

DRAFT

**Initial Study and Mitigated Negative Declaration
GRIDLEY FEATHER RIVER SEWER CROSSING PROJECT**

City of Gridley, California

Prepared For:



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Gridley, California 95948



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September 2022

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DRAFT MITIGATED NEGATIVE DECLARATION

Lead Agency:	City of Gridley
Project Proponent:	City of Gridley
Project Location:	The Gridley Feather River Sewer Crossing Project is located within the Feather River, approximately 0.9 miles downstream of the East Gridley Road bridge, in Butte County, California.

Project Description:

The Proposed Project entails the replacement of the City of Gridley's (City) existing main wastewater sewer pipe, which crosses under the Feather River water channel and links the City to the City's Wastewater Treatment Plant. The Project will require three exploratory borings within the Feather River, one boring on each side of the river and microtunneling to install a new sewer pipeline.

The three exploratory borings within the Feather River will be completed with the use of a barge-supported drill rig equipped with mud rotary drilling capabilities to depths up to 70 feet (minimum elevation of -10 feet) mean sea level (MSL), depending on conditions encountered. The over-water borings will be performed at least 25 feet and no more than 50 feet from the proposed new utility alignment and maintain at least 25 feet from the existing pipeline. The drilling mud from the river borings will be retained in drums and removed from the site.

The City of Yuba City obtains its drinking water from the Feather River and a recent sanitary survey identified the pipe as a potential source of contamination. The work area is located approximately 0.87 mile downstream from the East Gridley Road bridge. Microtunneling technology will be used to install the new sewer pipe. Two shafts, one on either side of the river, will be excavated to install a minimum 48-inch-diameter casing through which the force main pipe will run. A jacking shaft will be completed on the south/west side of the levee, between the river and the levee prism. The shaft will measure approximately 18 by 35 inches and 64 feet deep. A reception shaft, located on the north/east side of the levee and south of the Wastewater Treatment Plant (WWTP), will measure approximately 18 by 18 inches and 55 feet deep.

A microtunneling machine will be installed at the bottom of the jacking shaft, which will tunnel the casing under the Feather River. The depth of the casing will be approximately 35 feet MSL to ensure approximately 17 feet between the bottom of the river and the crown of the casing. Once the casing is installed, the pipe will be pulled through the casing and tied into the sanitary sewer force main system using a vertical riser system. New piping will be installed on the north/east side of the river to connect the new pipeline to the existing system that delivers water to the WWTP. The jack and reception shaft excavations are expected to produce approximately 2,150 cubic yards (cy) of material. The material is proposed to be taken to the City's emergency overflow ponds, located on the southeastern end of the Project Area, via the levee road or Larkin Road and Richards Avenue. The levee will not be impacted by excavation for the jacking, reception shaft, or microtunneling.

Public Review Period: September 23, 2020 to October 24, 2022

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

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

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

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-2: **Plants.** If vegetation removal is proposed within suitable habitat for shield-bracted monkey flower and woolly-rose mallow, implementation of the following measure would minimize potential impacts to special-status plants:

Preconstruction floristic surveys shall be conducted for any areas of vegetation removal in the Study Area with the potential to support shield-bracted monkey flower and woolly rose mallow. The area of ground disturbance and a 25-foot buffer would be surveyed by a qualified botanist during the appropriate blooming period prior to the start of Project activity. If no special status plants are found during the preconstruction surveys, no further measures are necessary. If surveys identify any special-status plants, the Applicant shall identify them with flagging and avoid them with a 25-foot no-disturbance buffer during Project activities. If this avoidance is not feasible, the Applicant shall consult with CDFW to determine whether alternative avoidance measures that are equally protective are possible

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-3: Fish Species, Critical Habitat, and Essential Fish Habitat. To avoid and minimize potential adverse effects to listed and special status fish species, designated critical habitat, and EFH implement the following:

- Implement Project activities during a limited work window (likely June 15 through October 15) to avoid the most sensitive life stages of ESA-listed anadromous fish species.
- Deploy measures, as practicable, to reduce sediment resuspension such as a turbidity curtain, if feasible, given the flow volume and velocity in the Study Area.
- Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with NMFS on the Project effects to ESA-listed anadromous fish species, designated Critical Habitat, and EFH.
- Consult with CDFW and if necessary, secure an Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code.

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-4: Northwestern Pond Turtle. Implementation of the following measure would minimize impacts to northwestern pond turtle:

Conduct a preconstruction northwestern pond turtle survey in the construction staging and dewatering areas within 48 hours prior to construction activities. Any northwestern pond turtle individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

Timing/Implementation: Prior to construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-5: Giant Garter Snake. Conduct a pre-construction giant garter snake survey in the construction staging areas within 24 hours prior to construction activities. Any giant garter snake individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 200 feet from the Project work area where they were found.

Timing/Implementation: Prior to construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-6: Valley Elderberry Longhorn Beetle. To avoid and minimize potential adverse effects to VELB, implement the following:

- Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with USFWS, if necessary, on the project effects to ESA-listed VELB
- The area surrounding avoided elderberry shrubs shall be fenced and/or flagged as close to construction limits as possible. Recognizing that the Project may require staging/and or dewatering activities within 165 feet of some shrubs, the shrubs shall be protected during construction by establishing and maintaining a high-visibility fence as far from the drip line of each elderberry shrub as feasible.
- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub will be conducted outside of the flight season of VELB (March – July).
- Herbicides will not be used within the drip line of any elderberry shrubs. Insecticides will not be used within 100 feet of an elderberry shrub and will be applied using a backpack sprayer or similar direct application method.
- The potential effects of dust on VELB will be minimized by applying water during construction activities or by presoaking work areas that will occur within 100 feet of any potential elderberry shrub habitat.

Timing/Implementation: Prior to and during construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-7: Special-Status Birds and MBTA-Protected Birds (including nesting raptors). To protect nesting birds, no Project activity shall begin from February 1 through August 31 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds, raptors, including bald eagle, burrowing owl, and Swainson's hawk.

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

- Burrowing owl – A qualified wildlife biologist shall survey for burrowing owl within the Project work area and a 250-foot radius of the Project work area, within 14 days prior to starting Project activities. Surveys shall be conducted at appropriate times to maximize detection (dawn or dusk). Any observed active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Swainson's hawk – Within 14 days prior to construction, survey for nesting activity of birds of prey within each Project work area and a 0.25-mile radius. Any observed active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-8: **Yellow Billed Cuckoo.** To protect potentially nesting yellow-billed cuckoo, implement the following mitigation:

- To encourage western yellow-billed cuckoos to choose nesting sites away from construction activities, crews will make every effort possible to begin construction activities within 500 feet of suitable habitat before the start of the breeding season (i.e., before May 31).
- If construction activities begin after May 31 and if it is anticipated that construction-related disturbances within 500 feet of suitable habitat cannot be avoided, protocol surveys for yellow-billed cuckoo will be conducted. Surveys will follow the latest version of *A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo* (Haltermann et al. 2015).
- Biologists will coordinate with the USFWS and CDFW prior to conducting surveys. Survey methods and results will be reported to the USFWS and CDFW at the conclusion of the surveys. If cuckoos are detected during surveys, the nest or general location will be mapped by the biologists and a 500-foot buffer will be established, or other distance as approved by the USFWS and CDFW, no-disturbance buffer between construction activities and the area identified. The no-disturbance buffer will be maintained until it has been determined by a qualified biologist that young have fledged or the nest is no longer active.
- If removal of vegetation identified as suitable habitat is proposed, consultation with USFWS may be required. Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with USFWS, if necessary, on the Project effects to ESA-listed yellow-billed cuckoo.

Two special-status birds identified as potentially occurring are migrants and/or wintering species. These are sharp-shinned hawk and merlin. These species do not nest in this region or nesting habitat does not occur in the Survey Area. Therefore, no surveys for wintering and/or migrant or foraging species are recommended.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department*

BIO-9: Special-Status Bats. Within 14 days of construction, a qualified biologist will survey for all suitable roosting habitat (e.g., manufactured structures, trees) proposed for removal. If suitable roosting habitat is identified and proposed for removal, a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are found, consultation with CDFW prior to initiation of construction activities may be required. If bats are not found during the preconstruction surveys, no further measures are necessary.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-10: Riparian and Sensitive Natural Communities. A Streambed Alteration Agreement (SAA), pursuant to Section 1602 of the California Fish and Game Code, must be obtained for any activity that will impact the Feather River and riparian habitats. Minimization measures will be developed during consultation with CDFW as part of the SAA agreement process to ensure protections for affected fish and wildlife resources.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-11: Waters of the U.S./State. To avoid or minimize anticipated short-term adverse effects to Waters of the U.S. implement the following measures:

- Obtain coverage under Section 404 of the federal CWA from USACE for the exploratory borings within the Feather River. The impacts from such actions are expected to be temporary and solely associated with the dewatering activities. Therefore, no net loss of aquatic resources is likely to occur as a result of the Project and no mitigation is required.
- A Water Quality Certification or waiver pursuant to Section 401 of the CWA, as issued by RWQCB, must be obtained for Section 404 permit actions.
- A Waste Discharge Requirement for dredge and fill in Waters of the State under the Porter-Cologne Water Quality Control Act as issued by RWQCB must be obtained for impacts to Waters of the State.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

Cultural Resources

CUL-1: Cultural or Archaeological Resource Discovery. All extraction and reclamation plans shall include the following.

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic 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:
 - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
 - If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead federal agency, the lead CEQA agency, and landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
 - If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Butte County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or

the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

Geology and Soils

GEO-1: Paleontological Resources. If paleontological resources are encountered during Project activities and no paleontological monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist (as determined by the Project's qualified cultural resource professional) can be contacted to evaluate the find and make recommendations. If determined significant pursuant to CEQA and Project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan shall be implemented.

Adverse impacts to significant paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the curation of all fossil material to a paleontological repository, museum, or academic institution, as appropriate. Upon completion of Project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

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Attachment 4.4 – Biological Resources Assessment, ECORP Consulting, Inc.

Attachment 4.13 – Gridley Feather River Sewer Crossing Project – Noise Assessment Memorandum, ECORP Consulting, Inc.

ACRONYMS AND ABBREVIATIONS

Term	Description
AB	Assembly Bill
AF	Acre-feet
APE	Area of Potential Effect
BCAQMD	Butte County Air Quality Management District
BCC	Birds of Conservation Concern
BCSO	Butte County Sheriff's Office
BLM	Bureau of Land Management
BMP	Best Management Practices
BP	Before Present
BRA	Biological Resources Assessment
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CAISO	California Independent System Operator
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CGS	California Geological Survey
CH ₄	Methane
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
CLCA	California Land Conservation Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CNEL	Community Noise Equivalent Level

Term	Description
County	County of Butte
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted sound level
DMR	Division of Mine Reclamation
DOC	Department of Conservation
DOF	Department of Finance
DPM	Diesel particulate matter
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EO	Executive Order
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FR	Federal Register
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GLO	General Land Office
GUSD	Gridley Unified School District
kv	kilovolt
L _{dn}	Day-Night Average
L _{eq}	Equivalent Noise Level
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MRZ	Mineral Resource Zone
MND	Mitigated Negative Declaration
MSL	Mean Sea Level
NAHC	Native American Heritage Commission
ND	Negative Declaration
NEIC	Northeast Information Center
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
N ₂ O	Nitrous oxide
NOI	Notice of Intent
NO _x	Nitrogen oxides
NPPA	National Plant Protection Act

Term	Description
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NVAM	Noise and Vibration Assessment Memorandum
NWSRS	National Wild and Scenic Rivers System
OHP	Office of Historic Preservation
OHWM	Ordinary High-Water Mark
PG&E	Pacific Gas and Electric Company
PM _{2.5}	Particulate Matter Less than 2.5 Microns in Diameter
PM ₁₀	Particulate Matter Less than 10 Microns in Diameter
PPV	peak particle velocity
PRC	Public Resources Code
Project	Gridley Feather River Sewer Crossing Project
RCNM	Roadway Construction Noise Model
ROG	Reactive Organic Gases
RPD	Recreation and Park District
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SB	Senate Bill
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SSC	Species of Special Concern
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SVAQEEP	Sacramento Valley Air Quality Engineering and Enforcement Professionals
TAC	Toxic Air Contaminant
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley Elderberry Longhorn Beetle
VMT	Vehicle Mile Traveled
WBWG	Western Bat Working Group
WWT	Wastewater Treatment
WWTP	Wastewater Treatment Plant

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1.0 BACKGROUND

1.1 Summary

Project Title:	Gridley Feather River Sewer Crossing
Lead Agency Name and Address:	City of Gridley Public Works Department 685 Kentucky Street Gridley, California 95948
Contact Person and Phone Number:	Dave Harden, PE., (530) 846-5695
Project Location:	The Feather River Sewer Crossing is located within Feather River, approximately 2.60 miles east of Gridley and approximately 0.9 mile southeast of the East Gridley Road bridge crossing over the Feather River. The Project Site is within a portion of Section 4, Township 17 North, Range 3 East (Mount Diablo Base and Meridian) of the "Gridley, California" U.S. Geological Survey (USGS) 7.5-minute quadrangle. The approximate center of the Project Site is located at latitude 39.357166° and longitude -121.635453°
General Plan Designation:	City of Gridley - Public (PUB) for the WWTP and Agricultural (AG) for the overflow ponds. Butte County - Agriculture (AG)
Zoning:	City of Gridley - P-Q-P (Public / Quasi Public) Butte County - Agriculture - 40 (40-ac minimum).

1.2 Introduction

The City of Gridley is the lead agency for this Initial Study. The Initial Study has been prepared to identify and assess the anticipated environmental impacts of the Feather River Sewer Crossing Project (Project). This document has been prepared to satisfy the California Environmental Quality Act (CEQA; Public Resources Code [PRC], Section 21000 et seq.) and state CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a project (Negative Declaration [ND], Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]).

1.3 Lead Agency

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

1.4 Purpose and Document Organization

The purpose of this Initial Study is to evaluate the potential environmental impacts of the Proposed Project. This document is divided into the following sections:

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

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

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

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

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

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

7.0 List of Attachments – This section provides a list of document attachments.

1.5 Project Location and Surrounding Land Uses

The Project Site is located in unincorporated Butte County on and within the west and east side of Feather River, located within the Feather River, approximately 2.60 miles east of Gridley and approximately 0.9 mile southeast of the East Gridley Road bridge crossing the Feather River. See Figure 1. The Project Site is accessed by a dirt road that connects via an existing levee on the west of Feather River via East Gridley Road, as well as from the Gridley Wastewater Treatment Plant (WWTP) via East Gridley Road on the western side of the Feather River.

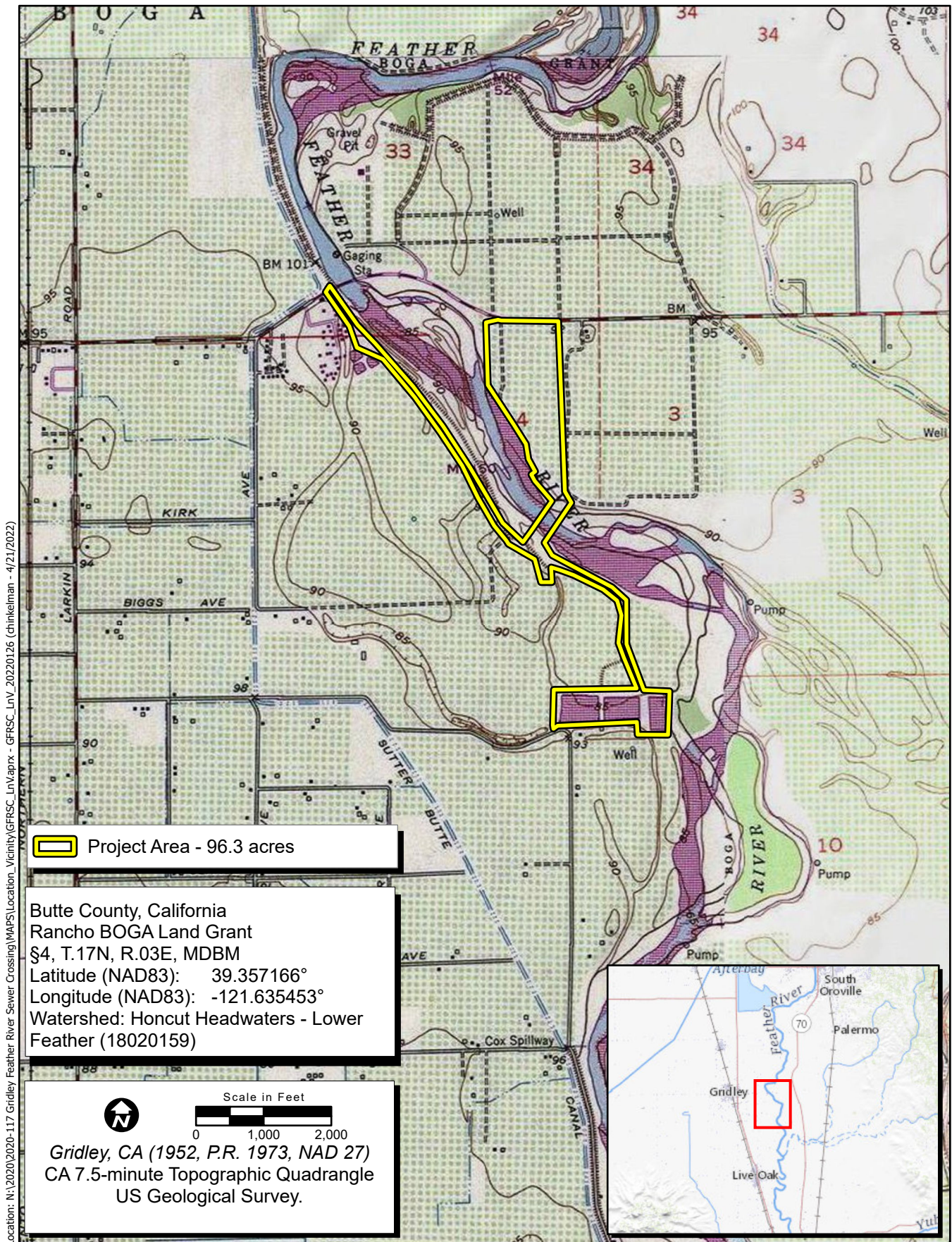


Figure 1. Project Location and Vicinity

The Project Site is comprised of the Gridley WWTP and areas east and west of the Feather River on the river-side of the levees that in total amount to approximately 96.3 acres in size as shown in Table 1-1. However, the vast majority of this area consists of existing roads, the WWTP and the WWTP overflow ponds. No construction will occur on the levee roads but are used for transporting construction equipment and vehicles and excavation material to the overflow ponds.

Table 1-1 Assessor's Parcel Numbers and Project Use				
Assessor's Parcel Number	Parcel Acreage	Project Site Approximate Acreage	Existing Use	Project Use
024-220-035	9.16	3.3	levee, levee road, riverbank	levee road used for construction vehicles and transport of excavated material
024-220-017	41.25	3.8	levee, levee road, river	levee road used for construction vehicles and transport of excavated material
024-220-033	12.58	12.6	levee road	levee road used for construction vehicles and transport of excavated material
024-130-048	14.75	14.8	WWTP overflow ponds	disposal of excavated material
024-130-049	18.34	6.9	WWTP overflow pond, riverbank	disposal of excavated material
024-220-032	60.00	2.4	levee, levee road, agriculture	staging area, construction area
024-220-999	N/A	2.6	river	microtunneling, three river borings
024-220-023	62.99	49.9	Gridley WWTP	access for construction vehicles and transport of excavated material, construction area
Total Project Site:		96.3		

Source: Butte County 2022

The Project site is located in the jurisdictions of the City of Gridley and Butte County. Those portions in the City, the WWTP and WWTP overflow ponds, are zoned Public (PUB) for the WWTP and Agricultural (AG) for the overflow ponds (City of Gridley 2010). The City's zoning map does not include these areas (City of Gridley 2020).

The Butte County 2030 General Plan designates the portions of the Project Site within the County as Agriculture (AG) (Butte County 2022). These portions are zoned AG-40 (Agriculture - 40-acre minimum) (Butte County 2022).

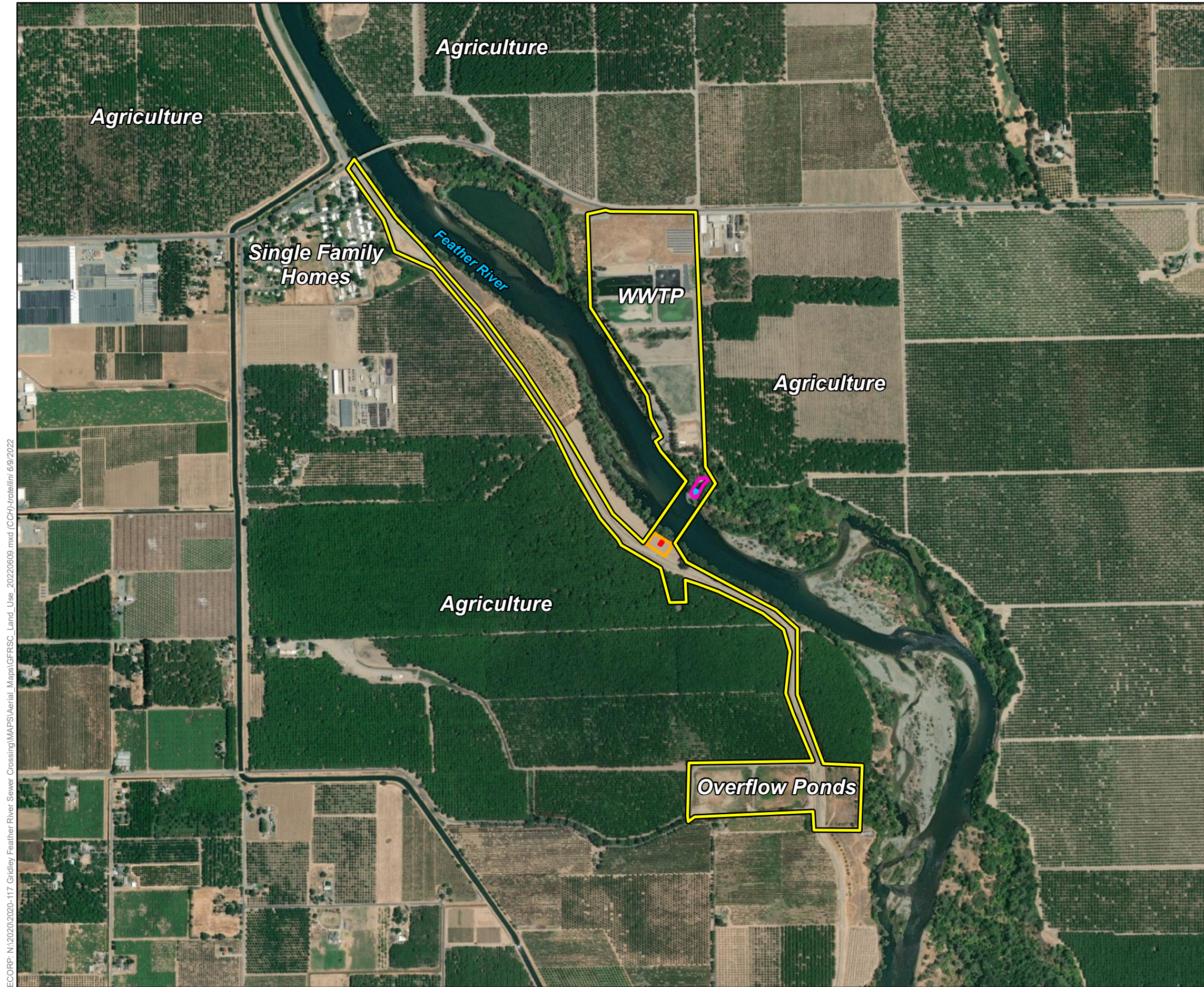
The Project Site is located within the Sacramento Valley in Northern California. Directly west and adjacent to the Project Site is a single-family residential neighborhood. Agricultural land, with a scattering of

single-family residences are south, north and west of the Project Site. The Feather is located directly south and transecting north to south of the Project Site. See Figure 2.

1.6 Environmental Setting

The Project Site is located approximately 2.60 miles east of the City of Gridley and roughly 2.10 miles southeast of the unincorporated community of Peachton. The Project Site is within a portion of Section 4, Township 17 North, Range 3 East (Mount Diablo Base and Meridian) of the "Gridley, California" USGS 7.5-minute quadrangle. The approximate center of the Project Site is located at latitude 39.357166° and longitude -121.635453°. State Route 70 at Robinson's Corner is located approximately 1.50 miles east of the Project Site. The location where microtunneling will take place is comprised of a gravel bar on the eastern embankment of the Feather River, while the western embankment is comprised of a tree-line abutting the river's edge. The shaft boring areas of the Project Site are comprised of a dense wooded area on the eastern flank of the Feather River, while the western shaft boring area is within an existing agricultural field. While the microtunneling is located within the Feather River, the river itself fluctuates in volume throughout the year and can be nearly dried up in the summer months due to a lack of rainfall. California is experiencing more frequently as the years go on and climate change continues to leave the state in dangerous drought conditions.

The topography of the Project Site ranges in elevation. The access road off East Gridley Road is at approximately 102 feet in elevation with a steep drop in elevation to river access (Feather River resides at 66 feet throughout the length of the Project Site) and approximately 74 feet at the southernmost tip of the Project Site. The areas where the shaft boring will take place is relatively flat at approximately 90 feet in elevation, dropping to a minimum of 66 feet at the river where the microtunneling will take place. The access road is surrounded by mixed riparian woodlands, interspersed with annual grassland and agricultural crops.



Map Features

Layer (Type of Boundary)

- Total Project Area
- Reception Shafts
- Jacking Shafts
- Preliminary JS Work Areas
- Preliminary RS Work Areas

Photo Source: ESRI World Imagery (6/4/2021)
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet



ECORP: N:\2020\2020-117 Gridley Feather River Sewer Crossing\MAPS\Aerial Maps\GFRSC_Land_Use_20220609.mxd (CCH)-trotellini 6/9/2022

Map Date: 6/9/2022



Figure 2. Surrounding Uses

2020-117 Gridley Feather River Sewer Crossing

2.0 PROJECT DESCRIPTION

2.1 Project Description

The Proposed Project entails the replacement of the City's existing main wastewater sewer pipe, which lies at the bottom of the Feather River water channel and links the City to the City's Wastewater Treatment Plant. The Project will require three exploratory borings within the Feather River: one boring on each side of the river and microtunneling to install a new sewer pipeline.

The Project consists of replacing an existing City wastewater sewer utility crossing of the Feather River located approximately 4,500 feet downstream from the East Gridley Road Bridge in Butte County, California. The existing utility crosses the river via an 18-inch-diameter ductile steel pipe located on the river bottom. The proposed new utility will likely be installed using micro-tunneling construction methods below the river bottom. See Figure 3 for the Project components.

