of the Comprehensive Land Use Plan for each facility.

Goal N3: Protect the economic base of the City of Redding by preventing incompatible land uses from encroaching upon existing or planned noise producing uses.

Policy N3A: Prohibit the development of noise sensitive uses where the noise level due to non-transportation sources will exceed the noise level standards of Table 4.13-5 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 4.13-5.

Policy N3B: Mitigate noise created by new proposed non-transportation sources consistent with the noise level standards of Table 4.13-5 as measured immediately within the property line of lands designated for noise sensitive land uses. Noise level standards for non-noise sensitive uses will generally be 10 dB higher before mitigation is required.

Policy N3C: Require acoustical analysis of new nonresidential land uses and the expansion of existing nonresidential land uses if likely to produce noise levels exceeding the performance standards of Table 4.13-5 within the property line of existing or planned noise sensitive uses.

City of Redding Municipal Code

The Redding Municipal Code, Section 18.40.100, *Noise Standards*, specifies additional noise regulations pertaining to the allowable exterior noise levels based upon the time of day and land use category. The City's Noise Ordinance was established in order to control unnecessary, excessive, and annoying noise while protecting public health, safety, and welfare. These noise standards are presented in Table 4.13-6.

Table 4.13-6. Exterior Noise Standards

Zone	Time Period	Noise Level (Hourly L_{eq}/dB)
Residential	10:00 p.m.- 7:00 a.m.	45
	7:00 a.m. to 10: 00 p.m.	55
Office/Commercial	10:00 p.m.- 7:00 a.m.	55
	7:00 a.m. to 10: 00 p.m.	65
Industrial	10:00 p.m.- 7:00 a.m.	N/A[1]
	7:00 a.m. to 10: 00 p.m.	N/A[1]

Source: City of Redding 2023b
Notes: [1]Industrial Noise shall be measured at the property line of any nonresidential district.
dB = decibel; Leq = Equivalent Noise Level; N/A = Not Applicable

Additionally, Section 18.40.100 prohibits the operation of any tools or equipment used in construction, alteration, or demolition work in or within five hundred feet of a residential district such that the sound creates a noise disturbance across a property line during the following times:

- May 15 through September 15: Between the weekday hours of 7:00 p.m. and 6:00 a.m. and weekends and holidays between 8:00 p.m. and 9:00 a.m.
- September 16 through May 14: Between the weekday hours of 7:00 p.m. and 7:00 a.m. and weekends and holidays between 8:00 p.m. and 9:00 a.m.

Further, per Section 18.40.100 of the City's Municipal Code, warning devices for the protection of public safety are exempt from all noise standards.

4.13.2.4 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would result in the:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

For the purposes of this analysis, Project construction noise is compared to the allowable hours of construction mandated by the City as well as the NIOSH standard of 85 dBA for more than 8 hours per day, since construction work for the Proposed Project is anticipated to span a typical workday of 8 hours daily. The City does not regulate vibrations associated with construction or operations. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020b) recommended standard of 0.3 inch 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. The Project would not be a source of groundborne vibration during operations. Onsite noise sources produced by the Project will be compared to the exterior noise standards presented in the City's Municipal Code (Table 4.13-6) and transportation noise sources as a result of the Project will be compared to the maximum allowable noise exposure from transportation noise sourced presented in the City's General Plan (Table 4.13-4).

4.13.2.5 Methodology

This analysis of the existing and future noise environments is based on empirical observations and noise prediction modeling. Predicted construction noise levels were calculated utilizing the FHWA's Roadway

Construction Noise Model (2006). Groundborne vibration levels associated with construction-related activities for the Project have been evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance.

Onsite stationary source noise levels associated with the Project have been calculated with the SoundPLAN 3D noise model, which predicts noise propagation from a noise source based on the location, noise level, and frequency spectra of the noise sources as well as the geometry and reflective properties of the local terrain, buildings, and barriers. Transportation-source noise levels were calculated using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108).

4.13.3 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less Than Significant Impact.

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. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest noise-sensitive receptors to the Project Site are rural residences located approximately 1,050 feet northwest. The City does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Instead, construction noise is regulated by allowable hours of construction. Section 18.40.100 of the City's Municipal Code prohibits construction

within five hundred feet of a residential district between the weekday hours of 7:00 p.m. and 6:00 a.m. and weekend and holiday hours of 8:00 p.m. and 9:00 a.m., May 15 through September 1. Additionally, Section 18.40.100 of the City's Municipal Code prohibits construction within five hundred feet of a residential district between the weekday hours of 7:00 p.m. and 7:00 a.m. and weekends and holiday hours of 8:00 p.m. and 9:00 a.m., September 16 through May 14. The Project is required to adhere to these construction timing limitations.

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

The anticipated short-term construction noise levels generated for the necessary equipment for each phase of construction are presented in Table 4.13-7.

Table 4.13-7. Construction Average (dBA) Noise Levels at Nearest Receptors

Construction Phase	Estimated Exterior Construction Noise Level @ Closest Noise Sensitive Receptor (dBA L_{eq})	NIOSH Construction Noise Standard (dBA L_{eq})	Exceeds Standard?
Site Preparation	61.2	*85*	**No**
Grading	61.8	*85*	**No**
Building Construction, Paving & Architectural Coating	62.7	*85*	**No**

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

Notes: Construction equipment used during construction provided by the California Emissions Estimator Model (CalEEMod 2022.1.1.14).
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.
dBA = A-weighted decibel

As shown in Table 4.13-7, construction activities would not exceed the applicable noise standards. It is noted that construction noise was modeled on a worst-case basis. It is unlikely that all pieces of construction equipment would be operating at the same time for the various phases of Project construction. Therefore, temporary impacts resulting from project construction would be less than significant.

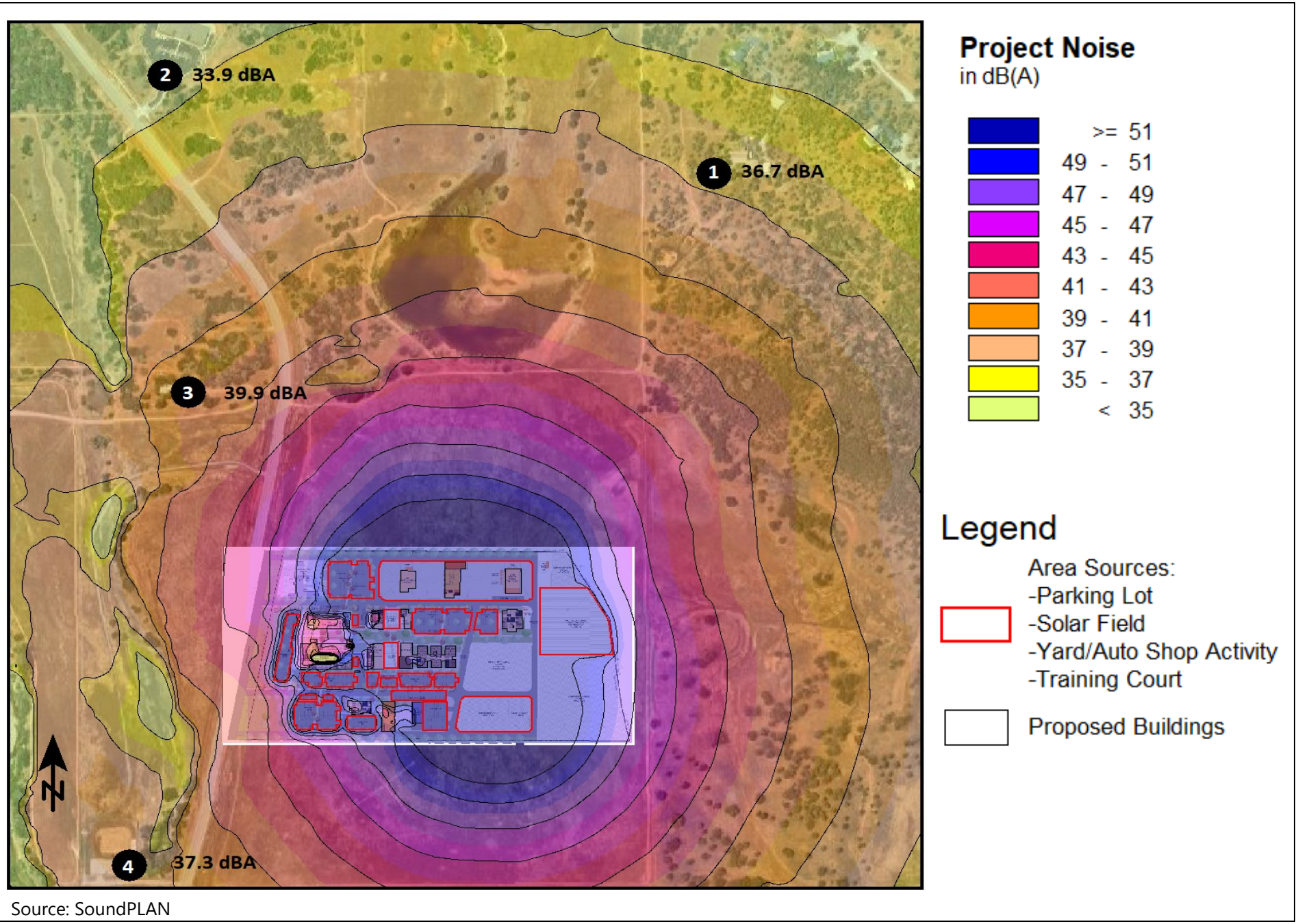
Onsite Operational Noise

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive receptors to the Project Site are rural residences located approximately 1,050 feet northwest.

The Project is proposing the construction and relocation of the existing SHU HQ as well as several CNR facilities and programs. On-site noise associated with the Proposed Project has been calculated using the SoundPLAN 3D noise model. The modeling scenario accounts for all major noise producing activity on the Project Site such as:

- Parking lot activity (i.e., people talking, internal circulation, car doors opening and closing, stereo music).
- Activity at the auto shop, dozer & mobile command building, and service center warehouse.
- Activity at the training courts.
- Noise produced from the solar field.
- Activity at the corporation yard.

All noise sources were entered into SoundPLAN as area sources encompassing the whole noise producing area per the Project Site Plan. Table 4.13-8 shows the predicted Project noise levels at the nearest noise-sensitive location, the rural residences located northwest of the Project Site fronting Desperado Trail as well as three additional locations in the Project Area, as predicted by SoundPLAN. Additionally, a noise contour graphic for each scenario (Figure 4.13-2) has been prepared to provide a visual depiction of the predicted noise levels in the Project vicinity from Project operations. It is noted that the Project may utilize emergency sirens. This was not accounted for in the noise modeling but is discussed further in detail below.



Source: SoundPLAN

Figure 4.13-2. Modeled Operational Noise Levels

Table 4.13-8. Modeled Operational Noise Levels

Location	Modeled Operational Noise Attributed to the Project (dBA L_{eq})	Daytime/ Nighttime Exterior Noise Standards (dBA L_{eq})	Exceed Daytime/ Nighttime Exterior Standard?
#1. Rural Residence off Whispering Oaks Road	36.7	*55/45*	**No/No**
#2. PACE Engineering North of Project Site	33.9	*65/55*	**No/No**
#3. Rural Residence off Desperado Trail	39.9	*55/45*	**No/No**
#4 Industrial/ Commercial Use Southwest of Project Site	37.3	*65/55*	**No/No**

Source: Construction noise levels were calculated by ECORP Consulting, Inc. using the Federal Highway Administration (FHWA) Roadway Noise Construction Model (2006). Refer to Appendix C for Model Data Outputs.

Notes: Construction equipment used during construction provided by the California Emissions Estimator Model (CalEEMod, 2022.1.1.14). The 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.
Leq = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the Leq 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.
dBA = A-weighted decibels

As shown in Table 4.13-8, Project operational noise would not exceed the daytime or nighttime exterior noise standards at any location in the Project Area.

Emergency Sirens

It is noted that emergency sirens may be utilized on the Project Site, considering the nature of the training activities and the vehicles that will be stationed or used there. As previously stated, the nearest noise-sensitive receptors to the Project Site are rural residences located approximately 1,050 feet northwest. Residential receptors and other noise-sensitive land uses in the immediate vicinity of the Project would experience periodic exposure to siren noise. The potential adverse effects of noise associated with the use of emergency vehicle sirens on the quality of life of nearby residents is often a concern in the development of the Proposed Project. Federal regulation limits emergency siren noise to 123 dBA at 10 feet. Factoring an attenuation rate of approximately 6 dBA per doubling of distance from the source equates to a noise level of approximately 103.5 dBA at 100 feet. Since emergency vehicle response is by nature rapid, the duration of exposure to this peak noise level is estimated to last for a maximum of 10 to 20 seconds as emergency vehicles enter and exit the Project Site via Venture Parkway. Thus, receptors would be exposed to very short-duration high noise levels for approximately 10 to 20 seconds for each emergency response event. Further, it is typical practice for emergency vehicles to use sirens to break traffic at intersections or warn drivers of the emergency vehicle approach when traffic is congested. It is

not unlikely in minor emergency scenarios that a siren is not used. Responses to nighttime emergency calls, when nuisance noise is most noticeable, routinely occur without the use of sirens when possible. It is also noted that the manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. 2006). Further, per Section 18.40.100 of the City's Municipal Code, warning devices for the protection of public safety are exempt from all noise standards.