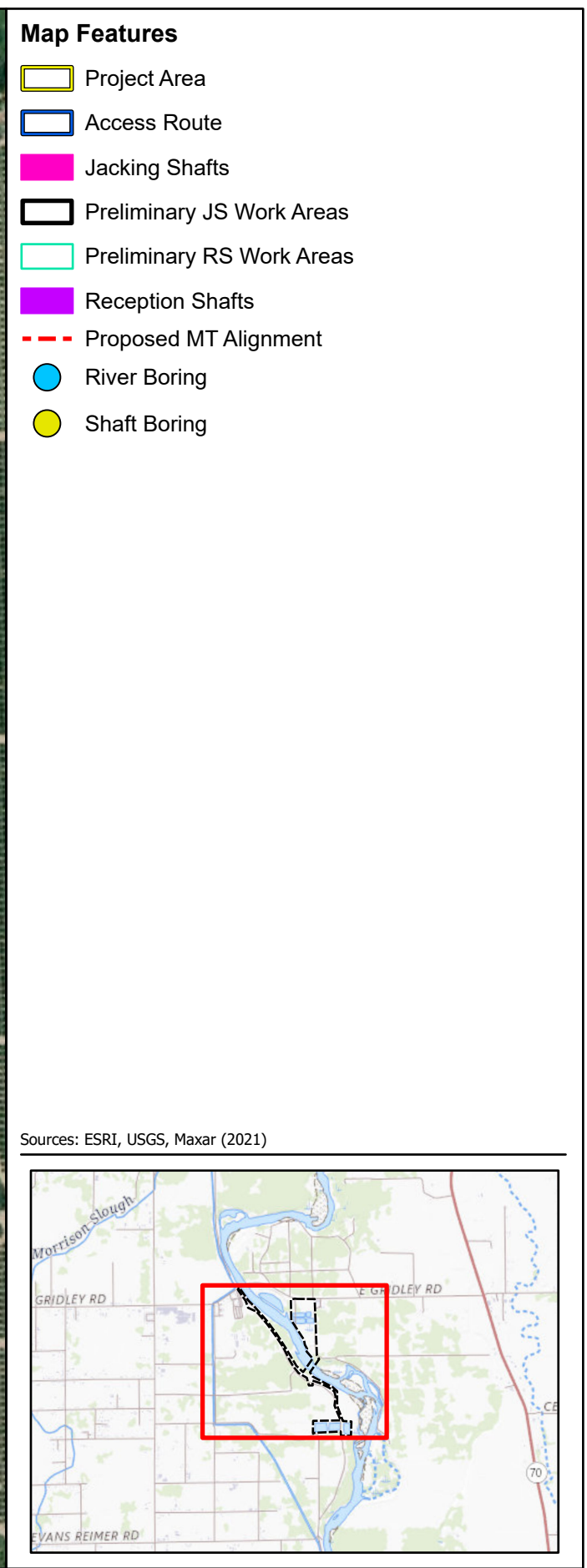
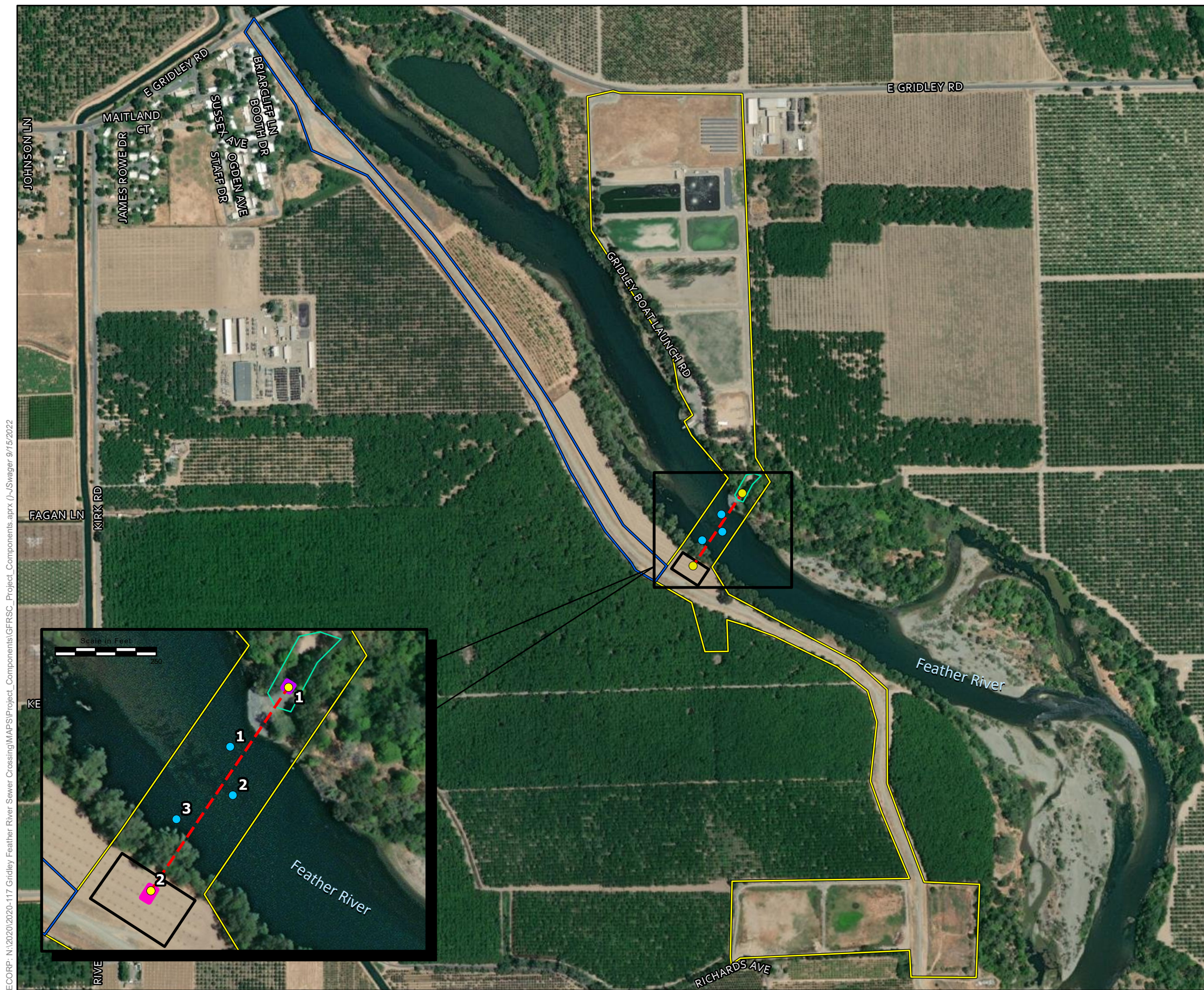
Preliminary steps include five borings to further evaluate subsurface conditions within the proposed new utility alignment within Feather River, three borings within the river and two at the proposed micro-tunneling entry and exit shaft locations on the west and east sides of the river.

The three exploratory borings within the Feather River will be completed with the use of a barge-supported drill rig equipped with mud rotary drilling capabilities to depths up to 70 feet MSL (minimum elevation of -10 feet MSL), depending on conditions encountered. The over-water borings will be performed at least 25 feet and no more than 50 feet from the proposed new utility alignment and maintain at least 25 feet from the existing pipeline. The drilling mud from the river borings will be retained in drums and removed from the site.

The two exploratory borings at the entry and exit sites will be completed with a truck-mounted drill rig equipped with mud rotary drilling capabilities to depths up to 100 feet MSL, (a minimum elevation of -10 feet MSL), depending on conditions encountered. These borings will be located adjacent to the proposed microtunneling entry and exit shafts, one each on the west side of the river (water side of the levee) and on the east side of the river near the wastewater treatment plant (as shown in Figure 3).

The Project also consists of boring a shaft under the Feather River just north of the existing pipe. The proposed method for installing the pipe under the river is utilizing microtunneling technologies. Shafts will be constructed on each side of the river to the appropriate depth and a minimum 48-inch-diameter casing will be installed. Once the casing is installed, two sanitary sewer force main pipes will be pulled through the casing and reconnected to the existing sanitary sewer force main system on both sides of the river. It is estimated that the microtunneling activities will take approximately 180 working days.

Microtunneling will require two deep watertight shafts to tunnel the casing underneath the river. The jacking shaft will be approximately 18 x 35 x 64 feet deep, located on the south/west side of the river on the waterside of the levee. The jacking shaft will be located outside the levee prism. The reception shaft will be 18 x 18 x 55 feet deep, located on the north/east side of the river in the vegetated area south of the WWTP. The work area to construct the shafts should be a minimum of 10,000 square feet (SF)



The levee road will be used for access to the jacking shaft, and an access road through the boat launch parking area will be used for access to the reception shaft. Minor improvements may be required to improve accessibility for large trucks such as widening, additional gravel and minor grading. All dimensions and depths are estimated and may be modified during design and permitting.

A microtunneling machine will be installed in the bottom of the jacking shaft and will tunnel the casing with the centerline of the tunnel at approximately 35 feet MSL. At this elevation there will be approximately 17 feet of clearance from the crown of the casing to the lowest elevation of the bottom of the river. Once the casing is installed, two sanitary sewer force mains will be pulled through the casing and capped until they can be tied into the sanitary sewer force main system.

Each end of the new force mains will tie into the existing force main system. A vertical riser system will be constructed within each shaft to meet the elevation of the existing force main system for tie-in. On the south/west side of the river, a connection to the existing sanitary sewer force main system will be made on the water side of the levee, to avoid work within the levee. On the north/east side of the river, new piping will be installed to connect the proposed force mains to the existing force main system that delivers wastewater to the treatment plant.

Upon completion of the proposed river crossing, the microtunneling shafts and existing river crossing will require decommissioning. The microtunneling shafts will be backfilled with controlled low strength material. The existing river crossing is required to be removed from the river, but until the condition of the pipe is known, the method of removal is unknown. The existing crossing may be floated out of the river and removed or dragged out of the river. Both methods will require the pipe to be flushed, capped and sealed.

Approximately 2,150 cubic yards (cy) of material will need to be off-hauled from the shaft excavation and it is proposed that the material will be taken to the City's emergency overflow ponds. It is approximately 0.75 traveled mile from the jacking shaft to the overflow ponds. It is also approximately 4.25 traveled miles from the reception shaft to the overflow ponds. It is assumed that the travel path from the jacking shaft to the overflow ponds will be via the levee road, and the path from the reception shaft to the overflow ponds will be via Larkin Road and Richards Avenue. The leftover excavated material will be used to build up the existing emergency pond berms.

The existing levee is only being used for the proposed access point to the jacking shaft. There is no proposed construction to happen on or within the levee.

2.2 Regulatory Requirements, Permits, and Approvals

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

- Butte County
- U.S. Army Corps of Engineers (USACE)
- National Marine Fisheries Service (NMFS)

- California Department of Fish & Wildlife (Region 2) (CDFW)
- California State Water Quality Control Board
- California Regional Water Quality Control Board (RWQCB) Central Valley Region (Region 5)
- California Department of Water Resources (DWR)

2.3 Consultation with California Native American Tribe(s)

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

- (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe and
- (2) the California Native American tribe responds in writing, within 30 days of receipt of the formal notification, and requests the consultation.

The City has not received any consultation requests from a Native American tribe. Further information on potential Tribal Cultural Resources (TCRs) in the Project Area is provided in Section 4.18 of this Initial Study.

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

The Project Site is located off and south of East Gridley Road just east of the City of Gridley in Butte County, California, with a portion of the Project Site within the City of Gridley limits. The Project Site is approximately 96.3 acres and consists of an access road (levee) on the western side of Feather River and an access road via the WWTP on the eastern side of Feather River. The Project Site is currently vacant, aside from activities associated with the WWTP on the northeastern portion of the Project Site. Areas of the Project are within Butte County jurisdiction and while others are in City of Gridley jurisdiction. There are no dedicated scenic vistas in the Project Site identified by the City of Gridley; however, for those areas within Butte County, the 2009 County General Plan identifies riparian woodlands along the Feather River as a Biological Resource (Butte County 2012b). The riparian areas within the Project Site and also within the Butte County jurisdiction are areas along both sides of the Feather River. However, because the Project is the placement of a pipeline under the Feather River, construction of the Project would have minimal impact with the views of riparian areas along the river especially after the Project is fully constructed. Impacts to riparian areas from a biological standpoint is further discussed in *Section 4.4 Biological Resources* of this Initial Study.

There are no existing substantial light or glare sources in the Project Site. Light and glare sources near the Project Site consist of interior and exterior lighting related to single-family residences to the west and from the WWTP on the eastern portion of the Project Site.

4.1.1.1 Regional Setting

Wild and Scenic Rivers

The National Wild and Scenic Rivers System (NWSRS) was created to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. At the Project location, the Feather River is not designated as either a federal or California Wild and Scenic River (NWSRS 2022).

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (California Department of Transportation [Caltrans] 2022). No designated State Scenic Highways exist in the vicinity of the Project.

4.1.1.2 Visual Character of the Project Site

The Project Site is comprised of a small gravel bar on the eastern side of the Feather River, an existing access road off East Gridley Road, staging areas surrounded by agricultural land, and the WWTP of the eastern portion of the Project Area. The surrounding area consists of agricultural land, a single-family residential neighborhood west of the Project Site, riparian woodlands on either side of the Feather River, and the Feather River itself. The access road is surrounded by agricultural cropland on the western side of the Feather River, along with the access point through the WWTP. The gravel bar itself is barren, surrounded by riparian woodlands, and the western side of the Feather River (shaft boring area) is covered by riparian woodlands.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. As previously described, areas of the Project is in both the City of Gridley and Butte County jurisdictions. The County of Butte is distinguished with its views of the surrounding scenic lakes, rivers and their riparian habitats, canyons, and buttes and considers these views to be significant and to be protected. The City of Gridley is located in an area of the Sacramento Valley characterized by agricultural uses, with expansive views of the nearby Sutter Buttes and Sierra Nevada foothills (City of Gridley 2010).

The following City General Plan policies are set in place to minimize impacts associated with the scenic resources in the Project Area:

CONSERVATION POLICY 9.1 The City will consider views of the Sutter Buttes in the orientation of new roadways and trails, and maintain visual connections, where feasible.

The County 2030 General Plan includes policies and actions designed to protect and enhance scenic views throughout the County. These include:

COS-P17.1 Views of Butte County's scenic resources, including water features, unique geologic features and wildlife habitat areas, shall be maintained.

COS-P17.2 Ridgeline development near scenic resources shall be limited via the adoption of specific development guidelines in order to minimize visual impacts.

The Project Site is located off East Gridley Road and will be partially visible during construction from the roadway because the shaft boring and microtunneling areas are located at a lower elevation. However, existing vegetation and residences along the roadway may provide visual screening to the construction site. One residential neighborhood exists along the levee road that will be used to access the Project Site; however, no visual changes are proposed in this area. Vegetation to the north and south of the gravel bar, and the levee to the west of the boring and microtunneling areas serve to hide activities associated with such actions from nearby properties. For those areas within riparian area, construction of the Project may require the removal of some vegetation and trees near the bank of the river. However, this removal will be minimal and would not substantially affect the scenic vista of the riverbank area. Therefore, the Project would have a **less than significant** impact on potential scenic vistas.

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

No Impact.

The Proposed Project is not located within the vicinity of an officially designated scenic highway (Caltrans 2022). No substantial damage to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway would occur. **No impact** would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

As discussed under question a) above, the Project Site is located off East Gridley Road and is not visible from the roadway. The general public does not have views of the area to be shafted or microtunnelled due to the property being located behind and below a private access road (levee) off East Gridley Road. **No impact** would occur.

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

No Impact.

No lighting is proposed as part of the Project. Project activities would not include nighttime work. Shafting and microtunneling activities would take place during daylight hours between 7:00 a.m. to 5:00 p.m., Monday through Friday. The Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. **No impact** would occur.

4.1.3 Mitigation Measures

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

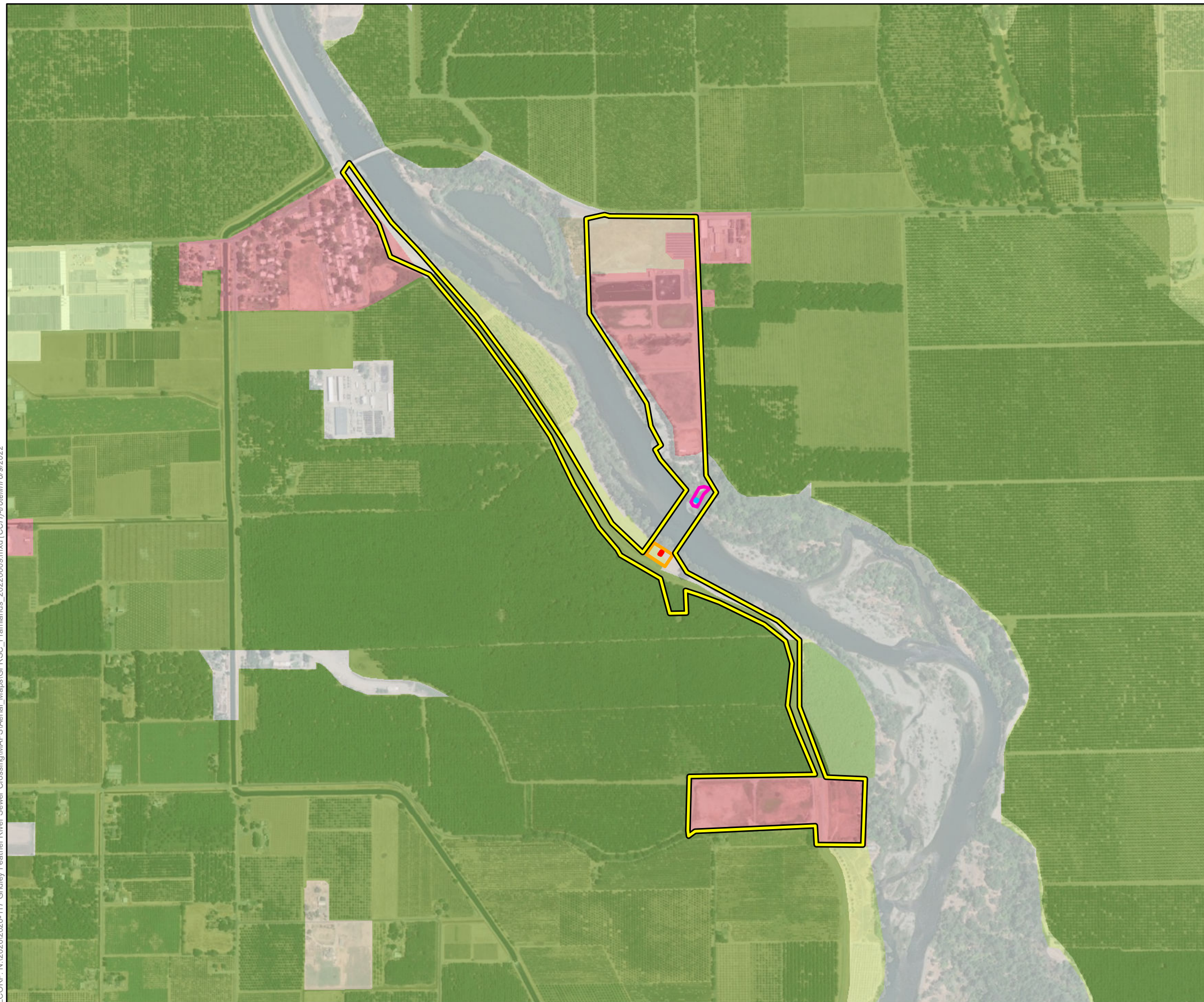
4.2 Agriculture and Forestry Resources**4.2.1 Environmental Setting**

The Project Site is undeveloped and located in rural, unincorporated Butte County; with a portion of the Project Site within the City of Gridley limits.

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories, consisting of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California DOC manages the California Important Farmland Finder, an interactive website that identifies the Project Site as being within an area of *Nonagricultural and Natural Vegetation and Rural Residential Land* (DOC 2022).

According to the DOC Farmland Map, a portion of the Project Site is located within land designated as Prime Farmland, Unique Farmland, Grazing Land, and Urban and Built-up Land. The majority of the western access road (levee) is in an area identified as Prime Farmland down to the staging area at the southernmost tip of the portion of the Project Site west of Feather River, which is designated Urban Built-up Land. Additionally, the majority of land consisting of the WWTP is considered Urban Built-up Land, aside from the portion of the property situated between the WWTP and East Gridley Road in the northwestern corner of the property, which is designated Grazing Land. The embankment on the western side of Feather River, from the river's edge to the access road (levee) is considered Unique Farmland throughout the Project vicinity. The eastern edge of the Feather River is considered Other Lands (Figure 4).

ECORP: N:\2020\2020-117 Gridley Feather River Sewer Crossing\MAPS\Aerial_Maps\GFRSC_Farmlands_20220609.mxd (CCH)-rotellini 6/9/2022



Map Features

Layer (Type of Boundary)

- Total Project Area
- Reception Shafts
- Jacking Shafts
- Preliminary JS Work Areas
- Preliminary RS Work Areas

California Dept. of Conservation - Important Farmlands

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Grazing Land
- Other Land
- Urban and Built-Up Land

Photo Source: ESRI World Imagery (6/4/2021)

Sources: California Dept. of Conservation

Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet



Map Date: 6/9/2022



Figure 4. Project Site Farmlands

2020-117 Gridley Feather River Sewer Crossing

According to Butte County California Land Conservation Act (CLCA) Williamson Act GIS layer, none of the Project Site is considered to be within lands protected by the Williamson Act (Butte County 2022). There are Williamson Act lands west and south of the City's overflow ponds, but the Project would not impact these areas.

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

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

Less Than Significant Impact.

As discussed above, the DOC identifies the Project Site as Prime Farmland, Unique Farmland, Urban Built-up Land, Grazing Land, and Other land. As shown on Figure 4, the Project only affects a small area of Prime Farmland (approximately 1.2 acres) and Unique farmland (approximately 1.3 acres). Due to the nature of the Project itself being temporary with little disruption to the surrounding environment, and that upon completion the Project the land could be used as it was previously, the Project would not result in the conversion of Prime or Unique Farmland to a non-agricultural use. As such, a **less than significant** impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

According to Butte County California Landscape Contractors Association Williamson Act GIS layer, none of the Project Site is considered to be within lands protected by the Williamson Act (Butte County 2022). There are Williamson Act lands west and south of the City's overflow ponds, but the Project would not impact these areas. Additionally, due to the temporary nature of the Project, there is **no impact** associated with the Williamson Act.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The Project Site is not located in a protected forestland or timber production area. All boring and microtunneling operations will occur between the banks of the Feather River and would not affect any timber resources. The Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

No identified forest lands exist on the Project Site or within the vicinity of the Project. All boring and microtunneling operations will occur between the banks of the Feather River and would not affect any timber resources. The Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

As previously addressed, the Project Site is located within lands designated as Prime or Unique Farmland (DOC 2022). However, due to the nature of the Project being temporary, and once completed, use of the affected farmland can be regained, there is no impact. Additionally, as previously mentioned, there is no forestland of importance in the vicinity. As such, the Proposed Project would not involve other changes in

the existing environment that would result in the conversion of farmland to a non-agricultural use or the conversion of forestland to a non-forest use. **No impact** would occur.

4.2.3 Mitigation Measures

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

4.3 Air Quality

4.3.1 Environmental Setting

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 site, pursuant to the regulatory authority of the air pollution control officer for the region, the Butte County Air Quality Management District (BCAQMD).

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. Butte County and the Project Site located within the NSVAB. The NSVAB consists 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 end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level (MSL), with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area (Sacramento Valley Air Quality Engineering and Enforcement Professionals [SVAQEEP] 2018).

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

Both the U.S. Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called *criteria* pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are O₃ (precursor

emissions include nitrogen oxide (NO_x) and reactive organic gases (ROG)), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Butte County is designated as a nonattainment area for the federal O₃ standards and is also a nonattainment area for the state standards for O₃, coarse particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) (CARB 2019).

The BCAQMD is the air pollution control agency for Butte County, including the Project Site. The agency's primary responsibility is ensuring that the federal and state ambient air quality standards are attained and maintained in the Butte County portion of the NSVAB. The BCAQMD, along with other air districts in the NSVAB, has committed to jointly prepare and implement the NSVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin. The BCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities.

In addition, there are other BCAQMD rules and regulations, not detailed here, that may apply to the Proposed Project but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

4.3.2 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

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

The 2018 Air Quality Attainment Plan constitutes the current SIP for the Butte County portion of the NSVAB and is the most recent air quality planning document covering Butte County. Air quality attainment plans are a compilation of new and previously submitted plans, programs (i.e., monitoring,

modeling, permitting), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. State law makes CARB the lead agency for all purposes related to the Air Quality Attainment Plan. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The 2018 Air Quality Attainment Plan includes forecast ROG and NO_x emissions (O₃ precursors) for the entire NSVAB through the year 2020. The plan also includes control strategies necessary to attain the California O₃ standard at the earliest practicable date, as well as developed emissions inventories and associated emissions projections for the region showing a downtrend for both ROG and NO_x.

The consistency of the Project with the 2018 Air Quality Attainment Plan is determined by Project-induced development's consistency with air pollutant emission projections in the plan. The 2018 Air Quality Attainment Plan is based on information derived from projected growth in Butte County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Butte County and the incorporated cities in the County. As such, projects that propose development consistent with the growth anticipated by the respective general plan and zoning classification of the jurisdiction in which the proposed development is located would be consistent with the 2018 Air Quality Attainment Plan. In the event that a project would propose a development that is less dense than that associated with the general plan and zoning code, the project would likewise be consistent with the Air Quality Attainment Plan. If a project, however, proposes a development that is denser than that assumed in the general plan and zoning code, the project may be in conflict with the Air Quality Attainment Plan and could therefore result in a significant impact on air quality.

The Proposed Project does not conflict with any of the land use assumptions in the City of Gridley or Butte County General Plans. Specifically, the Project does not propose to amend the General Plans, does not include development of new housing or employment centers and would not induce population or employment growth. Therefore, the Project would not affect local plans for population growth, and the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of the 2018 Air Quality Attainment Plan. Furthermore, once the Project is completed, there will be no resultant increase in automobile trips to the area because the proposed improvements would not require daily visits. Thus, it can be assumed that the Project would not conflict with the 2018 Air Quality Attainment Plan. This impact is found to be **less than significant**.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

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

The Proposed Project would result in short-term emissions from construction activities. Construction generated emissions are short term and of temporary duration, lasting only as long as construction activities occur. Construction activities such as 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 the Proposed Project were calculated using the CARB-approved California Emissions Estimator Model (CalEEMod) computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment 4.3 for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

4.3.2.1 BCAQMD Significance Threshold

The significance criteria established by the applicable air quality management or air pollution control district (BCAQMD) may be relied upon to make impact determinations. According to the BCAQMD, an air quality impact is considered significant if the proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The BCAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 4.3-1.

Table 4.3-1. Butte County Air Quality Management District Significance Thresholds			
Air Pollutant	Construction Activities		Operations Pound per Day
	Pounds per Day	Tons per Year	
Reactive Organic Gas	137 lbs	4.5 tons	25
Carbon Monoxide	-	-	-
Nitrogen Oxide	137 lbs	4.5 tons	25
Sulfur Oxide	-	-	-
Coarse Particulate Matter	80 lbs	-	80
Fine Particulate Matter	-	-	-

Source: BCAQMD 2014

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 4.3-2. 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 BCAQMD's thresholds of significance.

Table 4.3-2. Construction-Related Emissions			
Construction Year	ROG	NO_x	PM₁₀
Pounds per Day			
Construction Year One	2.04	20.29	0.97
<i>BCAQMD Daily Significance Threshold</i>	<i>137</i>	<i>137</i>	<i>82</i>
Exceed BCAQMD Daily Threshold?	No	No	No
Tons per Year			
Construction Year One	0.18	1.82	0.08
<i>BCAQMD Annual Significance Threshold</i>	<i>4.5</i>	<i>4.5</i>	<i>N/A</i>
Exceed BCAQMD Annual Threshold?	No	No	No

Source: CalEEMod version 2020.4.0. Refer to Attachment 4.3 for Model Data Outputs.

As shown in Table 4.3-2, emissions generated during Project construction would not exceed the BCAQMD's thresholds of significance.