A key focus of analysis with regard to noise is the potential for long-term exposure to higher noise levels (i.e., continuous, involuntary exposure for many hours per day over a long period of time) that may adversely affect human health. As a result of this emphasis, noise standards focus on increases in long-term exposure to ongoing average noise levels rather than infrequent short-duration peak effects. Siren noise from intermittent emergency vehicle trips sourced from the Project Site would not substantially change the community noise level for the Project vicinity as the intermittent siren use would not constitute a significant change in the existing noise environment.

Offsite Operational Traffic Noise

The Project Site will be accessible from Venture Parkway. According to the Project proponent, the Project would have 212 full time employees. As the Project Site would be used for multiple trainings and emergency events through the year a conservative estimate of 100 vehicles per day was added to the provided number of employees for a total of 312 daily trips. According to the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108), which calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions; the amount of roadway traffic on Venture Parkway produced by the Project generates an ambient noise level of 49.4 dBA CNEL at 100 feet from the centerline (see Appendix I). This number falls below the threshold for maximum allowable noise exposure from transportation noise sources on residential land uses presented in the City's General Plan Noise Element (Table 4.13-4). Thus, traffic as a result of Project operations would not exceed the City's standard.

Projects operational noise, including offsite traffic noise and use of emergency sirens, would have a less than significant impact.

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

Less Than Significant Impact.

Construction Ground-Borne Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term

construction-related activities. Construction on 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 4.13-9.

Table 4.13-9. Representative Vibration Source Levels for Construction Equipment

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

Source: California Department of Transportation (Caltrans) 2020b; Federal Transit Administration (FTA) 2018

The City of Redding 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 (2020b) 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. The nearest structure of concern to the construction site, with regard to groundborne vibrations, is an industrial/commercial building located approximately 700 feet southwest of the Project Site.

Based on the representative vibration levels presented for various construction equipment types in Table 4.13-9 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:

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

Table 4.13-10 presents the expected Project related vibration levels at a distance of 700 feet.

Table 4.13-10. Construction Vibration Levels at 700 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			
0.0006	0.0005	0.0002	0.0011	0.0014	0.0014	*0.3*	**No**

Note: in/sec = inches per second; PPV = Peak Particle Velocity

As shown in Table 4,13-10, 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. Impacts would be less than significant.

Operational Ground-Borne Vibration

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. Therefore, the Project would result in negligible groundborne vibration impacts during operations. 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) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project Area to excessive noise levels?	☐	☐	☐	☒

No Impact.

The nearest airport to the Project Site is the Redding Regional Airport, located northeast of Project Site. According to the City of Redding General Plan Noise Element Figure 5-1 and Figure 5-2, the Project Site is located outside of the existing and future noise contours (City of Redding 2020). Implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people working or residing on the Project Site to aircraft noise. There would be no impact.

4.13.4 Mitigation Measures

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

4.14 Population and Housing

4.14.1 Environmental Setting

The Proposed Project will relocate two CAL FIRE regional HQs to a new co-located facility within the Stillwater Business Park in the City of Redding, Shasta County. The California Department of Finance (2023) estimates the City of Redding's 2023 population to be 92,465 and Shasta County's to be 179,436.

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

No Impact.

The Proposed Project would not increase the number of homes or provide additional offsite infrastructure in the area. The project proposes to relocate existing public services facilities in the City of Redding; there would not be a substantial change in total personnel after project completion. Because the Project site is in close proximity to the existing facilities, there would be no need for CAL FIRE personnel to relocate. No impact would occur.

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

No Impact.

The Proposed Project would not displace any people or existing housing. CAL FIRE personnel would continue to operate from the existing HQs during construction and move into the new facility when construction is complete. No impact would occur.

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

4.15.1.1 Fire Services

The City of Redding Fire Department operates nine fire stations throughout the City. Fire Station 5, located at 955 Hartnell Ave, is nearest the Project site. The Proposed Project would relocate the existing SHU HQ, located at 875 Cypress Avenue, to a new facility to be constructed in the Stillwater Business Park. The Project also proposes to relocate several NOPS facilities and programs, including the existing CNR HQ facility located at 6105 Airport Road, to a new co-located SHU and CNR Headquarters. The SHU HQ would continue to serve greater Shasta County and nearby state parks and forests upon relocation.

4.15.1.2 Police Services

The Shasta County Sherriff's Office provides for the public safety of the community and is located at 300 Park Marina Circle, Redding. The Redding Police Department is located at 777 Cypress Ave, Redding.

4.15.1.3 Schools

The Shasta County Office of Education oversees several school districts throughout the County.

4.15.1.4 Parks

The City of Redding Department of Parks and Recreation oversees 41 city-owned and maintained parks and nine school-park sites. The SHU works with federal, state, and local government agencies and interfaces with two national forests (Shasta-Trinity and Lassen), two national parks (Lassen Volcanic and Whiskeytown National Recreation Area) and the California State Parks Northern Buttes District.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

No Impact.

There will be no impacts to public services associated with the Proposed Project, which will relocate exiting SHU and CNR services to a new co-located facility that would allow the Units to continue to provide high-quality fire protection and emergency-response service within the region. The Proposed Project does not require an expansion of residential housing and would not induce population growth. No impact would occur.

4.15.3 Mitigation Measures

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

4.16 Recreation

4.16.1 Environmental Setting

The City of Redding, Shasta County, and California Department of Parks and Recreation manage a variety of parks in the Project vicinity. As the Project proposes relocation of existing services to a new facility, none of the local or state parks in the region would be subject to additional use as a result of population increase.

4.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

No Impact.

The Proposed Project would not generate a substantial increase in the area population; therefore, it would not significantly increase the use of existing neighborhood or regional parks and recreational facilities. There would be no impact.

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

No Impact.

The Proposed Project does not include recreational facilities or require the construction or expansion of recreational facilities. There would be no impact.

4.16.3 Mitigation Measures

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

4.17 Transportation

On September 27, 2013, former Governor Edmund (Jerry) Brown, Jr. signed SB 743 into law and started a process that will fundamentally change transportation impact analysis conducted as part of CEQA compliance. The Governor's OPR was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service.

OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017 and a supporting technical advisory in December 2018. The updates establish vehicle miles traveled (VMT) as the metric for evaluating a project's environmental impacts on the transportation system. Lead agencies, including CAL FIRE, had until July 1, 2020, to implement these new requirements. The City of Redding has not yet adopted specific VMT metrics or thresholds of significance for transportation analysis.

OPR recommends that impact analysis be streamlined through Project screening. Projects identified as VMT-reducing or VMT-efficient projects have a presumption of a less than significant impact on VMT, and therefore do not require a full VMT assessment. OPR identifies the following project types as appropriate for screening:

- Projects that generate fewer than 110 daily trips
- Projects located in low-VMT areas
- Projects located in a Transit Priority Area
    - TPAs are defined as areas within ½ mile of an existing major transit stop or existing stop along a high-quality transit corridor with headways of 15 minutes of less.
- Projects that are affordable housing developments

4.17.1 Environmental Setting

4.17.1.1 Venture Parkway

Venture Parkway runs north-to-south from its inception at the eastern end of Rancho Road at the northern end of the Stillwater Business Park, through the business park, to its conclusion at the intersection with Fig Tree Lane. Venture Parkway is approximately 3.5 miles long, and the Project site is located along the eastern side of the road.

4.17.1.2 Rancho Road

Rancho Road runs west-to-east for approximately 2.5 miles and connects Interstate 5 to Venture Parkway.

4.17.1.3 Interstate 5

Interstate 5 runs north-to-south through the State of California and connects the City of Redding to Sacramento in the south and Mount Shasta in the north. The Project site is located approximately 3.5 miles east of Interstate 5 as the crow flies. The SHU responds to emergency incidents in the Shasta-Trinity National Forest via Interstate 5 and would continue to do so after Proposed Project construction.

4.17.1.4 State Route 44

State Route 44 runs west-to-east from the City of Redding to Lassen Volcanic National Park, north of the Project site. The SHU responds to emergency incidents in the Lassen Volcanic National Park and Lassen National Forest via State Route 44 and would continue to do so after Proposed Project construction.

4.17.1.5 Airport Road

Airport Road runs north-to-south from State Route 44, through its intersection with Rancho Road/Venture Parkway (where the road changes names), past the Redding Regional Airport, until its conclusion where it connects to Interstate 5 via North Street.

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?	☐	☐	☒	☐

Less Than Significant Impact.

Short-term construction trips would include the transfer of construction equipment, construction worker trips, and hauling trips for construction materials; however, impacts in this regard would be temporary in nature and would cease upon Project completion. Long-term operation of the Project would not generate a significant increase in vehicle trips that would adversely affect the circulation system because the project proposes relocation of existing operations. The new co-located facility would improve wildfire response times by moving the SHU HQ out of downtown Redding. No Project components would require removal of vehicular lanes such that capacity would be reduced, or that would affect transit service. Impacts would be less than significant.

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

Less Than Significant Impact.

CEQA Guidelines Section 15064.3 subdivision (b) addresses the criteria for analyzing transportation impacts and establishes the VMT metric as the most appropriate measure of transportation impacts in a CEQA document. The City of Redding has not yet adopted specific VMT metrics or thresholds of significance for transportation studies in accordance with CEQA Guidelines § 15064.3, subdivision (b). However, OPR has identified projects generating less than 110 daily trips as appropriate for screening from VMT analysis. Proposed Project staffing would be similar to the current condition at the existing SHU HQ and CNR HQ. The Project would generate less than 110 daily net new trips and would therefore be screened from VMT analysis according to the OPR recommendations. Impacts are less than significant.

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)?	☐	☐	☒	☐

Less Than Significant Impact.

The proposed circulation would be reviewed by the Office of the State Fire Marshall for adequacy. The site plan provides separate dedicated walkways for pedestrians. The Project would not introduce transportation hazards and related impacts are 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?	☐	☐	☒	☐

Less Than Significant Impact.

During CAL FIRE's required review of the Project's applications, Project design would be reviewed to ensure that adequate access to and from the site is provided for emergency vehicles. The Project site plan includes internal circulation and multiple points of ingress/egress along Venture Parkway. In addition, the project site offers CAL FIRE improved access to the regional transportation system for emergency compared to the existing facility locations. Impacts would be less than significant.

4.17.3 Mitigation Measures

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

4.18 Tribal Cultural Resources

4.18.1 Environmental Setting

4.18.1.1 Ethnographic History

The Project Area is in the unceded territory of the Wintu tribe. Wintu territory encompassed portions of present-day Trinity, Tehama, Shasta, and Siskiyou counties. The territory is bounded in the southeast by the South Fork Trinity River, in the southwest by Beegum and Little Cow Creeks, and in the north by Mount Shasta. There were nine major groups of Wintu in the region: *Nomti-pom* (upper Sacramento valley), *Wenemem* (McCloud), *Dawpom* (Stillwater), *Elpom* (Keswick,), λ'abal-pom (French Gulch), *Nomsu* (Upper Trinity Valley), *Dawnom* (Bald Hills), *Norelmaq* (Hayfork), and *waymaq* (upper McCloud River valley). The Wintu language is in the Penutian Language family and is part of the Wintuan language group that includes the Wintu, the Nomlaki, and the Patwin Indians (ECORP 2023d).

The Wintu hunted deer, brown bears, quails, rabbits, rats, squirrels, and birds. They mostly fished Chinook salmon and steelhead, but also collected suckers, mussels, and clams. The family units would collect acorns, buckeye, manzanita berries, Indian potatoes, snake's head, clover, miner's lettuce, skenkbush, hazel nuts, pine nuts, and wild grapes. The Wintu would also cultivate many plants for medicine, such as pennyroyal, Oregon grape, soaproot, milkweed, and salt. (ECORP 2023d).

Village structures included bark houses, steam houses, menstrual huts, and the earth lodge. The bark houses were the family unit's main shelter. Bark houses were conical and made of lashed together poles covered in bark or branches of evergreen. Steam houses and menstrual huts were domed brush shelters. The semi-subterranean earth lodges were the largest structures, ranging from 15-20 feet in diameter with a center pole. The earth lodge was used by men for gatherings, sweating, shaman initiation, and for the single men to sleep during the winter months (ECORP 2023d).

The family unit was the basic organization unit for the Wintu people, and the village served as the focus of social, political, and economic organization. The chieftainships were ostensibly hereditary, passing from father to eldest son; however, it was necessary that the son be deemed worthy by the villagers. The Wintu were generally known to be a peaceful people, but they did engage in warfare. Wintu wars were typically the result of feuds between individuals or neighboring groups, and these conflicts were generally limited in their scope and severity by strong bonds of kinship. The Wintu used weapons such as bows and arrows, clubs, thrusting spears, daggers, and slings. The Wintu funerary practices required an individual to be buried on the same day that they died, or as soon as their relatives arrived. Individuals were buried in a crouched position, with their elbows placed between their knees and their hands placed on their cheeks. They were then bundled in a deer or bearskin and buried. Funerary objects included personal effects of the deceased, the deceased's dog, and a basket of acorn meal water (ECORP 2023d).

Prior to the contact of European, the Wintu population estimated to have been over 14,000. A malaria epidemic swept through the Central and Upper Sacramento Valley in 1830-1833 and it took the lives of 75 percent of the population. As settlers moved into the region, the Wintu 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 Wintu population, and by 1910 the Wintu population is estimated to have been 395. In the 20th century, dams were constructed, dispersing the last large concentrations of Wintu as much of their habitable land was inundated. The Wintu population in 1971 is estimated to have reached 900. Today, the descendants of the Wintu are members of Redding Rancheria, Winnemum Wintu Tribe, and Wintu Tribe of Northern California.