Operational emissions impacts are long-term air emissions impacts that are associated with any changes in the permanent use of the Project Site by onsite stationary and offsite mobile sources that substantially increase emissions. The Project proposes the replacement of the existing sewage pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. The Project would not be a source of operational emissions once installation is complete. Therefore, the Proposed Project would not change the permanent use of the Project Site or contribute to on or offsite emissions.

Criteria pollutant emissions generated by the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an ambient air quality standard.

USEPA Conformity Determination Thresholds

As previously described, the Project Site is located in the Butte County portion of the NSVAB and is in nonattainment for the O₃ precursors, ROG and NO_x. Emissions generated during Project implementation would be 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 Conformity Determination thresholds.

Table 4.3-3. Implementation-Related Emissions (USEPA Conformity Determination Analysis)						
Construction Year	Pollutant (tons per year)					
	VOC (ROG)	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Construction Year One	0.18	1.82	1.92	0.00	0.08	0.07
<i>USEPA Conformity Determination Thresholds (40 Code of Federal Regulations [CFR] 93.153)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
Exceed USEPA Conformity Determination Thresholds?	No	No	No	No	No	No

Source: CalEEMod version 2020.4.0. Refer to Attachment 4.3 for Model Data Outputs.
VOC = Volatile Organic Compound

As shown in Table 4.3-3, emissions from implementation of the Proposed Project do not exceed the USEPA Conformity Determination thresholds for the region.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site are residences located on Booth Drive, approximately 3,900 feet (0.74 mile) distant.

Construction Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NO_x, 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 federal O₃ standards and is also a nonattainment area for the state standards for O₃, PM_{2.5}, and PM₁₀ standards (CARB 2019). Thus, existing O₃, PM_{2.5}, and PM₁₀ levels in the Butte County portion of the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 4.3-2 and Table 4.3-3, the Project would not exceed the BCAQMD significance thresholds for emissions or the USEPA Conformity Determination thresholds for the region.

The health effects associated with O₃ are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O₃ precursor emissions (ROG or NO_x) in excess of the BCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O₃ concentrations and the associated health impacts.

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

PM₁₀ and PM_{2.5} contain 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 Toxic Air Contaminant (TAC) of concern. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. PM₁₀ exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As shown in Tables 4.3-2 and 4.3-3, the Project would not generate emissions of PM₁₀ or PM_{2.5} that would exceed the BCAQMD's thresholds during construction. Accordingly, the Project's PM₁₀ and PM_{2.5} emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project 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.

Operational Air Contaminants

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 mobile sources that spend long periods queuing and idling at the site. Thus, by its very nature, the Project would not be a source of TAC concentrations during Proposed Project operations. For these reasons, 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 other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

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

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

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

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

CARB's *Air Quality and Land Use Handbook* (2005) identifies the sources of the most common operational odor complaints received by local air districts. Typical sources include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The Project does not contain any of the land uses identified as typically associated with emissions of objectionable odors.

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

4.3.3 Mitigation Measures

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

4.4 Biological Resources

On behalf of Bennett Engineering, ECORP conducted a biological resources assessment (BRA, 2022a) for the Project. The purpose of the assessment was to collect information on the biological resources present or with the potential to occur in the Project Study Area¹, assess potential biological impacts related to Project activities, and identify potential mitigation measures to inform and support the Project's California Environmental Quality Act (CEQA) documentation for biological resources. The BRA is included as Attachment 4.4 of this Initial Study and provides the information for the following sections.

4.4.1 Methods

4.4.1.1 Reconnaissance Site Survey

ECORP Biologists Emily Mecke and Rachel Bennett conducted the site reconnaissance visit February 16, 2022. The Study Area was systematically surveyed on foot using an EOS Arrow Global Positioning System unit with sub-meter accuracy, topographic maps, and aerial imagery to ensure total site coverage. Special

¹ The BRA uses "Study Area" to represent the Project Site. Study Area and Project Site are interchangeable.

attention was given to identifying those portions of the Study Area with the potential to support special-status species and sensitive habitats. During the field survey, biological communities occurring onsite were characterized and the following biological resource information was collected:

- Potential aquatic resources
- Vegetation communities
- Plant and animal species directly observed
- Burrows and any other special habitat features
- Representative Study Area photographs

4.4.1.2 Aquatic Resources Delineation Site Survey

An aquatic resources delineation of the Study Area was conducted concurrently during the February 16, 2022 Site visit. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement; USACE 2008).

4.4.2 Environmental Setting

The approximately 96.3-acre Gridley Feather River Sewer Crossing Project (Study Area) is located in Butte County, California; with a portion of the Project Site located within the limits of the City of Gridley (Wastewater Treatment Plant (WWTP) and staging area at the southwestern corner of the Proposed Project Site. The Study Area is located south of East Gridley Road along the Feather River and includes the existing City of Gridley WWTP, the WWTP overflow ponds, and a portion of the Feather River West Levee.

4.4.2.1 Topography and Soils

Land Cover Types and Vegetation Communities

Land cover types or vegetation communities found within the Study Area included river, riparian woodland, ruderal, paved/developed, orchard, and constructed wastewater ponds. Descriptions of the land cover types, and vegetation communities present within the Study Area are provided below.

River

The Study Area includes the Feather River. The Feather River is a principal tributary of the Sacramento River, in the Sacramento Valley of northern California. The main stem of the Feather River begins in Lake Oroville and is joined by four tributary forks.

Riparian Woodland

The riparian woodland community is found along the riverbanks. The riparian woodland vegetation is a relatively narrow corridor of mature trees with varying densities of understory cover, depending on levels

of human use. Dominant trees include Fremont cottonwood (*Populus fremontii*), willows (*Salix* sp.), valley oak (*Quercus lobata*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and box elder (*Acer negundo*).

Ruderal

The ruderal community was found along roadsides and levees. These areas are characterized by the presence of nonnative weedy plants such as foxtail barley (*Hordeum murinum*), milk thistle (*Silybum marianum*), Spanish clover (*Acmispon americanus*), soft brome (*Bromus hordeaceus*), wild radish (*Raphanus sativus*), ripgut brome (*Bromus diandrus*). There is ruderal grassland on the north side of the wastewater treatment facility. This area was dominated by miner's lettuce (*claytonia perfoliata* ssp. *perfoliata*), shepherd's purse (*Capsella bursa-pastoris*), black mustard (*Brassica nigra*), Menzies' fiddleneck (*Amsinckia menziesii*), broadleaf filaree (*Erodium botrys*), *Vicia* sp., and henbit (*Lamium amplexicaule*).

Paved/Developed

Paved, developed portions of the Study Area are characterized by existing paved roads and parking areas, compacted dirt/gravel parking areas, the gravel levee crown road, and pedestrian paths to the Feather River. The majority of the dirt/gravel roads and paths are unvegetated.

Orchard

There is an orchard located in the southwest portion of the Study Area

Wastewater Treatment Overflow Ponds

The overflow ponds are semi-constructed wetland-like features used for wastewater treatment overflow. The hydrology is limited to only overflow occasions, and seasonal rainfall. The ponds are surrounded by grassy vegetation, and *Typha* sp. Several trees were observed along the south side of the ponds, and orchard to the north.

Wastewater Treatment Ponds

The wastewater ponds are manufactured ponds surrounded by gravel- and dirt-surfaced access roads. Eucalyptus trees were found along the fence line.

4.4.2.2 Aquatic Resources

A total of 32.266 acres of aquatic resources consisting of 2.636 acres of Feather River, 16.869 acres of Active WWT Pond, and 12.761 acres of Overflow WWT Pond have been mapped within the Study Area (Table 4.4-1). A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented on Figures 4a and 4b of the BRA. and Figure 4b of the BRA.

Table 4.4-1. Aquatic Resources	
Type	Acreage¹
Wetlands	
None	0.000
Other Waters	
Feather River	2.636
Active WWT Pond	16.869
Overflow WWT Pond	12.761
Total	32.256

¹Acreages represent a calculated estimation and are subject to modification following the USACE verification process.

Wetlands

There are no wetlands within the Study Area.

Other Waters/Non-Wetland Waters

Feather River

The Feather River is perennial and exhibits bed and bank. Flows and water levels are regulated at dams upstream. The Feather River is a navigable water as defined under the Clean Water Act (CWA).

Active WWT Ponds and Overflow WWT Ponds

The Active WWT Ponds within the Study Area are part of the Gridley WWTP located on the east side of the Feather River. These ponds were constructed with access roads and levees and are mostly unvegetated. The ponds appear to be in active use for daily operations of the WWTP. The Overflow WWT Ponds are located south of the WWTP on the west side of the Feather River. These ponds were constructed with access roads. Portions of these ponds have emergent vegetation such as *Typha* sp. These ponds are used as overflow ponds in periods of high volume and also receive seasonal rainfall.

According to 40 CFR 230.3(s), waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m), which also meet the criteria of this definition) are not Waters of the U.S. As such, the Active WWT Ponds and Overflow WWT Ponds are likely not Waters of the U.S.

4.4.2.3 *Wildlife Observations*

The Study Area supports a variety of common wildlife species. A detailed list of wildlife species observed in the vicinity of the Study Area during the Project Site visit is included in the BRA.

4.4.2.4 Evaluation of Species Identified in the Literature Search

A list of all of the special-status plant and wildlife species identified in the literature search as potentially occurring within the Study Areas is provided in Table 4.4-2. This table includes the listing status for each species, a brief habitat description, and a determination on the potential to occur in or near the Study Area.

Several species and sensitive habitat types that came up in the database and literature searches have been formally delisted, are tracked by the California Natural Diversity Data Base (CNDDB), but possess no special status or are identified as sensitive habitats but not located within the Study Area. These species and habitat types were not included in Table 4.4-2 and are not discussed further in this report.

Table 4.4-2. Special-Status Species Evaluated for the Study Area						
Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Plants						
Mexican mosquito fern <i>Azolla microphylla</i>			CRPR 4.2	Annual/perennial herb found in Marshes and swamps, ponds or slow-moving bodies of water at 98'–328'.	August.	Potential to Occur. There is suitable habitat within the Study Area.
Shield-bracted monkeyflower <i>Erythranthe glaucescens</i>			CRPR 4.3	Annual herb found in Serpentine seeps and sometimes streambanks of chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at 196'–4,069'.	Feb-Aug	Low Potential to Occur. Marginally suitable habitat within Study Area.
Wooly rose-mallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>			CRPR 1B.2	Perennial rhizomatous herb (emergent) found in marshes and freshwater swamps. Often in riprap on sides of levees at 0'–394'	June – Sept	Low Potential to Occur. There is marginally suitable habitat within Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area						
Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Invertebrates						
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT			Elderberry shrubs (host plant for this species).	Any season	Potential to Occur. – Several elderberry shrubs are present in the Study Area.
Fish						
Chinook salmon – Central Valley Spring Run (<i>Oncorhynchus tshawytscha</i>)	FT	CT		Anadromous; undammed cold-water rivers and streams having riffles with large gravel substrates and relatively deep pools.	N/A	Present ²
Steelhead (Central Valley Distinct Population Segment [DPS]) (<i>Oncorhynchus mykiss irideus</i>)	FT			Anadromous; undammed cold-water rivers and streams having riffles with gravel substrates and relatively deep pools.	N/A	Present ²
Green sturgeon (Southern DPS) (<i>Acipenser medirostris</i>)	FT			Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Low Potential to Occur. There is little past or current evidence of occurrence or spawning in the Feather
Reptiles						
Northwestern pond turtle (<i>Actinemys marmorata</i>)			SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Potential to Occur. Suitable habitat within the Study Area.
Giant garter snake (<i>Thamnophis gigas</i>)	FT	CT		Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April – October	Low Potential to Occur. Marginal habitat adjacent to the Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Birds						
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	FT	CE	BCC	Breeds in California, Arizona, Utah, Colorado, and Wyoming. In California, they nest along the upper Sacramento River and the South Fork Kern River from Isabella Reservoir to Canebrake Ecological Reserve. Other known nesting locations include Feather River (Butte, Yuba, Sutter counties), Prado Flood Control Basin (San Bernardino and Riverside County), Amargosa River and Owens Valley (Inyo County), Santa Clara River (Los Angeles County), Mojave River and Colorado River (San Bernardino County). Nests in riparian woodland. Winters in South America.	June 15- August 15	Potential to Occur. Suitable nesting habitat is present within the Study Area and within 500-feet of the Study Area.
Double-crested cormorant (<i>Nannopterum auritum</i>)	-	-	CDFW WL	Nests near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines and typically forages in shallow water. Non-nesters are found in many coastal and inland waters.	April-August	Low Potential to Occur. There is marginal nesting habitat present within the Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Osprey (<i>Pandion haliaetus</i>)	-	-	CDFW WL	Nesting habitat requires close proximity to accessible fish, open nest site free of mammalian predators, and extended ice-free season. The nest in large trees, snags, cliffs, transmission/communication towers, artificial nest platforms, channel markers/buoys.	April-September	Potential to Occur. Suitable nesting habitat within Study Area.
White-tailed kite (<i>Elanus leucurus</i>)	-	-	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.	March-August	Potential to Occur. Suitable nesting habitat within Study Area.
Sharp-shinned hawk (<i>Accipiter striatus</i>)	-	-	CDFW WL	Nests in trees in most forest types with at least some conifers. In California, nesting occurs in Sierra Nevada and Cascade Ranges (foothills to tree line) and northwestern coastal range.	Nest (April-August); Winter CV (September-April)	Potential to Occur. Suitable wintering habitat within Study Area.
Cooper's hawk (<i>Accipiter cooperii</i>)	-	-	CDFW WL	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	March-July	Potential to Occur. Suitable nesting habitat within Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

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

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Merlin (<i>Falco columbarius</i>)	-	-	CDFW WL	Breeds in Oregon, Washington north into Canada. Winters in southern Canada to South America, including California. Breeds near forest openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings.	September-April (wintering in the Central Valley); does not breed in California	Potential to Occur. Suitable wintering habitat within Study Area.
Yellow-billed magpie (<i>Pica nuttalli</i>)	-	-	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.	April-June	Potential to Occur. Suitable nesting habitat within Study Area.
Oak titmouse (<i>Baeolophus inornatus</i>)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (e.g., gray, Jeffrey, Coulter, pinyon pines and Joshua tree).	March-July	Potential to Occur. Suitable nesting habitat within Study Area
Wrentit (<i>Chamaea fasciata</i>)	-	-	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.	March-August	Potential to Occur. Suitable nesting habitat adjacent to Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Lawrence's goldfinch (<i>Spinus lawrencei</i>)	-	-	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g., small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water.	March-September	Low Potential to Occur. Marginal nesting habitat within Study Area.
Song sparrow "Modesto" (<i>Melospiza melodia heermanni</i>)	-	-	SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat.	April-June	Potential to Occur. Suitable nesting habitat adjacent to Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Yellow-breasted chat (<i>Icteria virens</i>)	-	-	SSC	In California, breeds in Klamath Mountains, inner Northern Coast Range south to San Francisco Bay, locally distributed from Santa Clara County south to San Diego County Sacramento and San Joaquin valleys, along west slope of Sierra Nevada from the Feather River to Kern River, Mono and Inyo counties. In the west, nesting habitat includes dense riparian and shrubby woodland.	May-August	Potential to Occur. Suitable nesting habitat adjacent to Study Area.
Bullock's oriole (<i>Icterus bullockii</i>)			BCC	Breeding habitat includes riparian and oak woodlands.	March-July	Potential to Occur. Suitable nesting habitat within Study Area
Mammals						
Pallid bat (<i>Antrozous pallidus</i>)			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 vacant buildings (Western Bat Working Group [WBWG] 2017).	April-September	Potential to Occur. Suitable roosting habitat within Study Area.

Table 4.4-2. Special-Status Species Evaluated for the Study Area

Common Name (<i>Scientific Name</i>)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)			SSC	Caves, mines, buildings, rock crevices, trees.	April-September	Low Potential to Occur. Marginal roosting habitat within Study Area.

Status Codes

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
BCC	USFWS Bird of Conservation Concern).
CT	CESA- or National Plant Protection Act- (NPPA)-listed, Threatened.
CE	CESA or NPPA listed, Endangered.
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, § 5050-reptiles/amphibians).
SSC	CDFW Species of Special Concern (CDFW, updated July 2017).
1B	CRPR/Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
4	CRPR/Plants of Limited Distribution – A Watch List.
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 (delisted species are monitored for 5 years).

Plants

A total of 32 special-status plant species were identified as having the potential to occur within Study Areas based on the literature review (Table 2 of the BRA). Upon further analysis and after the reconnaissance site visit, 29 species were determined to not have potential to occur within the Study Area due to the absence of suitable habitat or the Study Area was outside the elevational range for the species. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining three species that have the potential to occur within the Study Area are presented below.

Mexican Mosquito Fern

Mexican mosquito fern (*Azolla microphylla*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.2 species. This species is an herbaceous annual/perennial that occurs in marshes and swamps (e.g., ponds and slow-moving water) (California Native Plant Society [CNPS] 2020). Mexican mosquito fern blooms in August and is known to occur at elevations ranging from 98 to 328 feet above MSL (CNPS 2020). The current range for Mexican mosquito fern in California includes Butte, Colusa, Glenn, Inyo, Kern, Lake, Modoc, Nevada, Plumas, San Bernardino, Santa Clara, San Diego, and Tulare counties (CNPS 2020).

While there are no CNDDDB documented occurrences of Mexican mosquito fern within 5 miles of the Study Area (CDFW 2022), the wastewater overflow ponds, and portions of the Feather River within the Study Area may provide suitable habitat for this species. Mexican mosquito fern has potential to occur onsite.

Shield-Bracted Monkeyflower

Shield-bracted monkeyflower (*Erythranthe glaucescens*) is not listed as pursuant to either the federal or California ESAs but is designated as a California Rare Plant Rank (CRPR) 4.3 species. This species is an herbaceous annual that occurs in serpentine seeps and sometimes streambanks of chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland (CNPS 2020). Shield-bracted monkeyflower blooms from February through August and is known to occur at elevations ranging from 196 to 4,069 feet above MSL (CNPS 2020). The current range of this species includes Butte, Colusa, Lake, Nevada, Shasta, and Tehama counties (CNPS 2020).

While there are no CNDDDB documented occurrences of shield-bracted monkeyflower within 5 miles of the Study Area (CDFW 2020), the banks of the Feather River within the Study Area may provide marginally suitable habitat for this species. Shield-bracted monkeyflower has low potential to occur onsite.

Woolly Rose-Mallow

Woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is a rhizomatous, herbaceous perennial that occurs in marshes and freshwater swamps, and often in riprap on sides of levees (CNPS 2020). Rose-mallow blooms from June through September and is known to occur at elevations ranging from sea level to 394 feet above MSL (CNPS 2020). Rose-mallow is endemic to California; the current range of this species in California includes Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CNPS 2020).

While there are no CNDDDB documented occurrences of woolly rose-mallow within 5 miles of the Study Area (CDFW 2020), the banks of the Feather River, including the riprap on the east bank within the Study Area may provide marginal habitat for this species. Woolly rose-mallow has low potential to occur onsite.

Fish

The lower Feather River in the Study Area provides migration, spawning, and rearing habitat for a diverse assemblage of native and nonnative fish species, including both resident and anadromous (i.e., ocean migrating) species. At least 31 fish species, including 13 native and 18 nonnative species, have been documented in the lower Feather River in the Study Area (Seesholtz et al. 2015). A total of four special-status fish species were identified as having the potential to occur within Study Areas based on the literature review (Table 2 of the BRA). Three of these species were determined to have some potential to occur in the Study Area. These species are described below.

Chinook Salmon

The Central Valley spring-run Evolutionary Significant Unit (ESU) Chinook salmon (spring-run ESU) was listed as a threatened species under the ESA on September 16, 1999 (50 CFR 50394) and under the California ESA in February 1999. The spring-run ESU includes all spawning populations in the Sacramento

River and its tributaries, including the Feather River, and one artificial propagation program, the Feather River Hatchery spring-run Chinook program. Annual estimates of spring-run ESU escapement for the Feather River basin ranged from approximately 146 (1967) to 8,662 (2003) and was last estimated to be 2,110 in 2018 (GrandTab 2019).

The majority of spring-run Chinook salmon enters freshwater to spawn as three-year-old fish (Fisher 1994). Upstream migrations of adult spring-run Chinook salmon begin in late January and continue through September (California Department of Fish and Game [CDFG] 1998; National Marine Fisheries Service [NMFS] 2014). These sexually immature fish hold in deep, cold freshwater pools of rivers to mature for several months prior to spawning (Moyle 2002) and generally enter their natal streams from mid-February through July (CDFG 1998). Spawning typically occurs from mid-August to early October, with peak spawning occurring in September (Moyle 2002). Embryo survival is dependent upon water temperatures between 5 to 13 degrees Celsius (°C) and high dissolved-oxygen saturation (Moyle 2002). Embryos hatch in approximately 40-60 days, depending on water temperature, and remain in gravel as alevins for four to six weeks before emerging as fry from November through March (Moyle 2002). Juveniles typically reside in freshwater for 12-16 months and emigrate as yearlings from October through March, with peak emigration occurring from November to December (NMFS 2014).

The lower Feather River supports populations of Central Valley spring-run ESU Chinook salmon. Therefore, this ESU has potential to occur in the Study Area during the adult immigration and juvenile emigration periods.

California Central Valley DPS Steelhead

California Central Valley DPS steelhead, the anadromous form of rainbow trout, were listed as threatened under the ESA on March 19, 1998 (63 Federal Register [FR] 13347). This DPS includes steelhead populations in the Sacramento and San Joaquin rivers, inclusive and downstream of the Merced River. The listing was updated to include Coleman National Fish Hatchery and Feather River Hatchery steelhead populations on January 5, 2006 (71 FR 834).

Adult steelhead, typically averaging 600 to 800 mm in length (Moyle et al. 1989), generally leave the ocean and begin upstream migration through the Delta to spawning reaches in the upper Sacramento and San Joaquin rivers and tributaries from August through March (McEwan 2001), with peak immigration occurring in January and February (Moyle 2002). Spawning generally occurs from January through April (McEwan and Jackson 1996). Redds are typically dug by female fish in water depths of 10 to 150 cm and where water velocities over redds range from 20 to 155 cm/sec (Moyle 2002). Juvenile steelhead rear in their natal streams for one to three years prior to emigrating from the river. Emigration of one- to three-year old, sub-adults primarily occurs from January through June (Snider and Titus 1996). Unlike Chinook salmon, steelhead are iteroparous (i.e., able to spawn repeatedly) and may spawn for up to four consecutive years before dying; however, it is rare for steelhead to spawn more than twice and the majority of repeat spawners are females (Busby et al. 1996). Although one-time spawners comprise the majority, Shapovalov and Taft (1954) report that repeat spawners are relatively numerous (i.e., 17.2 percent) in California streams. Thus, kelts (post-spawning adults) may be present in the in the Study Area shortly after spawning (i.e., January through mid-April).

The lower Feather River supports populations of California Central Valley DPS steelhead. Therefore, the DPS has the potential to occur in the Study Area during the adult and juvenile migration periods.

Green Sturgeon

On April 7, 2006, NMFS proposed the Southern DPS of green sturgeon, which includes all fish populations south of the Eel River in California, as threatened under the ESA (71 FR 17757). The agency determined that the Northern DPS, which includes all populations north of the Eel River (inclusive), do not warrant listing. The designation of the Southern DPS was based on information demonstrating: (1) the majority of spawning adults are concentrated into one spawning river (i.e., the Sacramento River), (2) existence of continued threats that had not been adequately addressed since the previous green sturgeon status review, (3) downward trends in juvenile abundance, and (4) habitat loss in the upper Sacramento and Feather rivers. The Final Rule establishing take prohibitions for the Southern DPS was promulgated on June 2, 2010 (75 FR 30714).

Although little is known about the spawning habits of green sturgeon in the Sacramento-San Joaquin system, spawning times are thought to be similar to those documented for the Klamath River (Emmett et al. 1991). There are three general phases in green sturgeon life history: 1) freshwater stage (<three years old), 2) coastal migrants (three to 13 years old for females; three to nine years old for males); and 3) adults (>13 years old for females, >nine years old for males) (Environmental Protection Information Center [EPIC] et al. 2001). Adults typically migrate into fresh water beginning in late February; spawning occurs from March to July, with peak activity from April to June (Moyle et al. 2015). Emigration typically occurs after a period of over-summering followed by out-migration in the fall/winter period coinciding with increases in flow.

Based on information from catches of green sturgeon eggs, larvae, and juveniles, and additional data derived from monitoring studies of white sturgeon, it appears that green sturgeon in the Sacramento River spawn from above Hamilton City to above Red Bluff Diversion Dam, maybe as far upstream as Keswick Dam (CDFG 2002). Juvenile green sturgeon are believed to reside in freshwater habitats from one to three years, before emigrating to the Delta under winter high-flow events. However, the timing of emigration is unknown (EPIC et al. 2001). Following emigration from the upper Sacramento River, juvenile green sturgeon are widely distributed throughout the Delta (Radtke 1966).

Although adult green sturgeon have been documented occasionally in the Feather River, the numbers are low, sporadic, and there is limited evidence of historic or current spawning (Moser et al. 2016). However, green sturgeon eggs were collected in the Feather River in June 2011 (Seesholtz et al. 2015), indicating potentially successful spawning in this system. Based on this information, there is a low potential for green sturgeon to occur in the Study Area.

Invertebrates

A total of four special-status invertebrate species were identified as having the potential to occur within the Study Area based on the literature review (Table 2 of the BRA). Upon further analysis and after the reconnaissance site visit, all but one was determined to be absent due to lack of suitable habitat. No

further discussion of these species is provided in this analysis. A brief description of the remaining species is presented below.

Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*, VELB) is listed as threatened pursuant to the Federal ESA (U.S. Fish and Wildlife Service [USFWS] 1980). The VELB is completely dependent on its larval host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland and scrub communities (USFWS 1999, 2017). Elderberry plants located within the range of the beetle, with one or more stems measuring 1.0 inch or greater in diameter at ground level are considered to be habitat for the species (USFWS 1999). The adult flight season extends from late March through July (USFWS 2017). During that time the adults feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants (Barr 1991). The first instar larvae bore into live elderberry stems, where they develop for one to two years feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007). The VELB occurs in metapopulations throughout the Central Valley (Collinge et al. 2001 as cited in USFWS 2017). These metapopulations (subpopulations) occur throughout contiguous riparian habitat, which shift temporarily and spatially based on changing environmental conditions. This temporal and spatial shifting of the metapopulations results in a patchy and ever-changing distribution of the species. Research indicates that dense elderberry shrub clumps in healthy riparian habitat is the primary habitat for the VELB (USFWS 2017). The beetle's current distribution extends from Shasta County in the north to Fresno County in the south and includes everything from the valley floor up into the lower foothills (USFWS 2017). The vast majority of VELB occurrences have been recorded below 500 feet (152 meters), however, rare occurrences have been recorded up to approximately 3,000 feet (USFWS 1999; 2017).

There are four documented CNDDB occurrences of this species located within 5 miles of the Study Area (CDFW 2022). Numerous elderberry shrubs were mapped in the Study Area (Figure 5 of the BRA). VELB has potential to occur within the Study Area.

Reptiles

A total of two special-status reptile species were identified as having the potential to occur within the Study Area based on the literature review (Table 2 of the BRA). Upon further analysis and after the reconnaissance site visit, both reptiles were identified to have potential to occur in the Study Area as described below.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a CDFW Species of Special Concern (SSC). Northwestern pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow-moving streams (Jennings and Hayes 1994). This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter (Jennings and Hayes 1994). Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings and juveniles and hatchlings

require shallow edgewater with relatively dense submergent or short emergent vegetation in which to forage. Northwestern pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August (Jennings and Hayes 1994). Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions (Jennings and Hayes 1994). The majority of nesting sites are located within 650 feet (200 meters) of aquatic sites; however, nests have been documented as far as 1,310 feet (400 meters) from aquatic habitat.