4.18.2 Regulatory Setting

CEQA, as amended in 2014 by AB 52, requires that CAL FIRE provide notice to any California Native American tribes that have requested notice of projects subject to CEQA review, and consult with tribes that responded to the notice within 30 days of receipt with a request for consultation. Section 21073 of the PRC defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes. For CAL FIRE, the following tribes previously submitted general request letters, requesting such noticing:

- Pechanga Band of Luiseno Indians;
- Elk Valley Rancheria;
- San Manuel Band of Mission Indians;
- United Auburn Indian Community;
- Soboba Band of Luiseno Indians;
- Paskenta Band of Nomlaki Indians;
- Pit River Tribe;
- Morongo Band of Mission Indians;
- Wilton Rancheria;
- Wiyot Tribe;
- Rincon Band of Luiseno Indians; and
- Mishewal Wappo Tribe of Alexander Valley

The purpose of consultation is to identify TCRs that may be significantly impacted by the Proposed Project and to allow CAL FIRE to avoid or mitigate significant impacts prior to Project approval and implementation. Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

- Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

  a) included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or

  b) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

  c) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1, for the purposes of this paragraph the lead agency shall consider the significance of the resource to a California Native American tribe.

Because the first two criteria also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators and can only be identified by a culturally affiliated tribe, which has been determined under State law to be the subject matter expert for TCRs.

CEQA requires that CAL FIRE initiate consultation with tribes at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on

the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures. Therefore, in accordance with the requirements summarized above, CAL FIRE conducted or attempted to conduct tribal consultation for the Project. The methods and results of tribal consultation are summarized below.

4.18.2.1 Summary of AB 52 Tribal Consultation

Within 14 days of initiating CEQA review for the Project, on July 13, 2023, CAL FIRE sent Project notification letters to the 12 California Native American tribes, whose contact information was identified on a list that . CAL FIRE obtained from the NAHC. On September 1, 2023, CAL FIRE re-sent the notification letters with corrected contact information. The letter provided each tribe with a brief description of the Project and its location, the contact information for CAL FIRE's authorized representative, and a notification that the tribe has 30 days to request consultation. A copy of the Non-Confidential Tribal Consultation Record is provided in Appendix D.

San Manuel Band of Mission Indians

On July 20, 2023, Bonnie Bryant with Yuhaaviatam (formerly known as the San Manuel Band of Mission Indians) responded via email and thanked CAL FIRE for the opportunity to review the Project and stated that it is located outside of their ancestral territory and has declined to consult, and therefore, the threshold for conducting tribal consultation with that tribe under PRC 21080.3.1(e) was not met. No further attempts at consultation were required by state law.

Mishewal Wappo Tribe of Alexander Valley

The notice of opportunity addressed to Vincent Salsedo with the Mishewal Wappo Tribe of Alexander Valley was returned as "Not Deliverable As Addressed-Unable to Forward." No updated mailing address was provided to resend the letter; therefore, no further attempts at consultation were required by state law.

Paskenta Band of Nomlaki Indians

On July 21, 2023 Mr. Laverne Bill, THPO, responded to the initial consultation letter sent on July 13, 2023. Mr. Bill stated that the Project is located within the aboriginal territory of the Paskenta Band of Nomlaki Indians and the tribe has a cultural interest in the project. He requested a formal coordination meeting with the lead agency.

CAL FIRE re-sent initial consultation letters with updated contact information on September 1, 2023. Mr. Bill responded on September 28, 2023. He stated that a TCR, as defined in PRC 21074, is located in proximity to the proposed Project. Due to this proximity, Mr. Bill requested a cultural awareness training prior to any ground disturbing work.

Mr. Len Nielson replied on October 25, 2023 that CAL FIRE did not find evidence of a TCR and requested supporting evidence from the Tribe.

Mr. Bill responded on November 27, 2023 and provided additional evidence to support the identification of a TCR in proximity to the Project. A cultural awareness training was specifically requested to be provided to construction personnel to assist in the identification of TCR's.

On December 21, 2023, Mr. Nielson replied to Mr. Bill and stated that CAL FIRE understood the Tribe's concerns. CAL FIRE had drafted the following mitigation measures:

CUL-1: **Inadvertent Discovery.** The following mitigation measures are intended to address the evaluation and treatment of inadvertent/unanticipated discoveries of potential tribal cultural resources (TCRs), archaeological, or cultural resources during the project's ground disturbing activities:

- If any subsurface deposits are encountered during ground disturbing activities that are believed to be cultural or human in origin, all work shall cease within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, 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:

  1. If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
  2. If the professional archaeologist determines 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 by CEQA or a historic property under Section 106 of the NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the resource 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.
  3. If the find is pre-contact in nature, then a Tribal Representative from a Native American tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified. In this case, mitigation measure TCR-1 shall be followed.

TCR-1: **Unanticipated Discovery of Tribal Cultural Resources.** If potentially significant TCRs are discovered during ground disturbing activities, all work shall cease within 100 feet of the find. A Native American Representative from traditionally and culturally affiliated Native American Tribes that requested consultation on the Project shall be immediately contacted and invited to assess the significance of the find, make recommendations for further evaluation and treatment, and may be requested to provide worker training to recognize

sensitive cultural resources, as necessary. If deemed necessary by CAL FIRE, a qualified cultural resources specialist, who meets the Secretary of Interior's Standards and Qualifications for Archaeology, may also assess the significance of the find in joint consultation with Native American representatives to ensure that Tribal values are considered. Work at the discovery location cannot resume until CAL FIRE, in consultation, as appropriate, and in good faith determines that the discovery is either not a TCR, or has been subjected to culturally appropriate treatment, if avoidance and preservation cannot be accommodated.

Non-Responding Tribes

The Pechanga Band of Luiseno Indians, Elk Valley Rancheria, United Auburn Indian Community, Soboba Band of Luiseno Indians, Pit River Tribe, Morongo Band of Mission Indians, Wilton Rancheria, Wiyot Tribe, Rincon Band of Luiseno Indians, nor the Mishewal Wappo Tribe of Alexander Valley responded to CAL FIRE's notification letter, and therefore the threshold for conducting tribal consultation with those tribes under PRC 21080.3.1(e) was not met. No further attempts at consultation were required by state law.

Since none of these tribes responded, or stated the project was outside of their ancestral territory, other sources were reviewed to determine potential impacts to TCRs. Sources consulted included the ethnographic history context, ethnographic maps, and results of the records search with the CHRIS, which are all incorporated into the cultural resources report. In summary, the ethnographic information reviewed for the Project did not identify any villages, occupational areas, or resource procurement locations in or around the current Project Area. The cultural resources records search did not reveal any Native American archaeological sites within the Proposed Project Area.

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

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

Less Than Significant With Mitigation Incorporated.

The National Register Information System failed to reveal any eligible or listed properties within the Project Area. The nearest National Register properties are located approximately 9 miles northwest of the Project Area in the City of Redding.

A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources or sacred lands in the Project Area. A record of all correspondence is provided in Appendix D.

Examination of the lines of evidence summarized above indicate that this Project will not have an impact on known TCRs. However, there exists a potential for the discovery of previously unknown TCRs during Project construction. If TCRs are encountered, the Project activity could result in a significant impact to those resources. Implementation of unanticipated discovery procedures, as provided in Mitigation Measure CUL-1, CUL-2 and TCR-1, would reduce that impact to less than significant.

4.18.4 Mitigation Measures

TCR-1: **Unanticipated Discovery of Tribal Cultural Resources.** If potentially significant TCRs are discovered during ground disturbing activities, all work shall cease within 100 feet of the find. A Native American Representative from traditionally and culturally affiliated Native American Tribes that requested consultation on the Project shall be immediately contacted and invited to assess the significance of the find, make recommendations for further evaluation and treatment, and may be requested to provide worker training to recognize sensitive cultural resources, as necessary. If deemed necessary by CAL FIRE, a qualified cultural resources specialist, who meets the Secretary of Interior's Standards and Qualifications for Archaeology, may also assess the significance of the find in joint consultation with Native American representatives to ensure that Tribal values are considered. Work at the discovery location cannot resume until CAL FIRE, in consultation, as appropriate, and in good faith determines that the discovery is either not a TCR, or has been subjected to culturally appropriate treatment, if avoidance and preservation cannot be accommodated.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

The Stillwater Business Park Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (SCH# 2001032106) previously evaluated full buildout of the Stillwater Business Park. As such, the utilities infrastructure installed by the City of Redding has been sized to accommodate full buildout of the business park, including the Project site.

4.19.1.1 Water

The City of Redding will provide potable water service to the site. The 16-inch water main located in Venture Parkway is sufficient to serve the site. The water system that will serve the Project site is 8 inches and will connect to the 16-inches water main at two points. A water valve and water meter are proposed at each connection. The system will be looped and supply domestic, and fire demands to all structures and hydrants. A fire pump will be installed to boost pressure for the fire suppression system. New domestic water and fire water distribution systems will be installed in each building. Additional fire water improvements include storage tanks, pump and pressure system, fire hydrants, and backflow prevention.

4.19.1.2 Stormwater

Per the City of Redding post-construction standards, the new development is classified as a regulated project (improvements greater than 5,000 sf) which will require storm treatment and hydromodification measures. The site naturally drains east to west and discharges to the drainage ditch along Venture Parkway. The proposed system will mimic existing drainage patterns and capture/treat runoff before ultimately discharging to the Venture Parkway drainage ditch. A series of bioretention basins are proposed in the center plaza of the site to treat impervious runoff from adjacent areas. The basins shall

provide an integrated design that is both functional and aesthetically pleasing. Runoff not treated by the bioretention basins will be captured and treated by a bioretention pond at the southwest corner of the campus. Amended strips are proposed throughout the site to treat surface flow runoff from select parking areas. Stormwater treatment and control measures such as LIDs and SDMs will be utilized to mitigate and treat stormwater runoff. Treatment areas will be sized according to the California Phase II LID sizing Tool. A combination of bioretention ponds (0.37 acres), bioretention basins (0.311 acres), and amended soil strips (0.304 acres) will be used to comply with the City of Redding requirements. The treatment measure sections proposed are as follows:

- Bioretention ponds: 2 feet deep with 2 feet soil, and 2 feet of gravel storage.
- Bioretention basins: 1 foot deep with 2 feet soil, and 2 feet of gravel storage.
- Amended soil strips: 18" of amended soil.

In addition, hydromodification is required because the Proposed Project increases the impervious area by more than 50%. Therefore, the post-project runoff for the entire site must not exceed the pre-project runoff for the 2-year, 24-hour storm event. Detention pipes and a detention pond are proposed to detain the difference in volume. Compliance will be demonstrated in a separate hydrology report.

4.19.1.3 Wastewater

The City of Redding would also provide wastewater collection for the Proposed Project. A new wastewater collection system will connect each building to the existing infrastructure in Venture Parkway. There will be one sanitary sewer line in each interior access road that will collect sewage from each adjacent building (two total). The lines will be 10 inches and connect to the 12-inch sanitary sewer main in Venture Parkway. Sewer stubs will be provided for the future development of parcels.

4.19.1.4 Electricity and Telecommunications

PG&E will provide electricity for the Project site. New underground electrical and telephone/broadband utility services will be installed and connected to the existing overhead joint utility lines located along Venture Parkway. New underground raceways for electrical, lighting controls, security, fire alarm, and telephone/broadband systems will be installed between each building.

As described above, a PV solar array will be constructed on canopies over several parking areas. The PV array will connect to the site's electrical system, providing approximately 120,000 kWh of electricity production per year.

4.19.1.5 Natural Gas

It is anticipated the Project site will be supplied with natural gas from the adjacent street PG&E gas main; to be confirmed upon design team engagement with PG&E.

4.19.1.6 Solid Waste

The City of Redding's Solid Waste Utility offers residential and commercial collection services and will serve the Project site. The City of Redding's Transfer Station and MRF is located at 2255 Abernathy Lane. The facility currently processes about 500 tons of garbage each day and has an operating capacity of 750 tons per day. All garbage is transferred to the West Central Landfill for disposal. The Solid Waste Utility also operates the West Central Landfill at 14095 Clear Creek Road, which is owned by the County of Shasta. The landfill accepts commercial and residential solid waste from everywhere in Shasta County (City of Redding 2023a).

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?	☐	☐	☒	☐

Less Than Significant Impact.

As discussed in Section 4.19.1, all Project utilities would be served by existing infrastructure installed underneath/along Venture Parkway. Onsite utilities were sized to accommodate development of the entire business park, including the project site. The Proposed Project is a relocation of existing regional emergency response services and would not constitute a significant increase in the use of any utility. The Project will pursue Leadership in Energy and Environmental Design (LEED) Silver certification and Zero Net Energy design. Impacts would be less than significant.

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

Less Than Significant Impact.

The City of Redding will supply water to the site. Proposed Project water demand will be similar to the existing SHU HQ and CNR HQ facilities' demand. Water use demand for the entire Stillwater Business Park was calculated and accounted for in the Stillwater Business Park EIS/EIR. 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) 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?	☐	☐	☒	☐

Less Than Significant Impact.

The City of Redding would also provide wastewater collection for the Proposed Project. A new wastewater collection system will connect each building to the existing infrastructure in Venture Parkway. Wastewater will flow south down the Clover Creek Interceptor to the Stillwater Wastewater Treatment Plant off Airport Road just north of the Sacramento River. Wastewater demand for the entire Stillwater Business Park was calculated and accounted for in the Stillwater Business Park EIS/EIR. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less Than Significant Impact.