There are two CNDDDB occurrences of this species located within 5 miles of the Study Area (CDFW 2022). There is suitable aquatic habitat within the Feather River and adjacent ponds along with suitable upland habitat in the riparian areas within the Study Area. Northwestern pond turtle has potential to occur within the Study Area.

Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) is listed as a threatened species pursuant to both the California and federal ESAs. Giant garter snakes typically inhabit perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water during the spring and summer months. Giant garter snakes are most active from early spring through mid-fall (USFWS 1999). The giant garter snake is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lake in Kern County (USFWS 1999). Seasonally, the giant garter snake becomes active in early spring, emerging from overwintering sites to bask on emergent willows, tules, saltbush, and riprap (Hansen and Tremper in Rossman et al. 1996). Generally, by May, all giant garter snakes have emerged from hibernacula and are actively foraging for food. Males immediately start searching for mates (USFWS 1999). Live young are born in late July through early September (Hansen and Hansen 1990) and by October, most snakes begin searching for overwintering sites. Most are in hibernacula by November (Hansen and Hansen 1990). As with most ectothermic vertebrates, the exact timing of activities is dependent on current climatic conditions. Males are sexually mature in approximately three years. Females, which achieve sexual maturity at larger size, mature in five years (G. Hansen pers. Comm. In USFWS 1999). The giant garter snake is one of the most aquatic garter snakes (USFWS 1999). It is rarely found far from water and occupies habitats such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams (USFWS 1999). Waters inhabited by this species typically feature substrates of soil, mud, or other fines. Giant garter snakes tend to be absent from larger rivers and wetlands with sand, gravel, cobble, or rock substrates, as well as from areas with extensive shading.

There are two giant garter snake occurrences within 5 miles of the Study Area. The wastewater treatment overflow ponds within the southern portion of the Study Area are not regularly inundated and, along with the Feather River, do not constitute suitable habitat. However, there is marginal habitat within an adjacent pond located 0.3 mile northeast of the wastewater treatment facility in the northern portion of the Study Area, therefore there is low potential for this species to occur within upland portions of the Study Area.

Birds

A total of 25 special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 2 of the BRA). Upon further analysis and after the reconnaissance site visit, six species were determined to be absent due to lack of suitable habitat or because the Study Area is outside the elevational range for the species. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining 18 species that have the potential to occur within the Study Areas are presented below.

Yellow-billed cuckoo

The yellow-billed cuckoo is listed as an endangered species pursuant to the California ESA and threatened under the federal ESA. The federal listing pertains to the western DPS, whose breeding range is west of the Rocky Mountains (USFWS 2014). In California, breeding populations can be found along the Feather River from Oroville to Verona; Butte, Yuba, and Sutter counties; the Owens Valley, Inyo County; the Santa Clara River, Los Angeles County; the Mojave River, San Bernardino County, and the Colorado River, San Bernardino and Imperial counties (Laymon 1998). The western DPS breeds in riparian vegetation communities. Along the Sacramento River, nesting habitat included depositional point bars with young stands of low woody vegetation (Laymon 1998). In Southern California, breeding habitat includes desert riparian woodlands (Sonoran Zones) comprised of dense willow, Fremont cottonwood, and mesquite (*Prosopis* spp.) (Hughes 2020).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). There is a small section of suitable habitat within the Study Area and suitable nesting habitat located within 500 feet of the Study Area on the north bank just downstream from boat ramp (Figure 6 of the BRA). There is potential for this species to nest within 500 feet of the Study Area.

Double-crested cormorant

Double-crested cormorant (*Nannopterum auritum*) is not listed pursuant to either the California or federal ESAs; however, the species is a CDFW watch list species. Double-crested cormorants are widely distributed throughout North America, foraging in shallow water and roosting on exposed rocks, sandbars, pilings, shipwrecks, high-tension wires, or trees near fishing sites (Dorr et al. 2020). They nest in colonies on ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and coastlines where they nest in trees, on the ground, bridges, shipwrecks, abandoned docks, or nesting towers (Dorr et al. 2020). Nesting occurs during April through August.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). The Study Area provides marginal nesting habitat, There is a low potential for double-crested cormorant to nest within the Study Area.

Osprey

Osprey (*Pandion haliaetus*) is not listed pursuant to either the California or federal ESAs; however, it is considered a CDFW watch list species. Osprey have expanded their range throughout much of North America (Bierregaard et al. 2020). Breeding habitat requirements include proximity to fish, open nest sites

free from predators, and an ice-free fledging season (Bierregaard et al. 2020). Natural nesting sites include live and dead trees, cliffs, shoreline boulders, and on the ground on predator-free islands; they readily use artificial nest sites such as duck-hunting blinds, channel markers, communication towers, and platforms erected for nesting (Bierregaard et al. 2020). Breeding season occurrences of osprey are found throughout California, with highest frequencies found along the northern California coast, northern Sacramento Valley, and the Sierra Nevada (eBird 2020). Breeding occurs from April to September.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area provides suitable nesting habitat. There is a potential for osprey to nest within the Study Area.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). The riparian woodlands along the river provide suitable nesting habitat for this species within the Study Area. There is potential for white-tailed kite to nest within the Study Area.

Sharp-Shinned Hawk

Sharp-shinned hawk (*Accipiter striatus*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW watch list species and currently tracked in the CNDDDB. Their breeding range in California is poorly known but breeding or summering sharp-shinned hawks have occurred throughout the state (Bildstein et al. 2020; Small 1994). They nest in most forest types, particularly dense stands with at least some conifers (Bildstein et al. 2020). Breeding occurs during April through August. The species is a common migrant and winter resident in the Central Valley of California.

There are no CNDDDB occurrences of this species within five miles of the Study Area (CDFW 2022). However, the Study Area provides suitable wintering habitat for this species. Sharp-shinned hawk has potential to occur within the Study Area.

Coopers Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW watch list species and is currently tracked in the CNDDDB. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nest throughout California from Siskiyou County to San Diego County and includes the

Central Valley (Rosenfield et al. 2020). Breeding occurs during March through July, with a peak from May through July.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area provides suitable nesting habitat for this species. Cooper's hawk has potential to nest within the Study Area.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as Endangered under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. It is a Bureau of Land Management (BLM) sensitive species, a U. S. Forest Service sensitive species and is considered a USFWS Board of Conservation Concern (BCC). Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies (Buehler 2020). Tree species used for nesting is quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods and aspens (Buehler 2020). Nest trees are generally the largest tree available in a suitable area (Buehler 2020). Breeding activity occurs during late-February through September, with peaks in activity from March to June.

There is a known nesting location (CDFW 2022) in close proximity to the southeast corner of the Study Area. While this nest location is outside of the Study Area boundaries, it is close enough to potentially be affected by Project activities. Two individuals were observed flying around the Study Area during the February 2022 site visit, no individuals or nesting activity was observed during the May 2022 site visit. Bald eagle has potential to nest within the Study Area.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is protected pursuant to the California ESA. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* sp.). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are several CNDDDB occurrences and nest locations of this species within 5 miles of the Study Area, with the closest nest site approximately 0.5 mile (CDFW 2022). The riparian woodlands along the river

provide suitable nesting habitat for this species. There is potential for Swainson's hawk to nest within the Study Area.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel but may also use manmade structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; CDFG 2012).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat is present in burrows found within ruderal grassland on the northern side of the water treatment facility. Therefore, there is potential for burrowing owls to occur in the Study Area.

Nuttall's Woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed and protected under either state or federal ESAs but is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat is present within the Study Area for this species. There is potential for Nuttall's woodpecker to nest within the Study Area.

Merlin

The Merlin (*Falco columbarius*) is not listed pursuant to either the California or federal ESAs Acts but is a CDFW watch list species and currently tracked in the CNDDDB. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the non-breeding season (September through April). Foraging habitat in winter includes open forests, grasslands, and tidal flats (Warkentin et al. 2020). Merlin do not nest in the region but may occasionally forage within grassland and woodland communities on-site during winter or migration.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area provides suitable wintering habitat. There is potential for merlin to occur within the Study Area.

Yellow-Billed Magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast

Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up to six to eight weeks to complete, with eggs laid during April-May, and fledging during May-June (Koenig and Reynolds 2020). The young leave the nest at about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2020).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat is present within the Study Area. There is potential for yellow-billed magpie to nest within the Study Area.

Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) are not listed and protected under either state or federal ESAs but are considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat is present within the Study Area. There is potential for oak titmouse to nest within the Study Area.

Wrentit

The wrentit (*Chamaea fasciata*) is not listed in accordance with either the California or federal ESAs but is designated as a BCC by the USFWS. Wrentit are a sedentary resident along the west coast of North America from the Columbia River south to Baja California (Geupel and Ballard 2020). Wrentit are found in coastal sage scrub, northern coastal scrub, and coastal hard and montane chaparral and breed in the dense understory of Valley oak riparian, Douglas-fir and redwood forests, early-successional forests, riparian scrub, coyote bush and blackberry thickets, suburban parks and larger gardens (Geupel and Ballard 2020). Nesting occurs during March through August.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat adjacent to the Study Area. There is potential for wrentit to nest within the immediate vicinity of the Study Area.

Lawrence's Goldfinch

The Lawrence's goldfinch (*Spinus lawrencei*) is not listed pursuant to either the California or federal ESAs but is currently a BCC according to the USFWS. Lawrence's goldfinch breed west of the Sierra Nevada-Cascade axis from Tehama, Shasta, and Trinity counties south into the foothills surrounding the Central Valley to Kern County; and on the Coast Range from Contra Costa County to Santa Barbara County (Watt

et al. 2020). Lawrence's goldfinch nest in arid woodlands usually with brushy areas, tall annual weeds and a local water source (Watt et al. 2020). Nesting occurs during March through September.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area may provide suitable nesting habitat within weedy patches along the levees and roads. There is a potential for Lawrence's goldfinch to nest within the Study Area.

Song Sparrow "Modesto" Population

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese et al. 2020). The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the "Modesto song sparrow") and *M. m. cooperi* (Arcese et al. 2020). The "Modesto song sparrow" is not listed and protected pursuant to either the California or federal ESAs but is considered a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese et al. 2020). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable. The "Modesto song sparrow" occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). Suitable nesting habitat occurs adjacent to the Study Area. There is potential for song sparrow to nest within the immediate vicinity of the Study Area.

Yellow-breasted chat

Yellow-breasted chat (*Icteria virens*) is a CDFW SSC but has no federal special status. Yellow-breasted chat nest in North America and winter from southern Texas into Mexico and Guatemala (Comrack 2008). In California, the breeding range generally includes northern and northwestern California, the Sierra Nevada foothills south to Kern County, coastal valleys from Santa Clara County south to Baja California, scattered locations east of the Sierran crest, along the Colorado River. Yellow-breasted chat typically nests within early successional riparian habitat with well-developed shrub layers and an open canopy along creeks, streams, sloughs, and rivers (Comrack 2008). Nesting occurs during May through August.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area provides suitable nesting habitat for this species. There is a potential for yellow-breasted chat to nest within the Study Area.

Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs but is currently a USFWS BCC. In California, Bullock's orioles are found throughout the state except the higher elevations of mountain ranges and the eastern deserts (Small 1994). They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees (Flood et al 2020). Nesting occurs from March through July.

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2022). However, the Study Area provides suitable nesting habitat for this species. There is a potential for yellow-breasted chat to nest within the Study Area.

Mammals

A total of four special-status mammal species were identified as having the potential to occur within the Study Area based on the literature review (Table 2 of the BRA). Upon further analysis and after the reconnaissance site visit, two of four mammal species were determined to be absent based on lack of suitable habitat present in the Study Area. No further discussion of these species is provided in this analysis. A brief discussion of the remaining two species is provided below.

Pallid bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (above 7,000 feet). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. This species is not thought to migrate long distances between summer and winter sites (WBWG 2017).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2020). However, the riparian edges and the adjacent agricultural fields provide potential foraging habitat and the trees within the Study Area provide potential roosting habitat. Pallid bat has potential to roost and forage within the Study Area.

Townsend's Big Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. Townsend's big-eared bat is a fairly large bat with prominent bilateral nose lumps and large *rabbit-like* ears. This species occurs throughout the west and ranges from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains. This species has been reported from a wide variety of habitat types and elevations from sea level to 10,827 feet. Habitats include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Its distribution is strongly associated with the availability of caves and cave-like roosting habitat including abandoned mines, buildings, bridges, rock crevices, and hollow trees. Townsend's big-eared bat primarily forages on moths. Foraging habitat is generally edge habitats along streams adjacent to and within a variety of wooded habitats. This species often travels long distances when foraging and large home ranges have been documented in California (WBWG 2017).

There are no CNDDDB occurrences of this species within 5 miles of the Study Area (CDFW 2020). The riparian edges and the adjacent agricultural fields provide potential foraging habitat for this species. Townsend's big-eared bat has potential to forage within the Study Area.

4.4.2.5 Critical Habitat and Essential Fish Habitat

The Study Area is designated Critical Habitat for the following federally listed species.

- Central Valley spring-run ESU Chinook salmon,
- Central Valley DPS steelhead, and
- Southern DPS North American green sturgeon (USFWS 2020).

The Study Area is Essential Fish Habitat (EFH) for Pacific Coast salmon (i.e., Chinook salmon, including Central Valley spring-run and fall-run ESUs).

4.4.2.6 Riparian Habitats and Sensitive Natural Communities

As described above, the riparian habitat in the Study Area is a relatively narrow corridor of mature trees with varying densities of understory cover, depending on levels of human use. Three sensitive natural communities were identified as having potential to occur within the Study Area based on the literature review (CDFW 2022). These included Great Valley Mixed Riparian Forest, Great Valley Cottonwood Riparian Forest, and Great Valley Oak Riparian Forest. Based on the site visit, the mixed riparian woodlands present within the Study Area are likely too narrow and limited in extent to be representative of Great Valley Mixed Riparian Forest or Great Valley Cottonwood Riparian Forest.

4.4.2.7 Wildlife Movement/Corridors and Nursery Sites

The Feather River provides an important aquatic and terrestrial wildlife movement corridor. The river is important migratory habitat for a diversity of native and nonnative fish species, including both resident and anadromous (i.e., ocean-migrating) species.

For the purposes of this analysis, nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries or bat maternity roosts. This data is available through CDFW's Biogeographic Information and Observation System database or as occurrence records in the CNDDDB and is supplemented with the results of the field reconnaissance. No nursery sites have been documented within the Study Area (CDFW 2022) and none were observed during the site reconnaissance.

4.4.3 Biological Resources (IV) Environmental Checklist and Discussion

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

Less Than Significant Impact With Mitigation Incorporated.

The Project would result in temporary construction-related impacts to the upland and aquatic resources that provide habitat for special-status species within the Study Area. Potential impacts to upland habitats include temporary disturbance associated with staging, borings, microtunneling, and disposal of dredged spoils. The Project would result in temporary impacts to aquatic habitat within the Feather River. As such, the Project would potentially have a substantial adverse effect, either directly or through habitat modifications, on special-status species identified by CDFW, USFWS, and NMFS and on Critical Habitat and EFH as identified by NMFS. Impacts by species or habitat group are summarized below.

4.4.3.1 Impacts to Special Status Plants

There is no habitat for federally or state-listed plant species in the Study Area. There is potential for one CRPR 4.2 species (Mexican mosquito fern) to occur and low potential for one CRPR 4.3 species (shield-bracted monkeyflower) and one CRPR 1B.2 species (woolly rose-mallow). Habitat for Mexican mosquito fern only occurs within the WWT overflow ponds and portions of the Feather River. Work within the WWT overflow ponds is limited to disposal of excavated material from the microtunneling. The material will be used to build up existing berms surrounding the WWT overflow ponds. Given that no vegetation removal or disturbance is proposed within suitable habitat for Mexican mosquito fern, potential impacts to this species are minimal.

The remaining two species have low potential to occur along the bank of the Feather River. Vegetation removal associated with equipment access/staging and microtunneling operations could result in impacts to special-status plants if present. Therefore, if vegetation removal is proposed along the bank of the Feather River within suitable habitat for shield-bracted monkeyflower and woolly rose-mallow, implementation of mitigation measures **BIO-1** and **BIO-2** would avoid or minimize potential effects to special status plants.

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

Three special-status fish species have potential to occur in the Study Area. Direct and indirect impacts to special status fish species could occur as a result of exploratory borings in the river, microtunneling

operations, and removal of the old sewer line. Potential impacts include increased noise during boring drilling and/or microtunneling and displacement of sediment in the river during removal of the decommissioned sewer line. Implementation of mitigation measures **BIO-3** described in Section 4.4.4 would minimize the effects of the Project on listed and special-status fish species.

4.4.3.3 *Impacts to Northwestern Pond Turtles*

Northwestern pond turtles may occur in the upland and river portions of the Study Area. The upland areas have low potential to support this species due to the nature of the soils (that are not conducive to nest building) and the extent of public use. Implementation of **BIO-1** and **BIO-4** would avoid or minimize potential effects to this species in upland portions of the Study Area.

In aquatic habitat, noise and disturbance associated with Project set up and installing Best Management Practices (BMPs) for water quality would deter and displace turtles from the work area. This could increase or decrease susceptibility to predation, particularly for hatchlings, depending on how predators behave in response to the microtunneling operation. Overall, the effects are expected to be temporary and minimized by the implementation of mitigation measures **BIO-1**, **BIO-3**, and **BIO-4** in Section 4.4.4.

4.4.3.4 *Impacts to Giant Garter Snake*

Giant garter snakes have low potential to occur adjacent to the Study Area. Implementation of mitigation measures **BIO-1** and **BIO-5** will avoid or minimize potential effects to this species in upland portions of the Study Area. Noise and disturbance associated with the Project would likely deter snakes from approaching the Study Area. Overall, the effects are expected to be temporary and minimized by the implementation of mitigation measures **BIO-1** and **BIO-5** described in Section 4.4.4.

4.4.3.5 *Impacts to Valley Elderberry Longhorn Beetle*

There are numerous elderberry shrubs, the host species for VELB, in the Study Area. Because the shrubs occur in riparian habitat, they are suitable habitat for VELB and potentially occupied habitat (USFWS 2017). Project activities may require removal and/or work within 165 feet of elderberry shrubs, which may result in direct and/or indirect effects to VELB. And Implementation of the mitigation measure **BIO-1** and **BIO-6** described in Section 4.4.4. would minimize the potential for effects on VELB.

4.4.3.6 *Impacts to Special Status Birds*

There is potential for 18 special status bird species to occur within or adjacent to the Study Area. Additionally, all birds and their nests are protected by the federal Migratory Bird Treaty Act (MBTA) and Fish and Game Code. Construction activities have potential to impact nesting birds if present within or adjacent to the construction activities. Implementation of mitigation measure **BIO-7** and **BIO-8** described below would minimize potential effects to special-status birds.

4.4.3.7 Impacts to Special Status Bats

There are two special-status bats with potential to occur in the Study Area. Removal of vegetation associated with equipment access/staging for borings and microtunneling operations could result in impacts to roosting bats, if present. Implementation of mitigation measure **BIO-9** described in Section 4.4.4 would further reduce the potential for effects to special status bats.

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

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

Less Than Significant Impact with Mitigation Incorporated.

The Study Area supports riparian woodland habitat along the Feather River. Construction staging, boring exploration and microtunneling activity would occur in upland, developed or disturbed areas of the Study Area. Project construction may require vegetation clearing or tree removal therefore, implementation of mitigation measure **BIO-10** described below would further reduce the potential for additional impacts to riparian habitats. Implementation of this mitigation measure would result in a less than significant impact.

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

Less Than Significant Impact With Mitigation Incorporated.

The Project would have no direct impact on federally protected wetlands; however, the Feather River is considered Waters of the U.S. Project implementation would temporarily disturb Waters of the U.S. through proposed boring exploration and removal of decommissioned pipe under the Feather River. Implementation of mitigation measure **BIO-11** described below would reduce potential impacts to Waters of the U.S. Implementation of this mitigation measure would result in a **less than significant** impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

The forested uplands and open space lands within the Study Area provide some limited migratory opportunities for wildlife. Establishment of the staging areas and operation of equipment is likely to temporarily disturb and displace most wildlife from the Study Area. Some wildlife such as birds or nocturnal species are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume.

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Project does not conflict with a local policy or ordinance protecting biological resources, including tree ordinances. As such, **no impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The Study Area is not currently covered by any local, regional, or state conservation plan. Therefore, the Project would not conflict with a local, regional, or state conservation plan. However, once finalized and adopted the Butte Regional Conservation Plan (Plan) will provide a comprehensive, coordinated, and efficient program to conserve ecologically important resources in the lowland and foothill region of Butte County (the *Plan Area*), including endangered, threatened, and other at-risk species and their habitats; natural communities and the ecological processes that support them; biodiversity; streams and ponds and the watersheds that support them; wetlands and riparian habitats; and ecological corridors. As such, **no impact** would occur.

4.4.4 Mitigation Measures

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

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

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

for special status species to occur on the Project site. The training will provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for non-compliance.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-2: **Plants.** If vegetation removal is proposed within suitable habitat for shield-bracted monkey flower and woolly-rose mallow, implementation of the following measure would minimize potential impacts to special-status plants:

Preconstruction floristic surveys shall be conducted for any areas of vegetation removal in the Study Area with the potential to support shield-bracted monkey flower and woolly rose mallow. The area of ground disturbance and a 25-foot buffer would be surveyed by a qualified botanist during the appropriate blooming period prior to the start of Project activity. If no special status plants are found during the preconstruction surveys, no further measures are necessary. If surveys identify any special-status plants, the Applicant shall identify them with flagging and avoid them with a 25-foot no-disturbance buffer during Project activities. If this avoidance is not feasible, the Applicant shall consult with CDFW to determine whether alternative avoidance measures that are equally protective are possible

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-3: **Fish Species, Critical Habitat, and Essential Fish Habitat.** To avoid and minimize potential adverse effects to listed and special status fish species, designated critical habitat, and EFH implement the following:

- Implement Project activities during a limited work window (likely June 15 through October 15) to avoid the most sensitive life stages of ESA-listed anadromous fish species.
- Deploy measures, as practicable, to reduce sediment resuspension such as a turbidity curtain, if feasible, given the flow volume and velocity in the Study Area.
- Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with NMFS on the Project effects to ESA-listed anadromous fish species, designated Critical Habitat, and EFH.
- Consult with CDFW and if necessary, secure an Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-4: Northwestern Pond Turtle. Implementation of the following measure would minimize impacts to northwestern pond turtle:

Conduct a preconstruction northwestern pond turtle survey in the construction staging and dewatering areas within 48 hours prior to construction activities. Any northwestern pond turtle individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-5: Giant Garter Snake. Conduct a pre-construction giant garter snake survey in the construction staging areas within 24 hours prior to construction activities. Any giant garter snake individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 200 feet from the Project work area where they were found.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-6: Valley Elderberry Longhorn Beetle. To avoid and minimize potential adverse effects to VELB, implement the following:

- Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with USFWS, if necessary, on the project effects to ESA-listed VELB
- The area surrounding avoided elderberry shrubs shall be fenced and/or flagged as close to construction limits as possible. Recognizing that the Project may require staging or other construction activities within 165 feet of some shrubs, the shrubs shall be protected during construction by establishing and maintaining a high-visibility fence as far from the drip line of each elderberry shrub as feasible.
- As much as feasible, all activities that could occur within 165 feet of an elderberry shrub will be conducted outside of the flight season of VELB (March – July).
- Herbicides will not be used within the drip line of any elderberry shrubs. Insecticides will not be used within 100 feet of an elderberry shrub and will be applied using a backpack sprayer or similar direct application method.

- The potential effects of dust on VELB will be minimized by applying water during construction activities or by presoaking work areas that will occur within 100 feet of any potential elderberry shrub habitat.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *City of Gridley Public Works Department.*

BIO-7: Special-Status Birds and MBTA-Protected Birds (including nesting raptors). To protect nesting birds, no Project activity shall begin from February 1 through August 31 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds, raptors, including bald eagle, burrowing owl, and Swainson's hawk.

- All Nesting Birds – Within 14 days prior to construction (or less if recommended by CDFW), survey for nesting activity of birds within each Project work area and a 100-foot radius. Any observed active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Raptors (including bald eagle) – Within 14 days prior to construction, survey for nesting activity of birds of prey within each Project work area and a 500-foot radius. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Burrowing owl – A qualified wildlife biologist shall survey for burrowing owl within the Project work area and a 250-foot radius of the Project work area, within 14 days prior to starting Project activities. Surveys shall be conducted at appropriate times to maximize detection (dawn or dusk). Any observed active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.
- Swainson's hawk – Within 14 days prior to construction, survey for nesting activity of birds of prey within each Project work area and a 0.25-mile radius. Any observed active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival.

Timing/Implementation: *Prior to construction*

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-8: Yellow Billed Cuckoo. To protect potentially nesting yellow-billed cuckoo, implement the following mitigation:

- To encourage western yellow-billed cuckoos to choose nesting sites away from construction activities, crews will make every effort possible to begin construction activities within 500 feet of suitable habitat before the start of the breeding season (i.e., before May 31).
- If construction activities begin after May 31 and if it is anticipated that construction-related disturbances within 500 feet of suitable habitat cannot be avoided, protocol surveys for yellow-billed cuckoo will be conducted. Surveys will follow the latest version of *A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo* (Halterman et al. 2015).
- Biologists will coordinate with the USFWS and CDFW prior to conducting surveys. Survey methods and results will be reported to the USFWS and CDFW at the conclusion of the surveys. If cuckoos are detected during surveys, the nest or general location will be mapped by the biologists and a 500-foot buffer will be established, or other distance as approved by the USFWS and CDFW, no-disturbance buffer between construction activities and the area identified. The no-disturbance buffer will be maintained until it has been determined by a qualified biologist that young have fledged or the nest is no longer active.
- If removal of vegetation identified as suitable habitat is proposed, consultation with USFWS may be required. Through the CWA Section 404 and/or 408 Permission, request the USACE initiate ESA Section 7 Consultation with USFWS, if necessary, on the Project effects to ESA-listed yellow-billed cuckoo.

Two special-status birds identified as potentially occurring are migrants and/or wintering species. These are sharp-shinned hawk and merlin. These species do not nest in this region or nesting habitat does not occur in the Survey Area. Therefore, no surveys for wintering and/or migrant or foraging species are recommended.

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department

BIO-9: Special-Status Bats. Within 14 days of construction, a qualified biologist will survey for all suitable roosting habitat (e.g., manufactured structures, trees) proposed for removal. If suitable roosting habitat is identified and proposed for removal, a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are found, consultation with CDFW prior to initiation of construction activities may be required. If bats are not found during the preconstruction surveys, no further measures are necessary.

Timing/Implementation: Prior to construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-10: Riparian and Sensitive Natural Communities. A Streambed Alteration Agreement (SAA), pursuant to Section 1602 of the California Fish and Game Code, must be obtained for any activity that will impact the Feather River and riparian habitats. Minimization measures will be developed during consultation with CDFW as part of the SAA agreement process to ensure protections for affected fish and wildlife resources.

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department.