Construction activities would generate solid waste. However, the solid waste generated would not exceed the capacity of local infrastructure/landfills and would not impair the attainment of solid waste reduction goals. The Project site will largely operate similar to existing HQ conditions and produce solid waste quantities similar to those currently generated at the existing sites. Related impacts are 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?	☐	☐	☒	☐

Less Than Significant Impact.

The California Integrated Waste Management (CIWM) Act requires every county to adopt an integrated waste management plan that describes county objectives, policies, and programs relative to waste

disposal, management, sources reduction, and recycling. The City Redding Solid Waste Utility reviews and approves all new construction projects required to submit a Construction Solid Waste Management Plan that is consistent with the CIWM Act. The disposal of solid waste due to construction activities will comply with all federal, state, and local statues and regulations. Impacts to solid waste statues and regulations will be 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

Generally, California wildfire season extends from spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in the air. These conditions, when combined with high winds and years of drought, increase the potential for wildfire to occur. CAL FIRE provides wildland fire protection services on public and private, non-federal lands for the purpose of life, property, and resource protection. U.S. Forest Service and Bureau of Land Management provide wildland fire protection services on federal lands in Federal Responsibility Areas for watershed and resource protection. Some areas are also identified as Local Responsibility Areas (LRAs).

The Project site is designated as a High Fire Hazard Severity Zone (FHSZ) by CAL FIRE's FHSZ Viewer, but is surrounded by Very High FHSZs in both State Responsibility Areas (SRAs) and LRAs at varying distances in all directions. The Project proposes to relocate the SHU HQ and CNR HQ to a new co-located facility that will better serve the responsibility areas as defined in Section 2.1. The Proposed Project would allow the new facility to provide high-quality fire protection and emergency-response service in an area that is susceptible to wildfire.

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

No Impact.

As discussed above in Section 4.20.1, the Project site is located near several Very High FHSZs in SRAs. Construction of the Proposed Project will not impair or conflict with an adopted emergency response plan or evacuation plan as the Project would likely improve response times and evacuation procedures, especially in Very High FHSZs. There would be no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

Less Than Significant Impact.

The Project site is generally level and would be graded prior to construction of buildings. Prevailing winds during dry periods combined with Project operations, such as refueling, welding, and flammable material use, along with installation of new infrastructure such as fuel tanks would slightly increase the chance of wildfire initiation from the Project site compared to the existing condition. However, the Project site would be staffed by firefighters trained to prevent and respond to wildfire. Impacts would be less than significant.

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?	☐	☐	☒	☐

Less Than Significant Impact.

See response to b), above. Proposed Project operations would slightly increase the chance of wildfire initiation at the Project site, but the Project as a whole would improve wildfire response in the region. Utilities have already been installed within the Stillwater Business Park and maintenance would be done in accordance with all applicable laws and regulations. Impacts would be less than significant.

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

No Impact.

See response to b), above. The Project site is generally level and not in an area prone to slope instability or flooding. There would be no impact.

4.21 Mandatory Findings of Significance

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

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Less Than Significant With Mitigation Incorporated.

As described in Section 4.4 *Biological Resources*, special-status species with potential to occur in the Project Site could be affected by the proposed Project. Mitigation Measures BIO-1 through BIO-4 would be implemented to ensure all potential impacts to special-status species and their habitats are mitigated to less than significant levels.

As described in Section 4.5 *Cultural Resources* and Section 4.18 *Tribal Cultural Resources*, the proposed Project is expected to avoid direct impacts to cultural and tribal resources. Implementation of Mitigation Measures CUL-1, CUL-2, and TCR-1 would ensure potential impacts to unknown cultural and tribal resources are reduced to less than significant levels. Should any cultural or tribal cultural resources or human remains be encountered during construction, all construction activities would be halted, and a professional archeologist consulted.

As described in Section 4.7 *Geology and Soils*, the proposed Project is unlikely to affect unknown paleontological resources. However, Mitigation Measure GEO-1 would ensure that proper procedures are followed in the event of a paleontological discovery, thereby reducing potential impacts to less than significant.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

Less Than Significant With Mitigation Incorporated.

As described above in a) and below in c), all identified potential impacts would be reduced to less than significant with implementation of listed mitigation. All other impacts were found to be less than significant and there are no past, current, or probable future projects that would have a cumulatively significant effect on the environment. Therefore, cumulative impacts would be less than significant with mitigation incorporated.

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?	☐	☐	☐	☒

No Impact.

The Proposed Project would not cause direct or indirect substantial adverse effects to human beings. There would be no impact.

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6.0 BIBLIOGRAPHY

Analytical Environmental Service. 2019. *Draft Environmental Impact Statement: Redding Rancheria Fee-To-Trust and Casino Project*, 609p.

Bureau of Land Management (BLM). 2022. General Land Office Records, Records Automation website. http://www.glorecords.blm.gov/. Accessed May 2, 2023.

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), version 2022.1.

_____. 2013. Health Effects.

California Air Resources Board (CARB). 2022a. Air Quality Data Statistics, http://www.arb.ca.gov/adam/index.html.

_____. 2022. EMFAC2021 Web Database Emissions Inventory.

_____. 2022b. State and Federal Area Designation Maps. Available online at: http://www.arb.ca.gov/desig/adm/adm.htm.

_____. 2022c. California Greenhouse Gas Emission Inventory 2022 Edition. https://ww2.arb.ca.gov/ghg-inventory-data.

California Department of Finance. 2023. *E-4 Population Estimates for Cities, Counties, and the State, 2021-2023 with 2020 Census Benchmark*. https://dof.ca.gov/Forecasting/Demographics/Estimates/e-4-population-estimates-for-cities-counties-and-the-state-2021-2023-with-2020-census-benchmark/.

California Department of Transportation (Caltrans). 2020. *Transportation and Construction Vibration Guidance Manual*.

_____. 2002. *California Airport Land Use Planning Handbook*.

California Energy Commission (CEC). 2022. California Energy Consumption Database, https://ecdms.energy.ca.gov/Default.aspx.

California Native Plant Society (CNPS), Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Available online: https://rareplants.cnps.org/. Accessed May 2023.

CGI Technical Services, Inc. 2023. *Geotechnical Report Shasta Trinity Unit Headquarters/Northern Operations*. March 29.

City of Redding. 2023a. Solid Waste Utility.

_____. 2023b. City of Redding Municipal Code.

_____. 2020. City of Redding General Plan.

_____. 2015. *Redding Municipal Airport Master Plan*. Prepared by Coffman Associates, Inc.

_____. 2005. *Stillwater Business Park Draft Environmental Impact Statement/Environmental Impact Report SCH# 2001032106*. Prepared by Diaz Associates.

Climate Registry. 2016. General Reporting Protocol for the Voluntary Reporting Program version 2.1. January 2016, The Climate Registry – Protocols.

Crockett, Alexander G. 2011. *Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World*.

ECORP Consulting, Inc. 2023a. *Air Quality and Greenhouse Gas Emissions Assessment CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation.* August.