BIO-11: Waters of the U.S./State. To avoid or minimize anticipated short-term adverse effects to Waters of the U.S. implement the following measures:

- Obtain coverage under Section 404 of the federal CWA from USACE for the exploratory borings within the Feather River. The impacts from such actions are expected to be temporary and solely associated with the dewatering activities. Therefore, no net loss of aquatic resources is likely to occur as a result of the Project and no mitigation is required.
- A Water Quality Certification or waiver pursuant to Section 401 of the CWA, as issued by RWQCB, must be obtained for Section 404 permit actions.
- A Waste Discharge Requirement for dredge and fill in Waters of the State under the Porter-Cologne Water Quality Control Act as issued by RWQCB must be obtained for impacts to Waters of the State.

Timing/Implementation: Prior to construction

Monitoring/Enforcement: City of Gridley Public Works Department.

4.5 Cultural Resources

The following information was provided by ECORP Consulting, Inc. (2022b) as a part of the Cultural Resources Historic Property Identification Report for the Proposed Project. The information provided below is an abridged version of this report and is provided here to afford a brief context of the Cultural Resources in the Project Area.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code § 6250 et seq.) and California's open meeting laws (The Brown Act, Government Code § 54950 et seq.) protect the confidentiality of Native American cultural place information. Because the disclosure of information about the location of cultural resources is prohibited by the Archaeological Resources Protection Act of 1979 (16 U.S. Code [USC] 470HH) and Section 307103 of the National Historic Preservation Act (NHPA), it is exempted from disclosure under Exemption 3 of the federal Freedom of Information Act (5 USC 552). Likewise, the Information Centers of the California Historical Resources Information System (CHRIS) maintained by the California Office of Historic

Preservation (OHP) prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a confidential document, which is not intended for public distribution in either paper or electronic format. As such, the Cultural Resources Inventory Report is not included in this Initial Study.

4.5.1 Area of Potential Effects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of a project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA) review, the term *Project Area* is used rather than *APE*. The terms *Project Area* and *APE* are interchangeable in this section of the IS/MND. The horizontal APE consists of all areas where activities associated with a project are proposed and, in the case of this Project, equals the Project Area subject to environmental review under the National Environmental Policy Act and CEQA. This includes the use of existing access roads, equipment staging areas, excavation shafts, and paths for microtunneling. The horizontal APE is illustrated in Figure 1 and also represents the survey coverage area. The horizontal APE is approximately 96.3 acres, and the primary work area is approximately 1.2 acres.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE for this Project includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project, depending on the geotechnical investigation results, but could extend as deep as 70 feet below the current surface for geotechnical borings. A review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface. The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. The cultural resources inventory assumed that the project will not have any structures to create a vertical APE.

4.5.2 Cultural Resources Study

ECORP requested a records search for the Project Area at the Northeast Information Center (NEIC) of the CHRIS at California State University-Chico on January 26, 2022. The purpose of the records search was to determine the extent of previous surveys within a 1-mile radius of the Proposed Project location and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NEIC staff provided the records search information to ECORP on February 22, 2022.

In addition to the official records and maps for archaeological sites and surveys in Butte County, the following historic references were also reviewed: Historic Property Data File for Butte County (OHP 2012); Built Environment Resource Directory (OHP 2020); The National Register Information System (National Park Service [NPS] 2022); Office of Historic Preservation, California Historical Landmarks (CHL; OHP 2022); CHL (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (Caltrans 2019);

Caltrans State Bridge Survey (Caltrans 2018); California State Lands Commission (2022) shipwreck database (CSLC 2022); and *Historic Spots in California* (Kyle 2002).

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2022). Historic maps reviewed consist of the following:

- 1856 BLM GLO Plat map for Township 17 North Range 3 East;
- 1871 BLM GLO Plat map for Township 17 North Range 3 East;
- 1888 USGS Marysville, California topographic quadrangle map (1:125,000 scale);
- 1912 USGS Gridley, California topographic quadrangle map (1:31,680);
- 1952 Gridley, California topographic quadrangle map (1:31,680); and
- 1952 photo revised in 1973 Gridley, California (1:24,000) topographic map (1:24,000 scale).

ECORP reviewed historic aerial photos taken in 1969, 1970, 1994, 1998, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 were for any indications of property usage and built environment.

ECORP conducted a search for a local historical registry. The search revealed that the Hazel Hotel is the nearest National Register of Historic Places- (NRHP-) eligible property, which is approximately 3 miles west of the Project Area in the City of Gridley.

As a result of previous investigations by other firms, three cultural resources have been previously recorded within the Project Area: P-04-1123, a pre-contact habitation site; P-04-4184, a pre-contact habitation site; and P-04-4250/P-51-5150, the historic-era Feather River West Levee. The two pre-contact sites underwent recovery between 2014 and 2017 (Rosenthal 2017). Because of the recovery, no evidence of these pre-contact sites was identified on the ground surface within the Project Area.

ECORP archaeologists walked the Feather River West Levee during the field survey. The 2022 survey by ECORP identified one new cultural resource within the Project Area: FR-01, historic-era wastewater ponds. ECORP evaluated FR-01 as not eligible for the NRHP and California Register of Historical Resources (CRHR).

ECORP closely inspected the two work areas for cultural material. The eastern work area's surface was covered in rip rap, and the western work area contained an agricultural field near the river's edge. ECORP did not observe any cultural material in either planned work area. The work areas measure approximately 1 acre in size.

No cultural resources are present within the planned work areas as a result of the field survey and the records search.

4.5.3 Environmental Setting

The Project Area is located along the banks of the Feather River, a principal tributary of the Sacramento River, in the Southern Sacramento Valley. The Sacramento Valley forms the northern third of California's

Great Central Valley and is characterized by a nearly level alluvial plain that extends for about 150 miles from the base of the Klamath Mountains on the north to the confluence of the Sacramento and San Joaquin rivers on the south. The North Coast Ranges are to the west and the northern Sierra Nevada and southern Cascade ranges are to the east. The Feather River drains roughly 4,500 square miles along the eastern slopes of the northern Sierra Nevada and southern Cascade ranges.

The Project Area is near the center of the southern Sacramento Valley, in the greater Sacramento River Watershed. The area is primarily characterized by agricultural land, ruderal grassland, open space, and limited riparian vegetation. It is surrounded by rural agricultural lands and open space, with some rural residencies to the west on the outskirts of the community of Gridley. Elevations range from 75 to 100 feet above MSL. Geology, vegetation, and wildlife in the area and specific to the APE are discussed below.

4.5.3.1 Regional Pre-Contact History

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 8,000 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 definitively 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 floral 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 (Wallace 1978).

Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the Millingstone Horizon (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to 8,000 BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

Archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments in sites dating to after about 5,000 BP. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. New peoples from the Great Basin began entering Southern California during this period. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before, and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups that the first Europeans encountered during the 18th century (Wallace 1978). Despite the regional differences,

many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The presence of small projectile points indicates the introduction of the bow and arrow into the region sometime around 2,000 BP (Wallace 1978; Moratto 1984).

4.5.3.2 Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. The Viceroy of New Spain (Mexico) sent Cabrillo north to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978).

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay Area in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established. The Franciscan missionary friars established 21 missions in Alta California (the area north of Baja California) beginning with Mission San Diego in 1769 and ending with the mission in Sonoma established in 1823. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. No missions were established in the Central Valley. The nearest missions were in the vicinity of San Francisco Bay and included Mission San Francisco de Asis (Dolores) established in 1776 on the San Francisco Peninsula, Mission Santa Clara de Asis at the south end of San Francisco Bay in 1777, Mission San Jose in 1797, Mission San Rafael, established as an *asistencia* in 1817 and a full mission in 1823, and Mission San Francisco Solano in Sonoma in 1823 (Castillo 1978; California Spanish Missions 2011). Presidios were established at San Francisco and Monterey. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers (Thompson and West 1880).

The Mexican government closed the missions in the 1830s and former mission lands, as well as previously unoccupied areas, were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or ranchos (Robinson 1948). During the Mexican Period there were small towns at San Francisco (then known as Yerba Buena) and Monterey. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort (Bidwell 1971). Gold was discovered in the flume of

Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848 (Marshall 1971). The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento.

The American Period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the U.S. in 1848. As a result of the treaty, Alta California became part of the U.S. as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries, which were surveyed by the U.S. Surveyor General's office. Land outside the land grants became federal public land, which was surveyed into sections, quarter-sections, and quarter-quarter sections. The federal public land could be purchased at a low fixed price per acre or could be obtained through homesteading (after 1862) (Robinson 1948).

4.5.3.3 Project Area History

The Project Area historically was part of land within the Rancho Boga, a Mexican Land Grant of more than 22,000 acres located in present-day Butte and Sutter counties. It was granted in 1844 by Governor Manuel Micheltorena to one individual, a German man named Charles William Flugge. It extended south from present-day Gridley along the west bank of the Feather River (Hoffman 1862). Flugge came to California from Germany in 1841 with the Bartleson-Bidwell Party and became legal advisor to John Sutter. Sutter and Flugge had a falling out over a land dispute in 1845, after which Flugge moved to Los Angeles and entered the retail business. Flugge was eventually found dead in 1852, but not before he sold the land of Rancho Boga to Thomas O. Larkin. After the Land Act of 1851, Larkin filed a claim for the Rancho Boga in 1852 with the public lands commission and was granted the land patent in 1865 (Hague and Langum 1995).

Butte County was one of the original 27 counties in California, and originally encompassed a much larger area than it does today. It was named for the landform now known as the Sutter Buttes, located in present-day Sutter County to the south (Kyle 2002). In the latter part of the 19th century, the County land was primarily agricultural, with timber and mineral lands encompassing less than half. Captain Louis A. Arguello led an expedition to the region in 1820 and as likely the earliest nonnative to explore the area. Fur trappers of the Hudson Bay Company followed and traversed the region as early as 1828. Other hunters and settlers in the Sacramento Valley began to travel north on the Hudson Bay Trail to Oregon, including John Bidwell, who mapped the upper reaches of the valley and returned to Sutter's Fort. Bidwell's maps were used to identify the first lands selected for applying for grants from the Mexican Government (Wells et al. 1882).

In 1844 Edward A. Farwell and Thomas Fallon settled on the Farwell Grant, which encompasses the city of Chico; this was to be the first settlement in Butte County. John Bidwell discovered gold on the Feather River two months after James Marshal's first gold discovery at Sutter's Mill in Coloma. This led to an influx of gold seekers to the area, and the river was lined with countless mining camps. Some of these camps grew to prosper into towns; others were short-lived (Wells et al. 1882).

The County of Butte was organized after California gained statehood and counties were established under the Act of February 18, 1850. Butte County originally included the majority of lands in what is now Lassen, Plumas, Tehama, Colusa, and Sutter counties. The boundaries were reconfigured within the next few months (Wells et al. 1882).

Gridley was one of the last of 12 townships created by the County Board of Supervisors in 1881 (Wells et al. 1882). The early settlement of Gridley was surrounded by dry farms of wheat, oats, and barley in the 1850s and 60s. The Oregon and California Railroad (later Western Pacific Railroad, then Southern Pacific Railroad) established a station there in the early 1870s, leading to a population boom in the area. The town was laid out in 1870 when the railroad was completed, and many affluent members of Butte County resided there. The Gridley Hotel was open in 1872, Wells Fargo and Co. opened an office in 1874, and the Gridley Steam Flouring Mills were erected as joint stock company in 1874. The newspaper, the Gridley Herald, was in circulation by 1880. Gridley had a schoolhouse and three churches in the late 1870s, Methodist, Catholic, and United Brethren (Wells et al. 1882).

The rail stop and settlement was called Gridley after the owner of the farmland on which the town was built, a sheep farmer named George W. Gridley (Gudde 1969). The railroad contributed significantly to the population growth of Gridley. Wool and sheep were initially the main products from the area, and field crops and cattle soon followed with the creation of an irrigation system.

Citizens created a canal system in 1902 that tapped into the Feather River and brought water for irrigation to the farms. As a result, farming in the area became more diversified with crops such as alfalfa, clover, beans, beets, and orchards of fruits and nuts. The irrigation system also provided for farming on a smaller scale by individual families. Gridley was incorporated in 1906 (Reunion Committee 1980).

In 1904, the promise of fertile soils and low-cost irrigation fees in and around Gridley was advertised throughout Nevada, Idaho, Utah, and the midwestern states. This led many farming families to relocate to the Gridley area from states such as Utah, Idaho, and Nevada, increasing the population. Many of these early settlers and farmers were members of the Church of Jesus Christ of Latter Day Saints (Mormon), and by the early 20th century, there was a large Mormon community in Gridley that settled south of present-day Little Street, south of the current Project Area. By the end of 1908, there were more than 500 Mormon settlers in the Gridley area and their first chapel was constructed on the west corner of Sycamore and Vermont streets in 1912 with a seating capacity of 1,000—the largest Mormon meetinghouse west of Salt Lake City at that time (Reunion Committee 1980).

4.5.3.4 Known Historic and Cultural Resources at the Project Site

Seventeen previous cultural resource investigations have been conducted in or within a 1-mile radius of the Project Area, covering approximately 40 percent of the total area surrounding the APE within the records search radius. Of the 17 studies, seven were conducted within the APE and the remaining 10 were conducted within the 1-mile radius (ECORP 2022b). Table 4.5-1 lists the previous studies conducted within the Project Area. These studies revealed the presence of pre-contact sites, including lithic scatters, human burials, and habitation sites, and historical sites, including levees, and sites associated with historic habitation activities. The results of the records search indicate that only a small portion of the Project Area

has been previously surveyed for cultural resources, and therefore, ECORP conducted a pedestrian survey of the APE for the Project under current (2014) USACE protocols.

Seven previous studies were completed within the Project Area. Five of the reports detail the results of cultural studies completed for the levees used by the Sacramento River Flood Control System. Bouey (1991) completed a survey of the levees in the Marysville and Yuba City area (NEIC report #001047). The surface of each side of the levee was inspected by an archaeologist. The fieldwork resulted in the identification of two archaeological sites, one of which is in the current Project Area (P-04-1123, a pre-contact habitation site). Auger excavations were performed at each site. The report concluded that additional testing was recommended at each site. Bouey (1991) completed the recommended testing at the two archaeological sites (NEIC report # 001244). Three units were excavated at each site, and both sites were recommended eligible for the NRHP.

Kim, Monte and Kathryn Haley (Kim 2013) completed a cultural resources study for two locations along Feather River West Levee on either side of East Gridley Road to assist in erosion maintenance (NEIC report # 0013864). A pedestrian survey with transects spaced 2 to 5 meters apart covered the levee. The 2016 study area is located within the northwestern portion of the Project Area, just south of East Gridley Road. One built environment resource, the Feather River West Levee (P-04-4250/P-51-5150), was identified within their Project Area and as eligible for the NRHP.

The records search also determined that 11 previously recorded pre-contact and historic-era cultural resources are located within 1 mile of the Project Area. Of these, seven are believed to be associated with Native American occupation of the vicinity, three are multicomponent sites, and one is the historic-era Feather River West Levee. Three previously recorded cultural resources are located within the Project Area: P-04-1123, a pre-contact habitation site; P-04-4184, a pre-contact habitation site; and P-04-4250/P-51-5150, the historic-era Feather River West Levee. Eight cultural resources are located outside of the APE. The identification of the specific location of this site is prohibited by law.

Table 4.5-1. Previous Cultural Studies in the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of Project Area?
001047	Bouey, Paul D.	Sacramento River Flood Control System Evaluation, Marysville-- Yuba City Area, Cultural Resources Survey (Contract No. DACW0590P1417)	1990	Yes
001244	Bouey, Paul D.	Cultural Resources Test Excavations, Sacramento Systems Evaluation, Phase II, Butte and Sutter Counties, California	1993	Yes
008954	Grant, Joanne	Cultural Resources Report for Geotechnical Borings along the Feather River, Sutter Bypass, and Wadsworth Canal	2007	Yes
012786	McCann, Robert	Cultural Resources Survey Report for NRCS Project 13FY04-0011: Bains Orchard Micro Irrigation System and Other Conservation Practices, Butte County, California	2013	Yes

Table 4.5-1. Previous Cultural Studies in the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of Project Area?
013864	ICF – Kim, Monte and Kathryn Haley	Archaeological Inventory Report for the Gridley Erosion Repair Site of the Feather River West Levee Project, Butte County, California	2016	Yes
014485	Sims, Ashleigh and Robin Hoffman	California Department of Water Resources, Sutter Maintenance Yard Levee Units Archaeological Survey Report	2019	Yes
014738	Tony F. Weber	Cultural Resource Assessment of the Proposed City of Gridley Wastewater Treatment System Expansion Project	1976	Yes

Source: ECORP 2022b

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

Less Than Significant Impact With Mitigation Incorporated.

The CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A significant impact would occur if a proposed project would cause a substantial adverse change through physical demolition, destruction, relocation, or alteration of the resource. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the CRHR or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. As discussed above, and as a result of previous investigations by other firms, three cultural resources have been previously recorded within the Project Area: P-04-1123, a pre-contact habitation site; P-04-4184, a pre-contact habitation site; and P-04-4250 and P-51-150, the historic-era Feather River West Levee. ECORP identified one new resource during the 2022 survey: FR-01, three historic-era wastewater ponds. ECORP evaluated this resource and found it is not eligible using NRHP and CRHR criteria. This resource is not considered a Historic Property for purposes of Section 106 of the NHPA or a Historical Resource for purposes of CEQA.

As a result of the field survey and the records search, no NRHP or CRHR eligible cultural resources are present within either planned work area.

Pre-contact sites P-04-1123 and P-04-4184 are recorded within the levee prism. Equipment will use the levee to drive to the work area and will not impact either site. Additionally, these two resources have undergone data recovery, and therefore, the project would have no effect on those resources.

The historic-era Feather River West Levee (P-04-4250/P-51-5150) has been previously determined eligible for inclusion in the NRHP under Criterion A by the USACE, with concurrence from the State Historic Preservation Office. Accordingly, it is also eligible for inclusion in the CRHR.

The Proposed Project will have no impact on the cultural resources present within the Project Area. The levee will be used for access to the work area and will not be altered during the Project. The two pre-contact resources are located subsurface within the levee and will not be altered during the Project. The wastewater ponds will be used to dump soils during the Project, but the ponds are not considered Historic Properties or Historical Resources and have already been altered significantly since their construction.

However, there exists a high potential for buried pre-contact archaeological sites in the Project Area due to several factors. The presence of alluvium along the Feather River and soil deposition and buildup from decades of hydraulic and dredge mining activities have buried past ground surfaces. Pre-contact archaeological sites are known to occur along waterways. Further, it is highly probable that the Feather River West levee contains pre-contact deposits due largely to the nature of levee construction.

In all cases, the lead agency will require that any unanticipated (or post-review) discoveries found during Project construction be managed through a procedure designed to assess and treat the find as quickly as possible and in accordance with applicable state and federal law.

Because there always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. As such, mitigation is required to protect undiscovered cultural resources. Therefore, mitigation measure **CUL-1** is required to reduce potential adverse impacts. Implementation of this mitigation measure would reduce potential impacts to cultural resources to a **less than significant** level.

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

Less Than Significant Impact With Mitigation Incorporated.

As discussed above, there are no known archaeological resources within the Project Site. Treatment options under California Public Resources Code (PRC) Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that

the artifacts would not meet one or more of the criteria for defining a unique archaeological resource). In addition, CEQA Guidelines Section 15064.6 requires that excavation activities be stopped whenever human remains are uncovered, and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) and/or tribe that would be the most probable descendent must be contacted within 24 hours. At that time, Butte County, as the lead agency, must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

While the Project Site was surveyed for archaeological resources, there remains the possibility that unknown subsurface archaeological resources may be discovered during Project construction. Therefore, Mitigation Measure **CUL-1** is provided below to address the potential for the discovery of any unrecorded or previously unknown archaeological resources. With implementation of this mitigation, impacts would be **less than significant**.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

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

4.5.5 Mitigation Measures

CUL-1: Cultural or Archaeological Resource Discovery. All extraction and reclamation plans shall include the following.

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic 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:
 - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.

- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead federal agency, the lead CEQA agency, and landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Butte County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation:

During construction

Monitoring/Enforcement:

City of Gridley Public Works Department.

4.6 Energy

This section describes the environmental and regulatory setting for energy, including applicable plans, policies, regulations, and/or laws. This section also describes the potential for energy impacts that would result from the Proposed Project.

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 (California Energy Commission [CEC] 2019). The Project Site is within the Pacific Gas and Electric Company (PG&E) service area. PG&E generates or buys electricity from hydroelectric, nuclear, renewable, natural gas, and coal facilities and provides natural gas and electricity to most of the northern two-thirds of California, from Bakersfield and Barstow to near the Oregon, Nevada, and Arizona state lines. PG&E provides 5.2 million people with electricity and natural gas across 70,000 square miles. In 2017, PG&E announced that 80 percent of the company's delivered electricity comes from greenhouse gas emission-free sources including renewables, nuclear, and hydropower.

The California Public Utilities Commission (CPUC) regulates 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 CEC maintains a power plant database that describes all of the operating power plants in the state by county. Butte County contains 26 power plants generating electricity, of which 15 are hydro-powered, nine are solar-powered, two are natural gas-fired, and one is biomass-fired (CEC 2021).

4.6.1.2 Existing Transmission and Distribution Facilities

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 U.S. 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 is a fundamental requirement for all transmission lines. A right-of-way 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 dimensions of a right-of-way depend on the voltage and number of circuits carried and the tower design. Typically, transmission line rights-of-way range from 100 to 300 feet in width. The electric power supply grid within Butte County is part of a larger supply network operated and maintained by PG&E that encompasses a large portion of the Northern and Central California regions. This system ties into yet a larger grid known as the California Power Pool that connects with the San Diego Gas and Electric and Southern California Edison companies. These companies coordinate the development and operation, as well as purchase, sale, and exchange of power throughout the State of California. Within Mendocino County, PG&E owns most of the transmission and distribution facilities. Three 60 kv transmission lines pass through the County, one 115 kv line, three 230 kv lines, and two 500 kv lines connecting Butte County to the national power grid, allowing the wheeling of power to locations where power is in demand (CEC 2022).

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 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.

4.6.1.3 Fuel Consumption

Vehicle fuel use is typically measured in gallons (e.g., of gasoline or diesel fuel). All off-road equipment and off-road vehicle fuel consumption in Butte County from 2017 to 2021 is shown in Table 4.6-1. Offroad fuel consumption has increased between 2017 and 2021.

Table 4.6-1. Automotive Fuel Consumption in Butte County 2017-2021	
Year	Total Fuel Consumption (gallons)
2021	2,764,886
2020	2,664,934
2019	2,453,851
2018	2,251,423
2017	2,058,221

Source: CARB 2021a

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As previously mentioned, the Project proposes the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River.

The impact analysis focuses on the source of energy that is relevant to the Proposed Project: the equipment fuel necessary to implement the pipeline replacement. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. For the purpose of this analysis, the amount of fuel necessary to implement Project operations is calculated and compared to that consumed by off-road equipment² in Butte County.

The amount of total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Energy consumption associated with the Proposed Project is summarized in Table 4.6-2.

Table 4.6-2. Equipment and Automotive Fuel Consumption During Project Implementation		
Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Project Implementation	37,143 gallons ¹	1.3 percent

Source: ¹Climate Registry 2016; Greenhouse Gas Emissions calculations (Attachment 4.3)

Notes: The Project increases in construction fuel consumption are compared with the countywide off-road equipment fuel consumption in 2021 as shown in Table 4.6-1, the most recent full year of data.

¹Offroad equipment consists of construction equipment such as cranes, tractors, and haul trucks

In September 2018, Governor Edmund "Jerry" Brown Signed Executive Order (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 a net zero CO₂ emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. Carbon emissions are a byproduct of fossil fuel use, of which the Project would require during construction activities. This goal is in addition to existing statewide targets for GHG 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."

Fuel necessary for Project implementation would be required for the operation and maintenance of off-road equipment and the transportation of materials to and from the Project Site. The fuel expenditure necessary to implement the Project would be temporary, lasting only as long as the microtunneling activities. As further indicated in Table 4.6-2, the Project's gasoline fuel consumption during a single year of operations is estimated to be 37,143 gallons of fuel. This would increase the annual countywide off-road gasoline fuel use in the county by 1.3 percent for one year. As such, Project activities would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate

² ¹Offroad equipment consists of construction equipment such as cranes, tractors, haul trucks, generators, etc.

the use of construction equipment that would be less Energy efficient than at comparable construction sites in the region or the state. The mining operators 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. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

For the reasons discussed above, this impact would be **less than significant**.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The Project proposes the replacement of a wastewater pipeline underneath the Feather River and does not include any activities or operations beyond this construction. The Project is subject to all local, state, and federal standards set in place to promote the use of renewable energy or energy efficiency.

Conformance with these standards ensures that the Project would not obstruct any renewable energy or energy efficiency plans. For these reasons, there is **no impact**.

4.6.3 Mitigation Measures

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

4.7 Geology and Soils

4.7.1 Geomorphic Setting

The Project Site is located in the north-central portion of the Great Valley geomorphic province of California. The Great Valley province is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic Period (about 160 million years ago). Great oil fields have been found in southernmost San Joaquin Valley and along anticlinal uplifts on its southwestern margin. In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor (California Geological Survey [CGS] 2002).

4.7.2 Regional Seismicity and Fault Zones

In California, special definitions for active faults were devised to implement the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates development and construction in order to avoid the hazard of surface fault rupture. The State Mining and Geology Board established policies and criteria in accordance with the act. The board defined an active fault as one that has had surface displacement within the

Holocene (about the last 11,000 years). A potentially active fault was considered to be any fault that showed evidence of surface displacement during Quaternary time (last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria in an effort to limit zoning to only those faults with a relatively high potential for surface rupture. Thus, the term *sufficiently active* was defined as a fault for which there was evidence of Holocene surface displacement. This term was used in conjunction with the term *well-defined*, which relates to the ability to locate a Holocene fault as a surface or near-surface feature (CGS 2011).

According to the CGS, the Project Site is not located within the immediate vicinity of an Alquist-Priolo Earthquake Fault Zone (CGS 2022). The closest fault zones to the Project Site are the Foothill Fault System located approximately 12 miles east of the Project Site and the only potentially active fault zone being the Cleveland Hill fault zone located 9 miles northeast of the Project Site.

4.7.3 Soils

According to the U.S. Department of Agriculture NRCS Soil Survey Report, the Project Site consisting of areas where shaft boring and microtunneling are to occur for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. The dominate soil in the Project is made up of the Gianella soil complex (NRCS 2022). The Gianella complex, making up approximately 94.5 percent of the Project Site, is comprised of 85 percent of the Gianella fine sandy loam, while the remaining 15 percent is made up of minor components. Slopes in the Project region range from 0 to 2 percent, and the landscape is characterized as *Flood Plains* for the Columbia-Gianella complex and *Water* for the portion within the Feather River (NRCS 2022). The actual construction area is made up of Gianella fine sandy loam and water.

The remainder of the Project Site consisting of the access road, staging areas, and WWTP are made up of the Gianella fine sandy loam complex, Boga-Loemstone complex, and the Liveoak sandy clay loam complex with a range of 0 to 2 percent slopes and a range from frequently flooded to rarely flooded as the elevation shifts towards the levee.

Table 4.7-1. Project Area Soil Characteristics			
Soil Name, Map Unit Symbol	Percentage of Site	Drainage	Erosion Hazard¹
Boga-Loemstone, 0 to 1 percent Slopes, 121	0.1%	Moderately well drained	Slight
Liveoak sandy clay loam, 0 to 2 percent slopes, 138su	1.0%	Moderately well drained	Slight
Columbia, 0 to 2 percent slopes, frequently flooded, 150	2.0%	Somewhat poorly drained	Slight
Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded, 152	8.9%	Moderately well drained	Slight

Table 4.7-1. Project Area Soil Characteristics

Soil Name, Map Unit Symbol	Percentage of Site	Drainage	Erosion Hazard¹
Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded, 158	49.0%	Moderately well drained	Slight
Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded, 161	36.6%	Moderately well drained	Slight
Water, 161	2.4%	-	-
Soil Name, Map Unit Symbol	Runoff Potential²	Linear Extensibility (Rating)³	Frost Action⁴
Boga-Loemstone, 0 to 1 percent Slopes, 121	C	3.8% (moderate)	None
Liveoak sandy clay loam, 0 to 2 percent slopes, 138su	B	2.0% (low)	None
Columbia, 0 to 2 percent slopes, frequently flooded, 150	A	1.0% (low)	None
Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded, 152	A	0.0% (low)	None
Gianella fine sandy loam, 0 to 1 percent slopes, occasionally flooded, 158	A	0.0% (low)	None
Gianella fine sandy loam, 0 to 1 percent slopes, rarely flooded, 161	A	0.0% (low)	None
Water, 161	-	-	

Source: NRCS 2022

Notes:

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

4.7.4 Paleontological Resources

A paleontological records search was completed using the University of California Museum of Paleontology (UCMP) Locality Search website on May 28, 2022. The search included a review of the institution's paleontology specimen collection records for Butte County, including the Project Area and vicinity. In addition, a query of the UCMP catalog records; a review of regional geologic maps from the California Geological Survey (2016); a review of local soils data; and a review of existing literature on paleontological resources of Butte County by ECORP. The purpose of the assessment was to determine the sensitivity of the Project Area, whether or not known occurrences of paleontological resources are present within or immediately adjacent to the Project Area, and whether or not implementation of the project could result in significant impacts to paleontological resources. Paleontological resources include mineralized (fossilized) or unmineralized bones, teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

The results of the search of the UCMP indicated that 144 paleontological specimens were recorded from 26 identified localities and 75 unidentified localities in Butte County. Paleontological resources in Butte County include fossilized remains of plants, mammals, fish, mollusks, and microfossils. One specimen was found in the City of Gridley in May 1944 and identified as an early horse³ (UCMP 2022).

4.7.5 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

³ Family: Equidae, Genus: Equus, Subgenus: Dolichohippus, Species: simplicidens. The Hagerman horse (*Equus simplicidens*), also called the Hagerman zebra or the American zebra, was a North American species of equid from the Pliocene epoch and the Pleistocene epoch. It was one of the oldest horses of the genus *Equus* and was first discovered in 1928 in Hagerman, Idaho.

i) No Impact

The Proposed Project Site is not located within an Alquist-Priolo Earthquake Zone (CGS 2011, 2022). The site is not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the site. By CGS definition, an active fault is one with surface displacement within the last 11,000 years. A potentially active fault has demonstrated evidence of surface displacement with the past 1.6 million years. Faults that have not moved in the last 1.6 million years are typically considered inactive. **No impact** would occur.

ii) Less Than Significant Impact.

According to the CGS, the Project Site is not located within the immediate vicinity of an Alquist-Priolo Earthquake Fault Zone (CGS 2022). Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. The closest fault zones to the Project Area are the Foothill Fault System located approximately 12 miles east of the Project Area and the only potentially active fault zone being the Cleveland Hill fault zone located 9 miles northeast of the Project Site. However, the Proposed Project does not contain habitable structures and no such structures are proposed, and as such, no structures would be affected by seismic ground shaking that would result in a risk of loss, injury, or death. Therefore, **no significant adverse impacts** are identified or anticipated, and no mitigation measures are required.

iii) Less Than Significant Impact.

Liquefaction is a condition that occurs during an earthquake when some soils behave more like a liquid than a solid, often with catastrophic results for buildings built on these soils. It is characterized by the following:

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

Liquefaction potential has been found to be greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. CGS provides mapping for area susceptible to liquefaction in California. According to this mapping, the Project is not located in an area of liquefaction (CGS 2020). As such, the Proposed Project would result in **less than significant** impacts with regard to seismic-related ground failure, including liquefaction.

iv) No Impact

The Project Site and surrounding area is flat with no steep hillsides or other formations susceptible to landslides. As such, the Proposed Project would have **no impact** for the potential for landslides.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As indicated in the Table 4.7-1, the Project soils have a slight erosion potential. Construction activities during the Project would disturb soils and potentially expose them to wind and water erosion. Because the Project involves more than one acre in area, the Project will be required to prepare a stormwater pollution prevention plan (SWPPP) to comply with the RWQCB's General Construction Storm Water Permit. BMPs are included as part of the SWPPP and would be implemented to manage erosion and the loss of topsoil during construction-related activities (see *Section 4.10.1 Hydrology and Water Quality (IX.) Environmental Checklist and Discussion*). Implementation of the Project's erosion control measure and any additional required BMPs would reduce soil erosion impacts to a **less than significant** impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

As discussed previously, the Project Site has no potential for landslides.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other *free* face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion and unconsolidated material or, more commonly, by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope, resulting in gravitationally driven movement. Frost action is one indicator of potential lateral expansion. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (i.e., frost heave) and the subsequent collapse of the soil and loss of strength on thawing (NRCS 2022). As indicated in the Web Soil Survey, the Project Site has soils with no frost action potential. Additionally, as discussed in Item a) iii) above, the Project Site is not identified as being in an area with a potential for liquefaction. As such, the potential for impacts due to lateral spreading would be less than significant.

With the withdrawal of fluids, the pore spaces within the soils decrease, leading to a volumetric reduction. If that reduction is significant enough over an appropriately thick sequence of sediments, regional ground subsidence can occur. This typically only occurs within poorly lithified sediments and not within competent rock.⁴ No oil, gas, or high-volume water extraction wells are known to be present in the Project Area. According to the USGS, the Project Site is not located in an area of land subsidence (USGS 2022). As such, the potential for impacts due to subsidence would be less than significant.

Collapse occurs when water is introduced to poorly cemented soils, resulting in the dissolution of the soil cementation and the volumetric collapse of the soil. In most cases, the soils are cemented with weak clay (argillic) sediments or soluble precipitates. This phenomenon generally occurs in granular sediments situated within arid environments. Collapsible soils will settle without any additional applied pressure when sufficient water becomes available to the soil. Water weakens or destroys bonding material between particles that can severely reduce the bearing capacity of the original soil. The Project is the replacement of existing wastewater pipelines and a lift station. No large buildings or structures resulting in enormous weight and pressure on the soil surface are a part of the Proposed Project. As such, the Project Site soils would not become unstable as a result of the Project. The Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project does not include construction of habitable structures or permanent facilities; therefore, implementation would not expose people or structures to substantial risks due to expansive soils. **No impacts** are identified or anticipated, and no mitigation measures are required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

⁴ The processes by which loose sediment is hardened to rock are collectively called lithification.

The Proposed Project consists of shaft boring and microtunneling for the purpose of upgrading the current WWTP facility functions for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River and does not require the use of septic tanks or alternative wastewater disposal systems. During construction the Project Site would be serviced by portable toilets obtained from a private vendor. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact With Mitigation Incorporated.

A search of the UCMP collections database identified 144 paleontological resources in Butte County. None of these resources were identified as being within the Project Area. However, because the Project consists of shaft boring and microtunneling activities, the potential to discover subsurface paleontological resources could occur. Any such potential significant impacts would be reduced to a less than significant level by implementing Mitigation Measure **GEO-1** to ensure evaluation and appropriate handling, study, and curation of unanticipated subsurface paleontological discoveries.

4.7.6 Mitigation Measures

GEO-1: Paleontological Resources. If paleontological resources are encountered during Project activities and no paleontological monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist (as determined by the Project's qualified cultural resource professional) can be contacted to evaluate the find and make recommendations. If determined significant pursuant to CEQA and Project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan shall be implemented.

Adverse impacts to significant paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the curation of all fossil material to a paleontological repository, museum, or academic institution, as appropriate. Upon completion of Project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository.

Timing/Implementation: During construction

Monitoring/Enforcement: City of Gridley Public Works Department.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Greenhouse gas (GHG) emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH₄ traps over 25 times more heat per molecule than CO₂, and N₂O absorbs 298 times more heat per molecule than CO₂. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, 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. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere.

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.

In 2021, CARB released the 2021 edition of the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO₂e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 40 percent of total GHG emissions in the state. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019. Continuing the downward trend from 2018, transportation emissions decreased 3.5 million metric tons of CO₂e in 2019, only being outpaced by electricity, which reduced emissions by 4.3 million metric tons of CO₂e in 2019. Emissions from the electricity sector account for 14 percent of the inventory and have shown a substantial

decrease in 2019 due to increases in renewables. California's industrial sector accounts for the second largest source of the State's GHG emissions in 2019, accounting for 21 percent (CARB 2021b).

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.), 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 Senate Bill (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 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.

4.8.2.2 Local

Butte County Air Quality Management District

The BCAQMD is the air pollution control agency for Butte County, including the Project Site. The agency's primary responsibility is ensuring that the federal and state ambient air quality standards are attained and maintained in the Butte County portion of the NSVAB. The BCAQMD does not promulgate thresholds for GHG emissions.

County of Butte Climate Action Plan

The 2021 County of Butte Climate Action Plan (CAP, 2021) is Butte County's strategic plan to reduce GHG emissions in the unincorporated county. The 2021 CAP allows Butte County decision makers, staff, and the community to understand the sources and magnitude of local GHG emissions, reduce GHG emissions, and prioritize steps to achieve reduction targets. The 2021 CAP is an update of the 2014 CAP, providing updated information, an expanded set of GHG reduction strategies, and a planning horizon out to 2050. The 2021 CAP contains an inventory of the community's GHG emissions from the agriculture, transportation, energy, solid waste, off-road equipment, water and wastewater, and stationary source sectors. The 2021 CAP also includes informational GHG emissions from the land use and sequestration sector and the wildfire and controlled burn sector. The 2021 CAP also presents a work plan and monitoring program for the County to track progress over time, and allows community members, County staff and officials, and other stakeholders to understand the County's existing planning efforts and strategies to achieve its GHG reduction goals.

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

Less Than Significant Impact.

A potent source of GHG emissions associated with the Proposed Project would be combustion of fossil fuels during construction activities. The construction phase of the Proposed Project is temporary but would result in GHG emissions from the use of heavy construction equipment and construction-related vehicle trips. Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment. Table 4.8-1 illustrates the specific construction generated GHG emissions that would result from construction of the Project.

Table 4.8-1. Construction-Related Greenhouse Gas Emissions

Emission Source	CO₂e (Metric Tons/Year)
Construction Year One	377

Source: CalEEMod version 2020.4.0. Refer to Attachment 4.3 for Model Data Outputs.

The BCAQMD does not promulgate thresholds for GHG emissions. However, to provide some context for the amount of GHG emissions produced by the Project, the California Air Pollution Control Officers Association (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 GHG to be significant.

As shown in Table 4.8-1, Project construction would result in the generation of approximately 377 metric tons of CO₂e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. Therefore, this impact is **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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As previously described, the County of Butte CAP is a strategic planning document that identifies sources of GHG emissions within the boundaries of the unincorporated county, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic emission-reduction strategies to reduce emissions from the agriculture, transportation, energy, solid waste, off-road equipment, water and wastewater, and stationary source sectors. As the City of Gridley does not promulgate numeric thresholds for GHG emissions, the Butte County CAP is the regulatory planning document that suffices for impacts associated with GHG emissions for areas within the Project Site considered to be within the limits of the City of Gridley. The GHG-reduction strategies in the CAP build on inventory results and key opportunities prioritized by County staff and members of the public. According to the CAP, if a proposed development within unincorporated Butte County is consistent with the emission-reduction strategies included in the 2021 CAP, the Project would have a **less than significant** impact on climate change and emissions (County of Butte 2021).

All development in the unincorporated County, including the Project and areas within the Project Site considered to be within the limits of the City of Gridley, are required to adhere to all County-adopted policy provisions, including those contained in the adopted CAP. The County ensures all applicable provisions of the CAP are incorporated into projects and their permits through development review and applications of conditions of approval as applicable. Nonetheless, a review of the emission-reduction

strategies included in the 2021 CAP show that none are directly applicable to a project with no operational component, such as the Proposed Project. The Project proposes the replacement of the wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River just north of the existing pipe and would therefore not include new permanent sources of GHG emissions and would not generate new or unplanned permanent GHG emissions. Once construction is complete, the generation of all Project GHG emissions would cease. Therefore, the Proposed Project would not conflict with the County CAP.

4.8.4 Mitigation Measures

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

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

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

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

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

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

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

Most hazardous materials regulation and enforcement in Butte County, including those in Gridley, is managed by the Butte County Environmental Health Division. The Division is responsible for responding to incidents involving any release or threatened release of hazardous materials. Threats to people, property and the environment are assessed, and then remedial action procedures are conducted under the supervision of a Registered Environmental Health Specialist. The Division is also responsible for the requiring all business that use hazardous materials to comply with the State required hazardous materials business plan submittal and registration with the California Environmental Reporting System.

Under Government Code § 65962.5, both the California Department of Toxic Substance Control (DTSC) and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC (2022) and SWRCB (2022) lists identified no open cases of hazardous waste violations within the Project vicinity.

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

The Project includes the installation of new wastewater pipelines under the Feather River. None of these uses require the routine transport, use, or disposal of hazardous materials. The Proposed Project is anticipated to require the use of some hazardous materials such as diesel fuel and oil for construction vehicles/equipment used during construction. However, these materials would be stored in gas tanks and other containers designed for this use. As such, this use would have a **less than significant** impact.

Once construction is completed, the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials as none will be required to operate the Project. Therefore, the Project would have a **less than significant** impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As discussed in a), the Project would not result in the routine transport, use, disposal, handling, or emission of any hazardous materials that would create a significant hazard to the public or the environment. Potential construction-related hazards could be created during the course of Project construction at the Project Site, given that construction activities involve the use of heavy equipment, which uses small and incidental amounts of oils and fuels and other potentially flammable substances. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials used during construction. The

construction contractor would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law.

Because no hazardous materials would be used for operation of the Project, short-term construction and long-term operation impacts associated with handling, storing, and disposing of hazardous materials from project operation 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

No schools exist within 0.25 mile of the Project Site and no hazardous materials, substances, or waste will be generated during the course of Project operations or left behind at the conclusion of operations. **No impact** would occur.

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

No Impact

The Project Site is not located on any list of hazardous materials sites and will not increase the risk of exposure to hazardous materials. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The nearest public airport to the Project site is the Oroville Municipal Airport, located approximately 8.5 miles northeast of the site. According to the Draft Update Butte County Airport Land Use Compatibility Plan, the Proposed Project is located outside of all compatibility and influence zones (Butte County 2017). As such, the Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

As discussed previously, approximately 2,150 cubic yards of material will need to be off-hauled from the shaft excavation and it is proposed that the material will be taken to the City of Gridley's emergency overflow ponds. It is approximately 0.75 traveled miles from the jacking shaft to the overflow ponds and approximately 4.25 traveled miles from the reception shaft to the overflow ponds. It is assumed that the travel path from the jacking shaft to the overflow ponds will be via the levee road, and the path from the reception shaft to the overflow ponds will be via East Gridley Road, Larkin Road, and Richards Avenue.

Activities associated with the Proposed Project would not impede existing emergency response plans for the Project Site and/or other land uses in the Project vicinity. All vehicles and stationary equipment would be staged off public roads and would not block emergency access routes. Implementation of operational activities would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

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

The Project Site and surrounding area lies in an area of low wildfire risk, according to the Butte County Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan (Butte County 2013). The Project is the replacement of underground wastewater pipelines. Implementation of the Proposed Project would have **no impact** with regard to wildland fires.

4.9.3 Mitigation Measures

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

4.10 Hydrology and Water Quality**4.10.1 Environmental Setting****4.10.1.1 Regional Hydrology****Surface Water**

The Project Site is located in the greater Sacramento River hydrologic region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Siskiyou, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border to the Sacramento-San Joaquin Delta (DWR 2003).

The Project Site is located within boundaries of the Lower Feather River Watershed, which is part of the Sacramento River Watershed. The Lower Feather River Watershed begins from the waters behind the Oroville Dam, the tallest dam in the United States. There are approximately 190 miles of major creeks and rivers, 695 miles of minor streams, and 1,266 miles of agricultural water delivery canals in the Lower

Feather River Watershed. Hydrology also is influenced by operation of the Sutter Bypass, which brings Sacramento River water through Butte Slough and into the Lower Feather River. This system is designed, in part, to relieve flood flows in the Sacramento River. The USGS gaging station at Oroville shows daily flows in the Lower Feather River (post–Oroville Dam) are held at about 300 cubic feet per second (cfs). Periodic high flow releases from Lake Oroville are in the 50,000- to 100,000-cfs range with an all-time high of 150,000 cfs in 1986 (Sacramento River Watershed Program 2010).

Groundwater

Groundwater in the State of California is managed and monitored by the Department of Water Resources (DWR). The Project Site is within the Butte Subbasin, (basin number 5-021.70) of the Sacramento Valley Hydrologic Region (DWR 2019). The original basin descriptions were provided in the 2003 Bulletin 118 (B118) Update completed by the California DWR. The 2003 basin descriptions included available information on narrative descriptions of basin boundaries, summaries of the hydrologic and hydrogeologic setting, groundwater storage capacity and water budget, groundwater level and quality trends, well yields, basin management, and references. However, not all 2003 basin descriptions, including the Butte Subbasin, have been updated for B118 Interim Update 2018 at the time this document was prepared.

The Project Site is located in the 2003 B118 East Butte Subbasin (DWR 2003). As such, the following information is provided from the 2003 B118 for the East Butte Subbasin. The East Butte Subbasin is the portion of the Sacramento Valley Groundwater Basin bounded on the west and northwest by Butte Creek, on the northeast by the Cascade Ranges, on the southeast by the Feather River and the south by the Sutter Buttes. The northeast boundary along the Cascade Ranges is primarily a geographic boundary with some groundwater recharge occurring beyond that boundary. The subbasin is contiguous with the West Butte Subbasin at depth. Annual precipitation is approximately 18 inches in the valley increasing to 27 inches toward the eastern foothills. The estimated storage capacity to a depth of 200 feet is approximately 3,128,959 acre-feet (AF). Estimates of groundwater extraction for agricultural; municipal and industrial; and environmental wetland uses are 104,000, 75,500 and 1,300 AF, respectively. Deep percolation of applied water is estimated to be 126,000 AF (DWR 2003).

4.10.1.2 Site Hydrology and Onsite Drainage

The Project Site is located on relatively flat terrain, sloped embankments of the Feather River, and within the river itself. The Project Site is situated at an elevational range of approximately 67 - 99 feet above mean sea level (MSL). Project hydrological features includes the Feather River and the City of Gridley wastewater treatment ponds. No other aquatic features are mapped as intersecting the Project alignment.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Project Area (Map No. 06007C1125E) shows that the Project Site is in shaded Zone A, meaning that the area is in the 100-year flood zone 1 percent annual chance floodplain [FEMA 2011].

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations, the State of California requires that any construction activity affecting 1 acre or more obtain a General Construction Activity Stormwater Permit (General Permit) to minimize the potential effects of construction runoff on receiving water quality. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ.

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

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

Implementation of BMPs required as part of the SWPPP would ensure that the Proposed Project would not create or contribute to any violations of water quality standards or waste discharge requirements. There would be a **less than significant** impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

No extraction of ground water is proposed. The Project involves the shaft boring and microtunneling for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. This installation would not reduce the amount of existing groundwater recharge potential or supplies. The Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

i) Less Than Significant Impact.

As noted, the Proposed Project would restore areas affected by pipeline construction pre-project conditions relative to topography and groundcover, to the extent practicable. While the Proposed Project would not alter the drainage pattern of a stream or river as there are none within the vicinity of the Project, the Project would cross under an existing river. However, this crossing would be completed using shaft boring and microtunneling technologies in order to drill under the river and would not alter the canal nor any drainage patterns to or from the river.

Further, the Project construction activities would result in soil disturbances of at least 1 acre of total land area. As such, an NPDES Construction General Permit would be required prior to the start of construction. Excavation and grading activities associated with the Proposed Project will reduce vegetative cover and expose bare soil surfaces making these surfaces more susceptible to erosion. To comply with the requirements of the NPDES Construction General Permit will be required to file an NOI with the State of California and submit a SWPPP defining BMPs for construction and post-construction-related control of the Proposed Project site runoff and sediment transport. Requirements for the SWPPP include incorporation of both erosion and sediment control BMPs. SWPPP generally include the following applicable elements:

- diversion of offsite runoff away from the construction area;
- prompt revegetation of proposed landscaped areas;
- perimeter straw wattles or silt fences and/or temporary basins to trap sediment before it leaves the site;
- regular sprinkling of exposed soils to control dust during construction during the dry season;
- installation of a minor retention basin(s) to alleviate discharge of increased flows;
- specifications for construction waste handling and disposal;
- erosion control measures maintained throughout the construction period;
- preparation of stabilized construction entrances to avoid trucks from imprinting debris on city roadways;
- contained wash out and vehicle maintenance areas;
- training of subcontractors on general construction area housekeeping;
- construction scheduling to minimize soil disturbance during the wet weather season; and
- regular maintenance and storm event monitoring.

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

ii) Less Than Significant Impact

Implementation of the Proposed Project would not result in the increase of the rate or amount of surface runoff in a manner that would result in flooding on- or offsite. As noted above, the Proposed Project would restore areas affected by pipeline construction to pre-Project conditions relative to topography and groundcover and would not change the drainage pattern of the area. Therefore, any impact of the Project

on existing drainage would be less than significant relative to existing conditions. Therefore, the Proposed Project would have a **less than significant** impact on causing flooding on- or offsite.

iii) No impact

The Project would not contribute to additional runoff because it would not result in an increase in impervious surfaces; it would not affect stormwater drainage systems (none are present) or create additional sources of polluted runoff. Therefore, **no impacts** would occur.

iv) Less Than Significant Impact

The FEMA flood hazard map (Map 06007C1125E) shows that the Project Site is in shaded Zone A. The Project Site is located within a 100-year flood zone and all Project activities, with the exception of the restoration of the Project Site upon completion of the shaft boring and microtunneling activities, would be conducted underground and would be temporary in nature. As discussed in *Section 2.0 Project Description*, there is no work being conducted on or to the levee on the west side of the Feather River. Therefore, implementation of the Proposed Project will have **no impact** related to impeding or redirecting flood flows.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As discussed in Item c) above, the Proposed Project will not have an impact related to flooding.

The Project Site is not protected by levees from any flood hazard; however, there is a levee on the west side of the Proposed Project Site and is used as an access point for Project implementation. This levee was constructed to protect lands west of the levee and as described in *Section 2.0 Project Description*, no work is proposed to the levee itself. The Feather River is within and adjacent to the Project Site as the main purpose of the Project is to tunnel beneath the Feather River in order to install new WWTP pipelines. No large lakes exist near the Proposed Project Site. The Project Site is not located within a potential tsunami or seiche inundation area. Damage due to a seiche, a seismic-induced wave generated in a restricted body of water would not occur.

According to the Butte County 2030 General Plan, the Project Area is located in the Lake Oroville inundation area. Dams are regulated by the Division of Safety of Dams of the DWR and are routinely inspected during their impoundment life, which includes monitoring for compliance with seismic stability standards. Thus, dam failure is not considered a reasonably foreseeable event. Additionally, the Proposed Project's pipeline would be underground and would not affect dam operations nor be impacted as a result of a dam failure. As such, the Proposed Project would have **no impact** from dam or levee failure.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Project site is located within the Butte County Groundwater Management Plan (County of Butte 2004). The Project is the replacement of underground sewer facilities and would not result in the use of groundwater. Therefore, the Project would have no effect to water quality control plans or sustainable groundwater management plan pertaining to the area. The Project would have **no impact**.

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 Project Site is located in two jurisdictions, the City of Gridley and Butte County. The Project is located on eight parcels, although the Project Site is only on a portion of each parcel. The portion of the Project Site located within the limits of the City of Gridley are the WWTP and WWTP emergency ponds. For those areas within the County's jurisdiction the 2030 General Plan Land Use Map designation is AG. For those portions of the Project Site within the City of Gridley, the General Plan Land Use Map (2010) designates the Project Site as PUB. The Project Site within Butte County is zoned Agriculture - 40 (40-ac minimum) and areas in the City of Gridley are zoned P-Q-P.

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The physical division of an established community is typically associated with construction of a linear feature, such as a major highway or railroad tracks, or removal of a means of access, such as a local road or bridge, which would impair mobility in an existing community or between a community and an outlying area. The Proposed Project would take place on an instream gravel bar, a riverbank, and an access road located in rural, unincorporated Butte County, California; with a portion located within the limits of the City of Gridley (i.e., WWTP and staging area in the southwestern corner). The Project would consist of shaft boring and microtunneling activities associated with the replacement of a wastewater

pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River installation of an underground pipeline. No road closures are proposed as a part of this Project. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The County Code of Ordinances governs zoning and land uses within the County. As discussed above, for those portions of the Project Site within Butte County are zoned as Agriculture by the County. The portions that are within the City of Gridley are zoned P-Q-P. No changes or amendments to land use, land use categories, or zoning are proposed. The Proposed Project will not 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** would occur, and no mitigation measures are 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

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

Neither the Gridley General Plan, the County's 2030 General Plan, nor the California Department of Conservation Division of Mine Reclamation (DMR), identifies the Project Site as within a mineral resource zone (Butte County 2012b; City of Gridley 2010; DMR 2022).

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

As discussed above, the City, County, and DMR do not identify the Project Site as having the mineral resources. Therefore, the Project would have **no impact** in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

The Project Site is not identified as a mineral resource recovery site by the City, County, or DMR. There would be **no impact** in this area.

4.12.3 Mitigation Measures

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

4.13 Noise

ECORP Consulting, Inc. conducted a Noise and Vibration Assessment Memorandum (NVAM) for the Proposed Project (Attachment 4.13). The purpose of the assessment was to estimate Project-generated noise levels and determine the level of impact the Project would have on the environment. The following information was excerpted from the NVAM, which is included as Attachment 4.13 of this Initial Study and provides information for the following sections.

4.13.1 Environmental Setting**4.13.1.1 Noise Fundamentals****Addition of Decibels**

The decibel (dB) scale is logarithmic, not linear; 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 3 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 3 dB). Under the dB scale, three sources of equal loudness together would produce an increase of 5 dB.

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.

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

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 L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL (Community Noise Equivalent Level) are measures of community noise. Each is applicable to this analysis and defined as follows:

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

4.13.1.2 Human Response to Noise

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

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA), or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA noise levels, 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 would be expected.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

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 parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest sensitive receptors to the Project Site are residences located on Booth Drive approximately 3,900 feet (0.74 mile) distant.

4.13.1.4 Vibration Fundamentals

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

4.13.1.5 Existing Noise Environment

The existing ambient noise levels experienced in the Project Area are typical of a quiet, rural residential area. Rural residential noise levels generally range around 40 - 50 dBA CNEL.

4.13.2 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The nearest sensitive receptors to the Project Site are residences located on Booth Drive approximately 3,900 feet (0.74 mile) distant from the area of construction.

4.13.2.1 Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the 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, grading and building construction, paving and architectural coating). Noise generated by construction equipment, including excavators, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

Butte County General Plan

The County does not promulgate numeric thresholds pertaining to the noise associated with construction but instead limits the time that construction can take place. Specifically, Section 41A-9, Exemptions, of this chapter exempts construction noise from numeric noise thresholds, provided construction activities do not take place between the following hours:

- Sunset to sunrise on weekdays and non-holidays;

- Friday commencing at 6:00 p.m. through and including 8:00 a.m. on Saturday, as well as not before 8:00 a.m. on holidays;
- Saturday commencing at 6:00 p.m. through and including 10:00 a.m. on Sunday; and,
- Sunday after the hour of 6:00 p.m.