_____. 2023b. *Biological Resources Assessment CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation*. August.

_____. 2023c. *Aquatic Resources Delineation CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation*. August.

_____. 2023d. *Archaeological Resources Inventory Report CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation*. July.

_____. 2023e. *Energy Consumption Assessment CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation*. August.

_____. 2023f. *Paleontological Assessment Memorandum for the CAL FIRE Shasta-Trinity Unity Headquarters and Northern Region Headquarters Relocation* Project, Shasta County, California. June 14.

_____. 2023g. Noise *Impact Assessment CAL FIRE Shasta-Trinity Unit Headquarters and Northern Region Headquarters Relocation*. July.

Federal Highway Administration (FHWA). 2017. Construction Noise Handbook. https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook02.cfm.

_____. 2011. Effective Noise Control During Nighttime Construction. http://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm.

_____. 2006. Roadway Construction Noise Model.

Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment*.

GEOCON Consultants, Inc. 2019. *Phase I Environmental Site Assessment Report*. June.

Harris Miller, Miller & Hanson Inc. 2006. Transit Noise and Vibration Impact Assessment, Final Report.

Intergovernmental Panel on Climate Change (IPCC). 2023. Climate Change 2023 Synthesis Report – Summary for Policymakers. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf.

Kyle, Douglas. 2002. *Historic Spots in California*. Stanford University Press. Stanford, California.

Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Electronic document, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed May 2023.

Office of Planning and Research (OPR). 2003. State of California General Plan Guidelines.

Pacific Gas and Electric (PG&E). 2023. 2022 Integrated Energy Policy Report Update.

Redding Electric Utility (REU). 2019. 2019 Integrated Resource Plan: City of Redding.

Sacramento Valley Air Quality Engineering and Enforcement Professionals. 2021. Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan. Available online at: DRAFT Northern Sacramento Valley Planning Area (bcaqmd.org).

Shasta Economic Development Corporation. 2023. https://www.shastaedc.org/location-and-infrastructure/.

Sikes, N.E. and C.J. Arrington. 2017. *Cultural and Paleontological Resources Inventory for the Placer Ranch Specific Plan Off-Site Improvements Project*, Placer County, California, 62p.

Smith, Dottie. 2009. *The Dictionary of Early Shasta County History, 2nd edition*.

South Coast Air Quality Management District (SCAQMD). *1992 Federal Attainment Plan for Carbon Monoxide*.

U.S. Environmental Protection Agency (USEPA). 2016a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide, http://www.epa.gov/climatechange/emissions/co2.html.

_____. 2016b. Methane, https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

_____. 2016c. Nitrous Oxide, https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

_____. 2002. Health Assessment Document for Diesel Engine Exhaust, https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300055PV.TXT.

Western Bat Working Group (WBWG). 2023. Western Bat Species Accounts. Available on-line at: http://wbwg.org/western-bat-species/.

Western Electro-Acoustic Laboratory, Inc. 2000. *Sound Transmission Sound Test Laboratory Report No. TL 96-186*.

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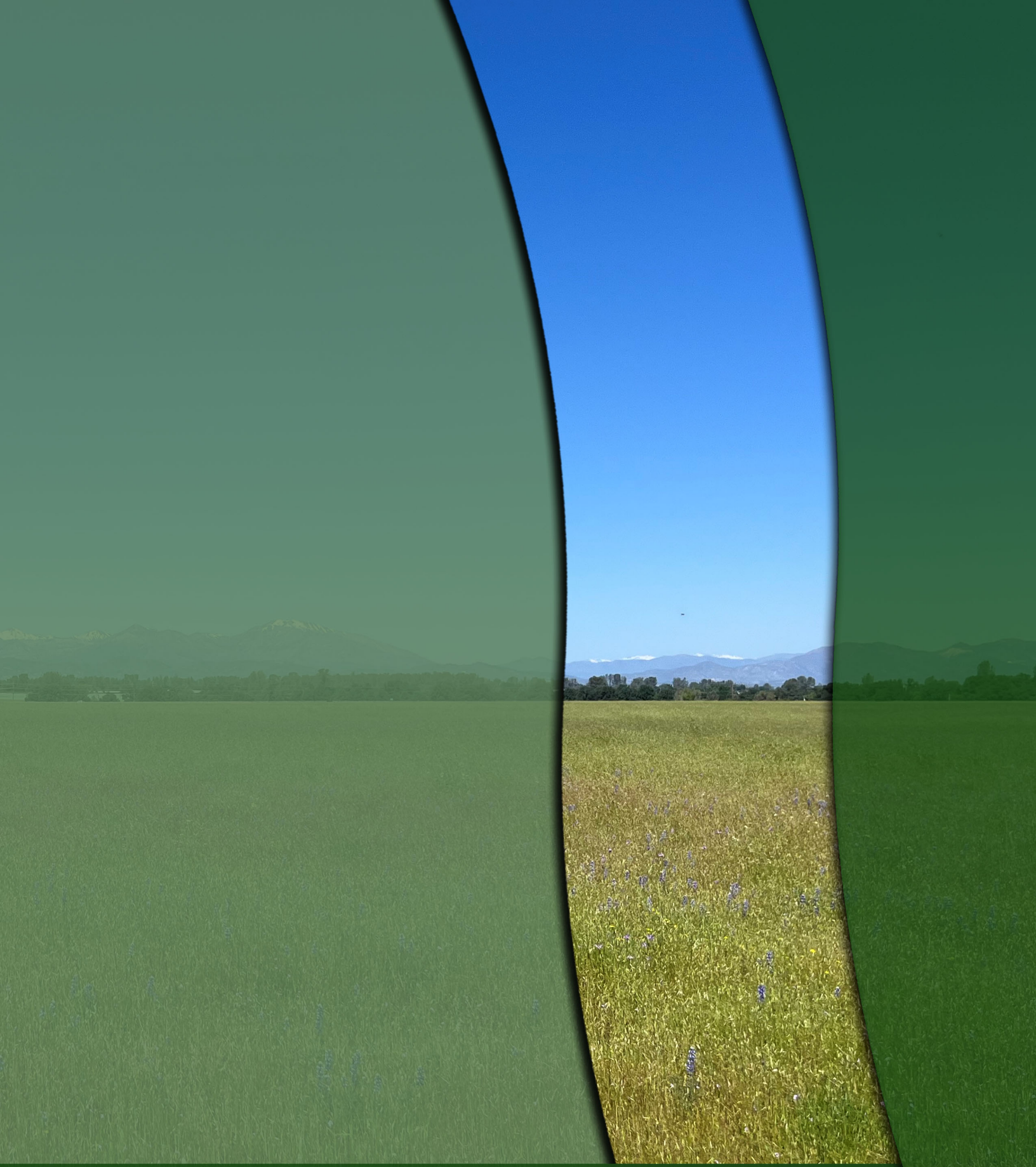
LIST OF APPENDICES



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