It is typical to regulate construction noise in this manner since construction noise is temporary, short-term, intermittent in nature, and would cease on completion of the Project.

City of Gridley General Plan Noise Element

The Noise Element of the General Plan provides policy direction for minimizing noise impacts on the community and for coordinating with surround jurisdictions and other entities regarding noise control. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noises, noise considerations will influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems. The Noise Element also contains policies that must be used to guide decisions concerning land uses that are common sources of excessive noise levels.

City of Gridley Municipal Code

The City does not identify numeric thresholds pertaining to the noise associated with construction but instead limits the time that construction can take place. Specifically, Chapter 9.40, Noise Regulation, of the City's Municipal Code prohibits any person from operating any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7:00 p.m. and 6:00 a.m. on weekdays and Saturdays, and anytime on Sundays. It is typical to regulate construction noise in this manner since construction noise is temporary, short-term, intermittent in nature, and would cease on completion of the Project.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptor in the Project vicinity in order to evaluate the potential health-related effects (i.e., physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by National Institute for Occupational Safety and Health (NIOSH). A division of the US 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 were calculated using the Roadway Noise Construction Model. The nearest sensitive receptors to the Project's

construction area are residences located on Booth Drive approximately 3,900 feet (0.74 mile) distant. The anticipated short-term construction noise levels experienced at these receptors as a result of Project construction/implementation noise is presented in Table 4.13-1.

Table 4.13-1. Construction Average (dBA) Noise Levels at Nearest Receptor- Project Site			
Equipment	Estimated Exterior Construction Noise Level at Nearest Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Microtunneling			
Boring Jack (2)	42.1 dBA (each)	85	No
Generator (1)	39.8 dBA	85	No
Rough Terrain Forklift (1)	41.6 dBA	85	No
Other Equipment (2)	44.1 dBA (each)	85	No
Graders (1)	43.2 dBA	85	No
Tractors/Loaders/Backhoes (1)	35.7 dBA	85	No
Combined Site Preparation Equipment	51.2 dBA	85	No

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

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time.

As shown in Table 4.13-1, during construction activities no individual piece of construction equipment would exceed the NIOSH threshold of 85 dBA L_{eq} at the nearest residences to the Project Site.

4.13.2.2 Operational Noise

The Project proposes the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. The Proposed Project will not include the provision of new permanent stationary or mobile sources. Thus, it would not be a source of operational mobile or stationary noise sources.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.**4.13.2.3 Construction-Generated Vibration**

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term construction-related activities. Construction 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 implementation. 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 4.13-2.

Table 4.13-2. Typical Construction Equipment Vibration Levels	
Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)
Vibratory Roller	0.21
Hoe Ram (Rock Breaker)	0.089
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer/Tractor	0.003

Source: FTA 2018

Neither the City of Gridley, nor the County of Butte regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans-recommended (2020) standard of 0.2 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 nearest structures of concern to the Project Site include the City's WWTP sewage ponds approximately 1,600 feet to the north.

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

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

Table 4.13-3 presents the expected Project related vibration levels at a distance of 1,600 feet.

Table 4.13-3. Project Construction Vibration Levels at 1,600 Feet									
Receiver PPV Levels (inches/second)¹							Peak Vibration	Threshold	Exceed Threshold?
Vibratory Roller	Large Bull- dozer	Drilling	Loaded Trucks	Rock Breaker	Jack hammer	Small Bulldozer			
0.0004	0.0001	0.0001	0.0001	0.0001	0.0000	0.000	0.004	0.02	No

¹Based on the Vibration Source Levels of Construction Equipment included on Table 4.13-2 (FTA 2018).

As shown, groundborne vibrations attenuate rapidly from the source due to geometric spreading and material damping. Geometric spreading occurs because the energy is radiated from the source and spreads over an increasingly large distance while material damping is a property of the friction loss, which occurs during the passage of a vibration wave. Vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold. This impact would be **less than significant**.

4.13.2.4 Operational Vibration Impacts

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact.

No airport is located in the Gridley vicinity. The Project Site is located outside of any airport land use plan. Furthermore, the Project Site is located beyond 2 miles from any airport. The Proposed Project will not expose people residing or working in the Project Area to excess airport noise levels. **No impact** would occur.

4.13.3 Mitigation Measures

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

4.14 Population and Housing**4.14.1 Environmental Setting**

According to the California Department of Finance (DOF), which provides estimated population and housing unit demographics by year throughout the state, the County's population decreased 8.72 percent between 2011 and 2022, from 220,826 to 201,608. However, this is partly a result of the November 2018 Camp Fire disaster, the County's overall population decreased significantly from just over 226,098 in 2018 to 201,608 in 2022 (DOF 2022; 2021). DOF estimates that there were 91,549 total housing units in the County, and an 8.1 percent vacancy rate as of January 1, 2022 (DOF 2022).

Furthermore, according to the California DOF, the City of Gridley population increased 9.2 percent between 2011 and 2021, from 6,595 to 7,205. This is most likely as result of the Camp Fire disaster, the City's overall population increased significantly from just over 6,918 in 2018 to 7,205 in 2022 (DOF 2021, 2022). DOF estimates that there were 2,606 total housing units in the City, and a 2.87 percent vacancy rate as of January 1, 2022 (DOF 2022).

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

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

No Impact

The Project does not include the construction of housing units nor changes to public road or utility systems that would induce any population growth. **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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

There is no housing on or population inhabiting the Project Site and no proposed housing construction as part of the Project. **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**

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of service are generally based on a service-to-population ratio, except for fire protection, which is usually based on a response time.

4.15.1.1 Police Services

The Butte County Sheriff's Office provides law enforcement services in the County. This includes 24-hour/7 days per week law enforcement and response, as well as 911/public safety dispatch services, records management, evidence/property management, and criminal investigation services. The Butte County Sheriff's Office (BCSO) utilizes a combination of BCSO personnel to provide law enforcement services to

unincorporated County areas, which include Designated Area Deputies), patrol deputies, and a newly created position of Sheriff Community Service Officer.

The Gridley Police Department is responsible for the protection of life and property, the maintenance of order, the control and prevention of crime, and the enforcement of motor vehicle laws and regulations. Primary activities related to these responsibilities include enforcement of City and State laws; investigation of crimes; apprehension of criminals, and maintenance of a crime prevention program. Officers respond to and investigate emergency in-progress calls, provide necessary assistance to other law enforcement agencies during emergency and critical situations (City of Gridley 2022).

4.15.1.2 Fire Services

Butte County and their partner communities (i.e., City of Gridley, City of Biggs, and the Town of Paradise) benefit from an integrated, cooperative regional fire protection system provided by the California Department of Forestry and Fire Protection (CAL FIRE) through its cooperative fire protection agreements. This model of fire protection creates a robust and cost-effective response system. The parent organization, CAL FIRE, has brought organizational elements and leadership where the cooperative fire protection system is administered and operated efficiently as one fire department. CAL FIRE and its cooperative fire protection agreements operate 22 full time career staffed fire stations and 16 volunteer fire stations encompassing 1,609 square miles. CAL FIRE firefighters provide full-service fire protection, pre-hospital basic life support, and specialized rescue responses to the citizens of Butte County. As of 2020, the County has up to 352 summer and 220 winter uniformed personnel, 98 on-duty daily staffing, 19 department chiefs, 16 civilian personnel, and 161 volunteers Countywide (Butte County 2020).

4.15.1.3 Schools

Thirteen school districts, 13 charter schools, and one community college serve Butte County. Each school district comprises various numbers of traditional public schools, charter schools, preschools, adult education, and special training opportunities. The Project Site is within the boundaries of the Gridley Unified School District (GUSD, Butte County 2012a). The GUSD is located in the small, rural community of Gridley, west of the Project Site. The district serves approximately 2,000 students in five schools; McKinley Primary School (K-1), Woodrow Wilson School (2-5), Sycamore Middle School (6-8), Gridley High School (9-12) and Esperanza (Alternative Education).

The demographics of the area include a high percentage of students living in low socioeconomic households (65 percent) and approximately 17 percent English Language Learners. The closest schools to the Project Site are approximately 3 miles west in the City of Gridley.

4.15.1.4 Parks

A wide range of recreational facilities and recreational programs are found in Butte County, offering numerous recreational opportunities to local residents and visitors. Butte County is home to thousands of acres of state, county, and federal parkland including Lassen National Park, Plumas National Park,

California Department of Fish and Game Lands, California Department of Parks and Recreation Lands, and dozens of Public Parks throughout the County.

The five municipalities and five large special independent districts maintain many of the parks and recreational facilities in Butte County. Butte County does not provide a park and recreation program. The five recreation and park districts, which encompass most of the County's land area, operate as *independent* districts, meaning that each district is governed by a board of directors elected by the voters in that district. The Recreation and Park Districts (RPD) in Butte County are also non-enterprise districts, meaning that they depend mainly on property taxes for operating revenue, rather than user fees and consist of the Chico Area, the Durham, the Feather River, the Paradise, and the Richvale RPDs. There are 618 acres of parkland in unincorporated Butte County, serving a population of roughly 83,900 people (Butte County 2012a).

The City of Gridley parks are located to connect with Open Space corridors in order to accommodate for bicycle and pedestrian travel to and from parkland and to regulate stormwater detention following large storm events. The City owns and maintains parks near Downtown, including: Vierra Community Park (12.5 acres); Daddow Plaza, Rotary Park, and Quota Park (totaling 4.4 acres); and the skateboard/water park (1.01 acres). Parks are also provided in residential areas, including August Boeger Park (1.9 acres) and Eagle Meadows Park (6.01 acres of private parkland). There was a total of 19.8 acres of City-owned parkland, or 3.1 acres per thousand residents, as of the writing of the 2030 General Plan. This total does not include Eagle Meadows Park (private) or the City-owned boat launch area on the Feather River.

4.15.1.5 Other Public Facilities

No notable public facilities exist within the vicinity of the Project with the exception of the City of Gridley boat launch facility located adjacent to the WWTP.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other Public Facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

i) Fire Protection. No impact

The Project Site is located within a Local Responsibility Area. As discussed previously, CAL FIRE is responsible for providing fire protections in unincorporated Butte County. The Proposed Project consists of a temporary shaft boring and microtunneling activities for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. Implementation of the Project would not require additional fire facilities or services. **No impacts** would occur.

ii) Police Protection. No Impact

The County Sheriff's Department is headquartered in the City of Oroville and is comprised of multiple divisions, providing law enforcement services to unincorporated communities in Butte County. The County Sheriff's Department operates two substations, one in Chico and one in Magalia. Additionally, the City of Gridley Police Department is located at 685 Kentucky Street within the City and approximately 3.33 miles west of the Project Site. Implementation of the Proposed Project would not require additional police facilities or services. **No impacts** are identified or anticipated, and no mitigation measures are required.

iii) Schools. No Impact

The Proposed Project would not create a direct demand for public school services as it does not include any type of residential use or other land use, or an increase in employment that may induce population growth. As such, the Project would not generate any new school-aged children requiring public education. **No impacts** are identified or anticipated, and no mitigation measures are required.

iv) Parks and v) Other Public Facilities. No Impact

The Proposed Project consists of shaft boring and microtunneling activities for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River. No additional housing is proposed for construction as part of the Proposed Project. No parks, libraries, or other public facilities would be required to be constructed, nor are any proposed as part of this Proposed Project. There would be **no impact** pertaining to parks or other public services.

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 Project Site is located on the Feather River roughly 3 miles east of the City of Gridley. As previously mentioned, there are 618 acres of parkland in unincorporated Butte County, serving a population of about 83,900 people. Countywide, this amount of parkland seems adequate to serve the needs of the residents of unincorporated Butte County, as it provides a service ratio of over 7 acres of parkland for every 1,000 residents (Butte County 2012a). Additionally, City of Gridley parks are also provided in residential areas, including August Boeger Park (1.9 acres) and Eagle Meadows Park (6.01 acres of private parkland). There was a total of 19.8 acres of City-owned parkland, or 3.1 acres per thousand residents, as of the writing of the 2030 General Plan. These parks offer an array of recreation opportunities including recreational sports, fishing, camping, picnicking, boating, hiking, horseback riding, wildlife viewing, hang-gliding, off-road vehicle riding, winter snow play, hunting, wilderness experiences, and mountain biking. The closest park to the Project Site is the Oroville Wildlife Area located approximately 2.8 miles northeast.

4.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project consists of shaft boring and microtunneling activities for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River and does not include recreational components. The Proposed Project's operation would not increase the use of neighborhood parks or other recreational facilities. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project consists of shaft boring and microtunneling activities for the replacement of a 20-foot force main currently sitting on the bottom of the Feather River with a new pipeline installed

underneath the Feather River and does not include recreational components. The Proposed Project does not include the construction or expansion of recreational facilities nor the removal of recreational facilities. **No impacts** are identified or anticipated, and no mitigation measures are required.

4.16.3 Mitigation Measures

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

4.17 Transportation

4.17.1 Environmental Setting

The Project Site would be accessed by an existing dirt road (levee) that connects via an existing encroachment to East Gridley Road located north of the Project Site. Additionally, the Project Site will be accessed by means of entering the area via the WWTP on the east side of the Feather River. The access roads will remain post-reclamation to facilitate access to the river. No new temporary access routes are anticipated to be needed for the Project.

During Project operation, an estimated 269 haul trucks would transport approximately 2,150 cy of material to be off hauled from the shaft excavation and it is proposed that the material will be taken to the City's emergency overflow ponds. It is approximately 0.75 traveled miles from the jacking shaft to the overflow ponds. It is also approximately 4.25 traveled miles from the reception shaft to the overflow ponds. It is assumed that the travel path from the jacking shaft to the overflow ponds will be via the levee road, and the path from the reception shaft to the overflow ponds will be via East Gridley Road, Larkin Road and Richards Avenue. The leftover excavated material will be used to build up the existing emergency pond berms.

The existing levee is only being used for the proposed access point to the jacking shaft. There is no proposed construction to happen on or within the levee.

4.17.2 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Project Site is located in a remote area of Butte County; with a portion of the Project Site located within the limits of the City of Gridley. As described above, during Project operation, an estimated 30 haul trucks would transport material via the access driveway on the eastern side of the Feather River (levee) and material from the reception shaft will be via Larkin Road and Richards Avenue, to be taken to the

City's emergency overflow ponds. These truck trips would be limited to the duration of the Project itself (approximately 180 days). There are no planned bicycle and pedestrian facilities for the area of the Project Site.

Minimal truck traffic produced as a result of the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

CEQA Guidelines Section 15064.3, subdivision (b) provides criteria for analyzing land use and transportation impacts based on a vehicle mile traveled (VMT) methodology instead of the level of service methodology. Pertinent to the Proposed Project are those criteria identified in Section 15064.3(b)(1) Land Use Projects. According to this section:

"Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor⁵ should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."

In the Proposed Project's case, this is neither a new land use project nor a new transportation project. It is the replacement of an existing wastewater pipeline prompted to reduce the potential for water contamination to the Feather River from the old pipeline. No new housing, commercial, or industrial uses will result with the completion of this Project. All vehicle trips related to the Project would cease upon completion of the Project. Therefore, Section 15064.3 for the CEQA Guidelines does not apply to this Project. There would be no impact.

⁵ *High-quality transit corridor* means an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. For the purposes of this Appendix, an *existing stop along a high-quality transit corridor* may include a planned and funded stop that is included in an adopted regional transportation improvement program.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Project does not propose, nor would it require new roadways or changes in existing roadways that would result in an increase hazard due to a design feature. **No impact** would occur.

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

No Impact

No road closures are anticipated as a part of the Proposed Project. The Project will not interfere with emergency access routes. **No impact** would occur.

4.17.3 Mitigation Measures

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

4.18 Tribal Cultural Resources

The following information was provided by ECORP Consulting, Inc. (2022b) as a part of the *Cultural Resources Inventory and Evaluation Report* for the Proposed Project. The information provided below is an abridged version of this report and is provided here to afford a brief context of the Tribal Cultural Resources in the Project Area.

4.18.1 Environmental Setting**4.18.1.1 Ethnography**

Prior to the arrival of European Americans in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Driver 1961; Murdock 1960), recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one third of the state's native population, lived in the Central Valley (Moratto 1984:171). At

least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007). The Central area (as defined by Kroeber 1925) encompasses the Project Area and includes the Konkow and Maidu.

When European-Americans first arrived in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Driver 1961, Murdock 1960), recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California cultural area into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one third of the state's native population, lived in the Central Valley (Moratto 1984:171). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007). The Central area (as defined by Kroeber 1925) encompasses the Project Area and includes the Maidu and Konkow.

The Project Area falls within the ethnographic tribal territory of the Konkow, located in the lower foothills of the western slopes of the Sierra Nevada range and in the periphery of the Northern Sacramento Valley. The Maidu, on the basis of cultural and linguistic differences, have been differentiated into three major related divisions (Dixon 1905; Kroeber 1925; Powers 1877): the Northeastern (Mountain Maidu), Northwestern (Konkow), and Southern (Nisenan). Because many believe the Mountain Maidu and Konkow to be so closely related, ethnographers tended to group them as one.

The Konkow occupied territory located immediately adjacent and to the southwest of the Mountain Maidu, along the Feather and Sacramento rivers, to their southern boundary at the Sutter Buttes. The Konkow were primarily located in the lower elevations of the Sierra Nevada and along the valley floor (Riddell 1978). Tribal territories adjacent to the Maidu and Konkow included the Atsugewi and Yana to the north, the Nomlaki and Patwin to the west, the Paiute and Washoe to the east, and the Nisenan to the south (Heizer 1978).

The Maidu and Konkow languages and associated dialects are members of the Maiduan language family of the California Penutian Linguistic Stock. Unlike the Maidu whose dialects were unique to each of the four major regions of occupation, the Konkow spoke a large number of dialects, with each settlement area supporting more than one dialect (Shipley 1978). The Konkow called themselves *ko'yo-mkawi*, or "meadowland" (Riddell 1978).

Settlement patterns of the Maidu and Konkow were seasonal in nature. The Konkow inhabited a savanna-like habitat on the valley floor and in the lower elevations of the Sierra Nevada foothills. Resources exploited in this environment include wild rye, pine nuts, acorns, fish, and invertebrates (Kroeber 1925, Riddell 1978). Summer hunting trips into the mountains provided deer meat, skins, and other items for food, clothing, and shelter for the winter months.

The village community was the primary settlement type among the Maidu and consisted of three to five small villages, each composed of about 35 members. Among the mountain Maidu, village communities were well defined and based on geography. In contrast, the Konkow were dispersed throughout the valley floor along river canyons, and as a result, village communities were less concentrated or definable (Kroeber 1925). In terms of permanent occupation sites, both groups preferred slightly elevated locations that provided visibility of the surrounding area and were away from the water-laden marshes and meadows (Dixon 1905; Riddell 1978; Riddell and Pritchard 1971). The Mechoopda Village, formerly located near downtown Chico, was home to many Maidu well into historical times.

Among the villages, the male occupant of the largest *kum*, or semi-subterranean earth-covered lodge, governed the community (Dixon 1905; Kroeber 1925; Riddell 1978). Two other types of ethnographically documented structures in use included the winter-occupied conical bark structure and the summer shade shelter (Riddell 1978).

Clothing, accessories, and other personal items were manufactured using elaborate basket-weaving techniques, shell and bone ornamenting, and by incorporating feathers, game skins, plant roots, and stems into objects (Riddell 1978). Shell, in the form of beads for currency or as valuable jewelry, was very desirable and was exchanged for food, obsidian, tobacco, and pigments (Kroeber 1925; Riddell 1978).

Contact between the Maidu and Western culture was initiated as early as 1808 by Spanish explorers and fur trappers. The effects of the introduction of new diseases notwithstanding, native cultures remained essentially unchanged until after the discovery of gold at Coloma in 1848 (Riddell 1978). An outbreak of malaria in 1833, the 1848 Gold Rush, and subsequent massacre of Native Americans resulted in an upset of the ecological and social balance of local Native societies. As a direct result, aboriginal populations plummeted from 8,000 in 1846 to only 900 in 1910 (Riddell 1978).

In 1855, the United States Congress authorized treaties to set aside reservation lands for Native Americans, after which some Konkow were relocated to the Nome Lackee reservation in present-day Tehama County (Kowta 1988). Currently, descendants of the Maidu and Konkow have revitalized their ancestral heritage and have dissociated into the Enterprise, Berry Creek, and Mooretown rancherias in Oroville; the Mechoopda Indian Tribe in Chico; the United Maidu Nation and Susanville Rancheria in Susanville; and the Greenville Rancheria in Plumas County.

4.18.2 Tribal Consultation

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

- (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe and
- (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation.

ECORP mailed letters to the Butte County Historical Society on March 2, 2022, to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area. The records search consisted of a review of previous research and literature, records on file with the NEIC for previously recorded resources, and historical aerial photographs and maps of the vicinity.

ECORP archaeologists surveyed the Project Area for cultural resources on March 9, 2022. The land within the Project Area has been heavily altered as evidenced by a boat ramp, rock slope protection, paved parking lot, levee construction and maintenance, orchards, solar panel installation, sewage ponds, and Feather River water level variation. The Project Area is bounded by agricultural orchards on the east, and agricultural and a construction and maintenance yard to the west. The Gridley WWTP and solar panels array are in the northeastern portion of the Project Area, located behind locked fences, and were not surveyed; however, the ground surface was observed from the fencing. Ground surface visibility of the Project Area ranged between 0 and 100 percent. Areas which had no ground visibility included pavement, thick grasses, and rock slope protection. ECORP surveyed the Feather River West Levee (P-04-4250 and P-51-150) within the Project Area, which will function as an access road for the western work area (Figure 3). The levee is covered in loose gravel and levee sides in thick grasses. The Feather River is oriented north-south through the Project Area and the riverbank is dominated by thick, overgrown vegetation with few areas of open ground. An open grassy field in the northeast Project Area, just south of East Gridley Road, is covered in thick grasses. The southwestern portion of the Project Area contains wastewater ponds on either side of the levee and have been recorded as FR-01.

ECORP closely inspected the two work areas for cultural material. The eastern work area's surface was covered in rip rap and the western work area contained an agricultural field near the river's edge. ECORP did not observe any cultural material in either planned work 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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

As conveyed in the Cultural Resources Study, and as a result of previous investigations by other firms, two Tribal cultural resources have been previously recorded within the Project Area: P-04-1123, a pre-contact habitation site; and P-04-4184, a pre-contact habitation site.

As a result of the field survey and the records search, no NRHP- or CRHR-eligible cultural resources are present within either planned work area.

The Proposed Project will have no impact on the cultural resources present within the Project Area. The levee will be used for access to the work area and will not be altered during the Project. The two pre-contact resources are located subsurface within the levee and will not be altered during the Project. ECORP determined that the Proposed Project or undertaking will not adversely affect the qualities that make the pre-contact sites P-04-1123 and P-04-4184 significant.

If any previously unrecorded tribal cultural materials are identified during ground-disturbing extraction activities and are found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the CRHR or in a local register of historical resources), any impacts to the resource resulting from the Proposed Project could be potentially significant. Any such potential significant impacts would be reduced to a less than significant level by implementing Mitigation Measure **CUL-1**. This mitigation measure would ensure worker training and that work halt in the vicinity of a find until a qualified archaeologist can make an assessment and provide additional recommendations if necessary, including contacting Native American tribes.

4.18.4 Mitigation Measures

Implement Mitigation Measure **CUL-1**.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

Portions of the Project Site are located in unincorporated Butte County on the Feather River, with other portions of the Project Site located within the limits of the City of Gridley. The Project Site is accessed by a dirt road (levee) on the western side of the Feather River via East Gridley Road and through the WWTP on the eastern side of the Feather River, also off of East Gridley Road.

The only known utility facility located in the vicinity of and within the Project Site is the WWTP, which is located within the limits of the City of Gridley. Given the remote nature of the Project Site, and temporary nature of the shaft boring and microtunneling activities, bottled water and portable toilets will be provided for the onsite employees. The portable toilet will be located on flat ground outside of the stream channel, will be properly maintained and cleaned, and will be removed upon completion of the Project. In addition, the portable toilet will be placed in containment such as an impermeable plastic liner to contain any potential spills.

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project consists of shaft boring and microtunneling activities for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the river, which will take place on the embankments of the Feather River. The Project will not 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 that could cause significant environmental effects. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

As discussed above, the Proposed Project is located in a remote area without access to water supplies. The shaft boring and microtunneling processes will not require water supplies. Employees working at the Project Site will be provided bottled water for drinking. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

As discussed above, due to the size, nature and location of the Project, the Project will not require water treatment and will not generate wastewater. Employees would be provided portable toilets located on flat ground outside of the stream channel. No new water treatment or wastewater facilities or the expansion of such facilities are proposed or needed for the Project. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project would not result in a significant volume of solid waste generation as the proposed boring and microtunneling activities are not typically associated with the production of refuse. Minimal refuse produced by employees onsite shall be disposed into approved trash bins and removed by the operator or a commercial vendor as necessary. **No impact** would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project would not result in a significant volume of solid waste generation as the proposed boring and microtunneling activities for the replacement of a wastewater pipeline currently sitting on the bottom of the Feather River with a new pipeline installed underneath the Feather River, which are not typically associated with the production of refuse. Minimal refuse produced by employees onsite shall be disposed into approved trash bins and removed by the operator or a commercial vendor as necessary. **No impact** would occur.

4.19.3 Mitigation Measures

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

4.20 Wildfire**4.20.1 Environmental Setting**

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

The overall topography of the Project Site where the shaft boring and microtunneling will take place is relatively flat; the access road from East Gridley Road to the western side of the Feather River is located on top of a manufactured levee with a steep drop in elevation to river access. The access road via the WWTP is generally flat with very little vegetation aside from the riparian areas directly abutting the river, which is the same on both sides of the proposed boring and microtunneling area. The access roads on either side of the river are generally clear of vegetation. Fire Hazard Severity Zone mapping is performed by CAL FIRE and is based on factors such as fuels, terrain, and weather. According to the CAL FIRE: Fire Hazard Severity Zone mapping, the Project Site is not located in a High Fire Hazard Severity Zone (CAL FIRE 2022).

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project is not located in or near a State Responsibility Area (SRA) or in a very high fire hazard severity zone. The Project would have **no impact** in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project is not located in or near an SRA or in a very high fire hazard severity zone. The Project would have **no impact** in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project is not located in or near an SRA or in a very high fire hazard severity zone. The Project would have **no impact** in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact

The Proposed Project is not located in or near a SRA or in a very high fire hazard severity zone. The Project would have no impact in this area.

4.20.3 Mitigation Measures

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

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

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Less Than Significant With Mitigation Incorporated.

The results of the Initial Study show that there are potentially significant impacts to Biological and Cultural resources. These impacts will be reduced to less than significant levels after incorporation of mitigation measures and compliance with existing rules and regulations. Therefore, the Proposed Project will not substantially degrade the quality of the environment and impacts to habitat, wildlife populations, plant and animal communities, rare and endangered species, or important examples of the major periods of California history or prehistory; no additional mitigation is warranted.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

Cumulative impacts are defined as two or more individual affects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the development when added to the impacts of other closely related past, present, and reasonably foreseeable or probable future developments. Cumulative impacts can result from individually minor, but collectively significant, developments taking place over a period. The CEQA Guidelines, Section 15130 (a) and (b), states:

- a. Cumulative impacts shall be discussed when the project's incremental effect is cumulatively considerable.
- b. The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project. The discussion should be guided by the standards of practicality and reasonableness.

The Project Site is in unincorporated Butte County and the City of Gridley and consists of the replacement of an existing river bottom wastewater pipeline with an underground pipeline. No changes or amendments to land use, land use categories, or zoning are proposed; only the replacement of the pipeline as discussed throughout this Initial Study.

As evaluated herein, impacts associated with the Proposed Project would not be considered individually adverse or unfavorable with implementation of the required mitigation. Therefore, implementation of existing rules and regulations and the mitigation measures included in this document, no cumulative considerable impacts are identified or anticipated.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Less Than Significant Impact.

Direct and indirect impacts to human beings would be less than significant with the implementation of mitigation measures listed in this Initial Study. The Project is the replacement of an existing river bottom wastewater pipeline with an underground wastewater pipeline. All potential impacts have been thoroughly evaluated and have been deemed to be neither individually significant nor cumulatively considerable with mitigation in terms of any adverse effects upon the region, the local community, or its inhabitants. The Proposed Project will be required to meet the conditions of approval, rules and regulations, and mitigation measures for the Project to be implemented. It is anticipated that all such conditions of approval, rules and regulations, and mitigation measures will further ensure that no potential for significant adverse impacts will be introduced by pipeline replacement activities. Less than significant adverse impacts are identified or anticipated, and no mitigation measures are required.

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6.0 BIBLIOGRAPHY

- Arcese, P., M. K. Sogge, A. B. Marr, and M. A. Patten. 2020. Song Sparrow (*Melospiza melodia*), version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.sonspa.01>.
- Barr, C. B. 1991. The distribution, habitat and status of the valley elderberry longhorn beetle *Desmocerus californicus dimorphus* Fisher (Coleoptera: Cerambycidae). U.S. Fish and Wildlife Service, Sacramento, California.
- Bechard, M. J., C. S. Houston, J. H. Saransola, and A. S. England. 2020. Swainson's Hawk (*Buteo swainsoni*), version 1.0. In *Birds of the World* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.swahaw.01>.
- Bidwell, John. 1971. Sutter's Fort. In *California Heritage: An Anthology of History and Literature*, edited by John and Laree Caughey, pp. 134-138. F. E. Peacock Publishers, Itasca, Illinois. Revised Edition.
- Bierregaard, R. O., A. F. Poole, M. S. Martell, P. Pyle, and M. A. Patten. 2020. Osprey (*Pandion haliaetus*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.osprey.01>.
- Bildstein, K. L., K. D. Meyer, C. M. White, J. S. Marks, and G. M. Kirwan. 2020. Sharp-shinned Hawk (*Accipiter striatus*), version 1.0. In *Birds of the World* (S. M. Billerman, B. K. Keeney, P. G. Rodewald, and T. S. Schulenberg, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.shshaw.01>.
- Buehler, D. A. 2020. Bald Eagle (*Haliaeetus leucocephalus*), version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.baleag.01>.
- Busby, P. J., Wainwright, T. C., Bryant, B. J., Lierheimer, L. J., Waples, R. S., Waknitz, F. W., Lagomarsino, I. V. August 1996. "Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California." NOAA Technical Memorandum. NMFS-NWFSC-27. P1-255 (255).
- County Air Quality Management District. (BCAQMD). 2021. Butte County 2021 Climate Action Plan. <https://www.buttecounty.net/Portals/10/Planning/CAP/Butte-County-Final-CAP.pdf?ver=2021-12-20-135801-597>
- Bouey et al. 1993. DPR 523 form for P-04-001123/CA-BUT-1123. Available at NEIC, Chico.
- Bureau of Land Management (BLM). 2022. Bureau of Land Management, General Land Office Records, Records Automation website. <http://www.glorerecords.blm.gov/>, accessed February 23, 2022.
- California Air Resources Board. (CARB). 2021a. EMFAC2021 Web Database Emissions Inventory. https://arb.ca.gov/emfac/?utm_medium=email&utm_source=govdelivery.
- _____. 2021b. California Greenhouse Gas Emission Inventory 2021 Edition. Available online at: <https://ww2.arb.ca.gov/ghg-inventory-data>

- _____. 2019. State and Federal Area Designation Maps. <http://www.arb.ca.gov/desig/adm/adm.htm>.
- _____. 2005. Air Quality and Land Use Handbook.
- California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Dated April 1993.
- California Department of Conservation (DOC). 2022. Division of Land Resource Protection. Important Farmland Finder. Available at: <http://maps.conservation.ca.gov/ciff/ciff.html>.
- California Department of Finance (DOF). 2021. E-1 Population Estimates for Cities, Counties, and the State — January 1, 2011 and 2021. <https://www.dof.ca.gov/forecasting/demographics/estimates/e-1/>
- California Department of Finance (DOF). 2022. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2021-2022, with 2020 Benchmark. <https://dof.ca.gov/forecasting/Demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2022/>
- _____. 2021. E-5 City/County Population and Housing Estimates for Cities, Counties and the State – 1/1/2021. Butte County, California, April 2022. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/>.
- California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. Dated March 7, 2012.
- _____. 2002. California Department of Fish and Game comments to NMFS regarding green sturgeon listing, 129 pp.
- _____. 1998. Report to the Fish and Game Commission: A Status Review of the Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*) in the Sacramento River Drainage. Candidate Species Status Report 98-01. Sacramento, California. June.
- California Department of Fish and Wildlife (CDFW). 2022. Rarefind 5. Online Version, commercial version. California Natural Diversity Database. The Resources Agency, Sacramento. Accessed March 2022
- _____. 2020. Rarefind 5. Online Version, commercial version. California Natural Diversity Database. The Resources Agency, Sacramento. Accessed March 2022
- California Department of Forestry and Fire Protection (CAL FIRE). 2022. FHSZ Viewer. <https://egis.fire.ca.gov/FHSZ/>
- California Department of Mine Reclamation (DMR). 2022. Mines Online. Accessed April 2022. <http://maps.conservation.ca.gov/mol/index.html>.
- California Department of Toxic Substances Control (DTSC). 2022. EnviroStor Database. <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=dos+rios%2C+ca>

- California Department of Transportation (Caltrans). 2022. State Scenic Highway Map. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>.
- _____. 2021. CA Truck Network Maps. <https://dot.ca.gov/programs/traffic-operations/legal-truck-access/truck-network-map>
- _____. 2020. Transportation- and Construction-Induced Vibration Guidance Manual.
- _____. 2019. Structure and Maintenance & Investigations, Historical Significance–Local Agency Bridges Database March 2019. http://www.dot.ca.gov/hq/structur/strmaint/hs_local.pdf, Accessed February 23, 2022.
- _____. 2018. Structure and Maintenance & Investigations, Historical Significance–State Agency Bridges Database September 2018. http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf, Accessed February 23, 2022.
- _____. 2002. California Airport Land Use Planning Handbook.
- California Department of Water Resources (DWR). 2019. California Water Plan 2013: Sacramento River Hydrologic Region Report. <https://cawaterlibrary.net/wp-content/uploads/2017/05/CWP-Update-2013-Sacramento-River-Hydrologic-Region.pdf>
- _____. 2003. Sacramento River Hydrologic Region, East Butte Subbasin. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-B118-Basin-Descriptions/B118-Basin-Boundary-Description-2003---5_021_59.pdf.
- California Energy Commission (CEC). 2022. California Electrics Transmission Lines Interactive Map. Accessed April 2022. <https://cecgis-caenergy.opendata.arcgis.com/datasets/CAEnergy::california-electric-transmission-lines>.
- California Energy Commission (CEC). 2021. Website: Annual Generation – County. <https://cecgis-caenergy.opendata.arcgis.com/datasets/CAEnergy::california-electric-transmission-lines/explore?location=39.575489%2C-121.440232%2C9.74>
- _____. 2021. Website: Annual Generation – County. https://ww2.energy.ca.gov/almanac/electricity_data/web_qfer/Annual_Generation-County_cms.php
- _____. 2019. California Energy Consumption Data Management System. Website: Electricity and Natural Gas Consumption by County. <http://www.ecdms.energy.ca.gov/>.
- California Geological Survey (CGS). 2022. Map Service of the Alquist-Priolo Fault Zones defined under the Alquist-Priolo Earthquake Fault Zoning Act. <https://cadoc.maps.arcgis.com/home/item.html?id=ee92a5f9f4ee4ec5aa731d3245ed9f53>.
- _____. 2020. Liquefaction Zones. <https://maps.conservation.ca.gov/DataViewer/index.html>

- _____. 2016. Earthquake Shaking Potential for California [map].
https://ssc.ca.gov/forms_pubs/shaking_18x23.pdf.
- _____. 2011. Regional Geologic Hazards and Mapping Program - Table 4 Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010.
http://www.trpa.org/documents/rseis/3.7%20Geo%20soils/3.7_CGS%202010_Cities%20and%20Counties.pdf.
- _____. 2002. California Geomorphic Provinces.
http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf.
- California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Plants in California (online edition, v8-02). California Native Plant Society. Sacramento, CA. Available online:
<http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed January 2020.
- California Spanish Missions. 2011. California Missions Timeline. California Spanish Missions.
<http://www.californiaspanishmissions.net/california-missions-timeline.html>, Accessed February 10, 2022.
- California State Lands Commission (CSLC). 2022. California State Lands Commission Shipwreck Information. <https://www.slc.ca.gov/wp-content/uploads/2018/12/ShipwreckInfo.pdf>.
- Castillo, Edward D. 1978. The Impact of Euro-American Exploration and Settlement. In Handbook of North American Indians, Volume 8, California, edited by R.F. Heizer, pp. 99-127. Smithsonian Institution, Washington D.C.
- Cicero, C., P. Pyle, and M. A. Patten. 2020. Oak Titmouse (*Baeolophus inornatus*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.
<https://doi.org/10.2173/bow.oaktit.01>.
- City of Gridley. 2022. City of Gridley Police Department. Accessed April 2022.
<http://gridley.ca.us/government-and-departments/departments/police-department?msclkid=ba5b5856c0d311ec8844effb9e34ebdc>.
- _____. 2020. Gridley Zoning Map. <http://gridley.ca.us/government-and-departments/departments/planning-services/>
- _____. 2010. City of Gridley General Plan. <http://gridley.ca.us/documents-forms/>.
- Climate Registry. 2016. General Reporting Protocol for the Voluntary Reporting Program version 2.1. January 2016.
- Comrack, L.A. 2008. Yellow-breasted Chat (*Icteria virens*). Pages 351 – 358 in W. D. Shuford and T. Gardali, Eds. *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds No. 1*. 450 pp.

- County of Butte . 2022. Development Services Information, Butte County GIS.
<http://gis.buttecounty.net/public/index.html?viewer=dssearch>.
- _____. 2021. 2021 Butte County Climate Action Plan (CAP). Adopted December 14, 2021.
<https://www.buttecounty.net/dds/bccapupdate2020>.
- _____. 2020. Butte County Cooperative Fire Protection 2020 Annual Report.
[http://www.buttecounty.net/Portals/14/2021%20updates/BTU%20Annual%20Emergency%20Resp
onse%20Report%202020%20.pdf?ver=2021-04-14-104626-977](http://www.buttecounty.net/Portals/14/2021%20updates/BTU%20Annual%20Emergency%20Response%20Report%202020%20.pdf?ver=2021-04-14-104626-977)
- _____. 2017. Draft Update Butte County Airport Land Use Compatibility Plan
<https://www.buttecounty.net/dds/Meetings/ALUC/ALUC2017>.
- _____. 2013. Local Hazard Mitigation Plan Update. Accessed March 2022.
[https://www.buttecounty.net/Portals/19/LHMP/Butte_County_LHMP_Update_Chapter_1_Introducti
on.pdf#:~:text=Butte%20County%20and%20seven%20other%20jurisdictions%20prepared%20this
,for%20lower%20flood%20insurance%20premiums%20in%20CRS%20communities](https://www.buttecounty.net/Portals/19/LHMP/Butte_County_LHMP_Update_Chapter_1_Introducti
on.pdf#:~:text=Butte%20County%20and%20seven%20other%20jurisdictions%20prepared%20this
,for%20lower%20flood%20insurance%20premiums%20in%20CRS%20communities).
- _____. 2012a. Butte County General Plan. [https://www.buttecounty.net/dds/Planning/General-
Plan/Chapters](https://www.buttecounty.net/dds/Planning/General-Plan/Chapters)
- _____. 2012b. Butte County Zoning Map. Adopted 2012.
[https://www.buttecounty.net/Portals/10/Docs/Zoning/Zoning_Map_Poster.pdf?ver=2019-04-30-
104419-940&mssckid=fc0b56dbc00a11ec9064eba9602cad71](https://www.buttecounty.net/Portals/10/Docs/Zoning/Zoning_Map_Poster.pdf?ver=2019-04-30-104419-940&mssckid=fc0b56dbc00a11ec9064eba9602cad71)
- _____. 2004. Groundwater Management Plan.
<http://www.buttecounty.net/waterresourceconservation/groundwatermanagementplan>
- Dixon, R. B. 1905. The Northern Maidu. Bulletin of the Museum of Natural History 17(3):119-346. New York.
- Dorr, B. S., J. J. Hatch, and D. V. Weseloh. 2020. Double-crested Cormorant (*Phalacrocorax auritus*), version 1.0. In *Birds of the World* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.
<https://doi.org/10.2173/bow.doccor.01>
- Driver, H. 1961. *Indians of North America*. University of Chicago Press, Chicago, Illinois.
- Dunk, J. R. 2020. White-tailed Kite (*Elanus leucurus*), version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.whtkit.01>.
- eBird. 2020. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: <http://www.ebird.org>. Accessed September 2020.
- ECORP Consulting, Inc. 2022a. *Biological Resources Assessment, Gridley Feather River Sewer Crossing Project*, June.
- _____. 2022b. *Historic Property Identification Report for the Gridley Feather River Sewer Crossing*, May 2022.

- Emmett, R.L., S.L. Stone, S.A. Hinton, and M.E. Monaco. 1991. Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries, Volume II: Species Life Histories Summaries. ELMR Report No. 8. NOAA/NOS Strategic Environmental Assessments Division. Rockville, MD.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1 (On-line edition). Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. p. 143. January 1987.
- Environmental Protection Information Center (EPIC). 2001. Petition to list the North American green sturgeon (*Acipenser medirostris*) as an endangered or threatened species under the endangered species act. Center for Biological Diversity, Waterkeepers Northern California, Petitioners.
- Erlandson, J. M. 1994. Early Hunter-Gatherers of the California Coast. Plenum Press, New York.
- Estep, J. A. 1989. Biology, movements, and habitat relationships of the Swainson's hawk in the Central Valley of California, 1986-1987. California Department of Fish and Game, Nongame Bird and Mammal Section Report.
- Federal Emergency Management Agency (FEMA). 2011. FIRM Flood Insurance Rate Map. Map No. 06007C1125E. <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-122.08054502165783,38.215424323105154,-121.99746091521263,38.24913468400084>
- 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. (FTA). 2018. Transit Noise and Vibration Impact Assessment.
- Fisher, Frank W. 1994. Past and Present Status of Central Valley Chinook Salmon. Conservation Biology. 8(3): 870-873. September.
- Flood, N. J., C. L. Schlueter, M. W. Reudink, P. Pyle, M. A. Patten, J. D. Rising, and P. L. Williams. 2020. Bullock's Oriole (*Icterus bullockii*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.bulori.01>.
- Geupel, G. R. and G. Ballard. 2020. Wrentit (*Chamaea fasciata*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.wrenti.01>.
- GrandTab. 2019. GrandTab. 2019.05.07: California Central Valley Chinook Population Database Report. Fisheries Branch, Anadromous Resources Assessment. April 7, 2019.

- Grinnell, J., and A.H. Miller. 1944. *The Distribution of the Birds of California*. Cooper Ornithological Club, Berkeley (reprinted 1986 by Artemisia Press, Lee Vining, California).
- Gudde, Erwin G. 1969. *California Place Names: The Origin and Etymology of Current Geographical Names*. Third Edition. University of California, Berkeley.
- Hague, Harlan, and David J. Langum. 1995. *Thomas O. Larkin: A Life of Patriotism and Profit in Old California*. University of Oklahoma Press, Oklahoma.
- Halterman, M., M.J. Johnson, J.A. Holmes, and S.A. Laymon. 2016. A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo, Final Draft dated: May 2016. U.S. Fish and Wildlife Techniques and Methods. 45 pp.
- Hansen, R. W. and G. E. Hansen. 1990. *Thamnophis gigas*. Reproduction. *Herpetological Review* 21: 93 – 94
- Harris, Miller, Miller & Hanson, Inc.. 2006. Transit Noise and Vibration Impact Assessment, Final Report.
- Heizer, Robert F. 1978. *Handbook of North American Indians: California* 8. Key to Tribal Territories, pp. ix. Smithsonian, Washington.
- Hoffman, Ogden. 1862. Reports of Land Classes Determined in the United States District Court for the Northern District of California. Numa Hubert, publisher. San Francisco.
- Hughes, J. M. 2020. Yellow-billed Cuckoo (*Coccyzus americanus*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.
<https://doi.org/10.2173/bow.yebcuc.01>.
- Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. A Report to the California Department of Fish and Game, Rancho Cordova, California.
- Kim and Haley. 2013. DPR update for P-04-4250/CA-BUT-4250H. ICF International. August 13, 2013. Available at the NEIC.
- Koenig, W. D. and M. D. Reynolds. 2020. Yellow-billed Magpie (*Pica nuttalli*), version 1.0. In *Birds of the World* (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.
<https://doi.org/10.2173/bow.yebmag.01>.
- Kowta, M. 1988. *The Archaeology and Prehistory of Plumas and Butte Counties, California: An Introduction and Interpretive Model*. Report on file, North Central Information Center, Department of Anthropology, California State University, Sacramento.
- Kroeber, A. L. 1936. Culture Element Distributions: III, Area and Climax. University of California Publications in American Archaeology and Ethnology 37(3): 101-116, Berkeley, California.
- _____. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Washington.
- Kyle, Douglas. 2002. Historic Spots in California. Stanford University Press. Stanford, California.

- Laymon, S. A. 1998. Yellow-billed Cuckoo (*Coccyzus americanus*). In *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California*. California Partners in Flight. http://www.prbo.org/calpif/html/docs/riparian_v-2.html
- Lowther, P. E., P. Pyle, and M. A. Patten. 2020. Nuttall's Woodpecker (*Dryobates nuttallii*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.nutwoo.01>.
- Marshall, James W. 1971. The Discovery. In *California Heritage: An Anthology of History and Literature*, edited by John and Laree Caughey, pp. 191-192. F. E. Peacock Publishers, Itasca, Illinois. Revised Edition.
- McCawley, William. 1996. *The First Angelinos: the Gabrielino Indians of Los Angeles*. Malki Museum Press, Ballena Press, Banning, California.
- McEwan, D. 2001. Central Valley Steelhead in *Contributions to the biology of Central Valley salmonids*. R.L. Brown (ed.), CDFG, 1–43.
- McEwan, D., and T.A. Jackson. 1996. *Steelhead Restoration and Management Plan for California*. California. Department of Fish and Game, Sacramento, California, 234 pages.
- Moratto, M. J. 1984. *California Archaeology*. Academic Press, Orlando.
- _____. 1992. *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento, California.
- Moser, M.L., J.A. Israel, M. Neuman, S.T. Lindley, D.L. Erickson, B.W. McCovey Jr., and A.P. Klimley. 2016. Biology and life history of green sturgeon (*Acipenser medirostris* Ayres, 1854): state of the science. *J. Appl. Ichthyol.* 32 (Suppl. 1) pp. 67-86.
- Moyle, P.B. 2002. *Inland Fishes of California: Revised and Expanded*. University of California Press. 502pp.
- Moyle, P.B. 2002. *Inland Fishes of California: Revised and Expanded*. University of California Press. 502pp.
- Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. *Fish Species of Special Concern in California*. Third Edition. Sacramento: California Department of Fish and Wildlife. www.wildlife.ca.gov
- Moyle, P.B., J. E. Williams, and E.D. Wikramanayake. 1989. *Fish Species of Special Concern of California*. Final report submitted to California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA.
- Murdock, G.P. 1960. *Ethnographic Bibliography of North America*, 3rd edition. Human Relation Area Files, New Haven, Connecticut.
- National Marine Fisheries Service (NMFS). 2014. *Recovery Plan for the Evolutionary Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead*. West Coast Region, Sacramento California. July.

- National Park Service (NPS). 2022. National Register of Historic Places, Digital Archive on NPGallery <https://npgallery.nps.gov/NRHP/BasicSearch/>. Accessed February 23, 2022.
- National Wild and Scenic Rivers (NWSRS). 2022. <https://www.rivers.gov/california.php>
- National Wild and Scenic Rivers (NWSRS). 2022. <https://www.rivers.gov/?msclkid=f3c2a4b1c00511ecb54d47c46c1f18ec>
- Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. Custom Soil Resource Report for Butte Area, California. <http://websoilsurvey.nrcs.usda.gov/>. Accessed March 2022.
- Office of Historic Preservation (OHP). 2022. Office of Historic Preservation California Historical Landmarks Website. http://ohp.parks.ca.gov/?page_id=21387, accessed February 23, 2022.
- _____. 2020. Built Environment Resource Directory. March 3, 2020 for Butte County. https://ohp.parks.ca.gov/?page_id=30338, accessed February 23, 2022.
- Rosenthal, Jeffrey and Sam Willis. 2020. Geoarchaeological Investigation for the Sutter Basin Flood Risk Management Project, Cypress Avenue to Tudor Road, Feather River West Levee, Sutter County, California. DRAFT
- _____. 2012. Directory of Properties in the Historic Property Data File for Butte County. On file at NEIC, California State University, Chico, California.
- _____. 1999. Directory of Properties in the Historical Resources Inventory. On file at NEIC, California State University, Chico, California.
- _____. 1996. California Historical Landmarks. California Department of Parks and Recreation, Sacramento, California.
- _____. 1992. California Points of Historical Interest. California Department of Parks and Recreation, Sacramento, California.
- Poulin, Ray G., L. Danielle Todd, E. A. Haug, B. A. Millsap and Mark S. Martell. 2011. Burrowing Owl (*Athene cunicularia*), *The Birds of North America* (P. G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America: <https://birdsna.org/Species-Account/bna/species/buowl>.
- Powers, S. 1877. *Tribes of California. Contributions to North American Ethnology* 3. U.S. Geographical and Geological Survey of the Rocky Mountain Region. Washington.
- Radtke, L.D. 1966. Distribution of smelt, juvenile sturgeon and starry flounder in the Sacramento – San Joaquin Delta. Pp. 115-119 in Turner, S.L. and D.W. Kelley (Eds.), *Ecological Studies of the Sacramento – San Joaquin Delta, Part II*. California Department of Fish & Game, Fish Bulletin, 136.
- Reunion Committee. 1980. *History of the LDS Church in the Gridley, California Area*. Mc Dowell Printing, Gridley, California.
- Riddell, F.A. 1978. Maidu and Konkow. *Handbook of North American Indians Vol. 8: California*. Pp. 370-386. Smithsonian, Washington.

- Riddell, F.A. and W.E. Pritchard. 1971. Archaeology of the Rainbow Point Site (4-Plu-S94), Bucks Lake, Plumas County, California. University of Oregon Anthropological Papers 1:59-102. Eugene.
- Robinson, W. W. 1948. Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads. University of California Press, Berkeley.
- Rosenfield, R. N., K. K. Madden, J. Bielefeldt, and O. E. Curtis. 2020. Cooper's Hawk (*Accipiter cooperii*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.coohaw.01>.
- Rosenthal, J., White, G., and Mark Sutton. 2007. The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture, and Complexity*, edited by T. Jones and K. Klar, pp. 147-163. Altamira Press, Lanham, Maryland.
- Rossman, D. A., N. B. Ford, and R. A. Seigel. 1996. *The Garter Snakes: Evolution and Ecology*. University of Oklahoma Press. 332 pp
- Sacramento River Watershed Program. 2010. Sacramento River Watersheds. <http://www.sacriver.org/aboutwatershed/roadmap/watersheds>.
- Sacramento Valley Air Quality Engineering and Enforcement Professionals. (SVAQEEP). 2018. Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan.
- Seesholtz, A. M.; Manuel, M. J.; Van Eenennaam, J. P., 2015: First documented spawning and 620 associated habitat conditions for Green Sturgeon in the Feather River, California. *Environ. Biol. Fish.* 98, 905–912.
- Shipley, W. F. 1978. Native Languages of California. In *Handbook of North American Indians, Vol. 8: California*, edited by R.F. Heizer, pp. 80-90. Smithsonian Institution, Washington, D.C.
- Shapovalov, L. and A. C. Taft. 1954. The Life Histories of the Steelhead Rainbow Trout (*Salmo gairdneri gairdneri*) and Silver Salmon (*Oncorhynchus kisutch*). Fish Bulletin No. 98. State of California Department of Fish and Game.
- Small, A. 1994. California Birds: Their Status and Distribution. Ibis Publishing Company. Vista, California. 342 pp.
- Snider, W. M., and R. Titus. 1996. Fish Community Survey: Lower American River, January through June 1995. California Department of Fish and Game.
- State Water Resources Control Board (SWRCB). 2022. Geotracker. <http://geotracker.waterboards.ca.gov>.
- Talley, T.S., E. Fleishman, M. Holyoak, D.D. Murphy, and A. Ballard. 2007. Rethinking a rare-species conservation strategy in an urban landscape: The case of the valley elderberry longhorn beetle. *Biological Conservation* 135(2007): 21-32.
- Thompson, T. H. and A. A. West. 1880. History of Sacramento County. Reproduced by Howell-North, 1960, Berkeley.

- University of California Museum of Paleontology (UCMP). 2022. UCMP Locality Search – Butte County. <https://ucmpdb.berkeley.edu/loc.html>
- U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.
- U.S. Fish and Wildlife Service (USFWS). 2022. USFWS Resource Report List. Information for Planning and Conservation. Internet website: <https://ecos.fws.gov/ipac>. Accessed: March 2022.
- _____. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.
- _____. 2014. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*); Final Rule. Federal Register 79 (192):59992-60038. October 3, 2014.
- _____. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Sacramento Fish and Wildlife Office. Dated July 9, 1999.
- _____. 1980. Listing the Valley Elderberry Longhorn Beetle as a Threatened Species with Critical Habitat; Final Rule. Federal Register Volume 45, Number 155 (August 8, 1980).
- U.S. Geological Survey (USGS). 2022b. Areas of Land Subsidence in California. Accessed March, 2022. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html.
- Wallace, William J. 1978. Post-Pleistocene Archeology, 9000 to 2000 BC. In Handbook of North American Indians, Vol. 8: California, edited by R.F. Heizer, pp. 25-36. Smithsonian Institution, Washington, D.C.
- Warkentin, I. G., N. S. Sodhi, R. H. M. Espie, A. F. Poole, L. W. Oliphant, and P. C. James. 2020. Merlin (*Falco columbarius*), version 1.0. In *Birds of the World* (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.merlin.01>.
- Watt, D. J., P. Pyle, M. A. Patten, and J. N. Davis. 2020. Lawrence's Goldfinch (*Spinus lawrencei*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.lawgol.01>.
- Wells, Harry L., Chambers, W. L., and Gilbert, Frank T. 1882. History of Butte County, California in Two Volumes: Volume 1. History of California from 1513 to 1850. Volume II. History of Butte County. Harry L. wells, San Francisco
- Western Bat Working Group (WBWG). 2017. Western Bat Species Accounts. <http://wbwg.org/western-bat-species/>. Accessed 2017.
- Western Electro-Acoustic Laboratory, Inc. 2000. Sound Transmission Sound Test Laboratory Report No. TL 96-186.