CEQA Plus Initial Study and Mitigated Negative Declaration

Little Avenue Lift Station and Forced Main Replacement Project

Lead Agency:

City of Gridley
685 Kentucky Street
Gridley, California 95948

Prepared by:

55 Hanover Lane
Suite A
Chico, California 95973

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

DRAFT MITIGATED NEGATIVE DECLARATION
LITTLE AVENUE LIFT STATION AND FORCED MAIN REPLACEMENT PROJECT

Lead Agency: City of Gridley

Project Proponent: City of Gridley

Project Location: The 2,872-foot-long Project area is located along Little Avenue between Oregon Street on the west and Vermont Street on the east. It then continues east along a private road, under a Butte Water District (BWD) irrigation canal, and into an open field in the southern part of the City of Gridley. *(Figure 1. Project Vicinity* and *Figure 2. Site Location*). The Project is located in the northern half of Section 1 of Township 17 North, Range 2 East, (Mount Diablo Base and Meridian). The approximate center of the site is located at latitude 39º21'20" N and longitude 41º121'56" W.

Project Description: The Proposed Project involves the replacement of approximately 2,872 linear feet of 4-inch and 6-inch forced main wastewater pipeline with a 10-inch pipeline, one lift station, relocation of one control box, and the installation of a backup generator. The majority of the Proposed Project is located within the Little Avenue right of way (ROW) except for approximately 670 feet, which will occur within the City's utility easement on private land and a section that crosses under a BWD irrigation canal of the Butte Water District.

Public Review Period: July 26, 2019 to August 24, 2019

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

BIO-1: *VELB Avoidance.* A qualified biologist shall be consulted to ensure that the directional bore (beneath the BWD irrigation canal) entry and exit pits are located to avoid impacts to elderberry shrubs. Elderberry plants present in the Project area shall be avoided by project activities.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-2: *Nesting Bird Work Window*. Complete all ground-disturbing and vegetation-disturbing work during the non-nesting season to avoid impacts to nesting birds, which generally corresponds to the period September 1 through January 31.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-3: *Nesting Bird Pre-construction Surveys*. If it is not feasible to implement mitigation measure **BIO-2**, a qualified biologist shall survey all areas to be disturbed by project construction no more than 14 days in advance of activities. Active bird nests identified during the survey effort shall be avoided until such time that the qualified biologist has determined that the nest(s) is vacant. Depending on the location of the active nest(s), the qualified biologist may establish a no-work buffer around the active nest(s).

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-4: *Minimize disturbance to Aquatic Features*. Project activities shall avoid disturbance to the roadside ditch south of Little Avenue (Figure 7), and to the ditch feature that is a tributary to the BWD irrigation canal (Figure 8) to the maximum extent feasible. Prior to commencement of construction activities, the specific portions of waterways to be disturbed for installation of a box culvert and generator pad shall be delineated by a qualified engineer. For necessary, unavoidable disturbance of aquatic features, **BIO-5** shall be implemented,

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-5: *Jurisdictional Delineation and Permitting*. In instances where it is not feasible to implement mitigation measure **BIO-4**, a qualified biologist should be retained to complete a formal jurisdictional delineation of the two noted ditch features to determine their regulatory statuses and requirements. Depending on the results of this delineation effort, additional permitting efforts may be required prior to completing project activities in and near these ditch features.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during grading and construction activities, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agency and applicable landowner. The agency shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be eligible for inclusion in the National Register of Historic Places (NRHP) or California Register of Historic Places (CRHR). Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR, or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Siskiyou County Coroner (as 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 Public Resources Code (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 Native American Heritage Committee (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 (Assembly Bill [AB] 2641). Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley*

GEO-1 If paleontological or other geologically sensitive resources are identified during any phase of project development, the construction manager shall cease operation at the site of the discovery and immediately notify City of Gridley. City of Gridley shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, City of Gridley shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data

recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley*

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AMSL	Above mean sea level
APE	Area of Potential Effects
APN	Accessor Parcel Number
BMPs	Best Management Practices
BP	Before present
BRA	Biological Resource Assessment
CalCUPA	California Certified Unified Program Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	Cubic feet per second
CGS	California Geological Survey
CH_4	Methane
CHRIS	California Historical Resources Information System
City	City of Gridley
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
County	Butte County
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Places
CRPR	California Rare Plant Rank
CWA	Federal Clean Water Act
DMR	Division of Mine Reclamation
DOC	California Department of Conservation
DOF	Department of Finance
DPM	Diesel Particulate Matter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
fc	Foot-candle

LIST OF ACRONYMS AND ABBREVIATIONS

FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
General Permit	General Construction Activity Stormwater Permit
GHGs	Greenhouse Gases
GLO	General Land Office
gpd	Gallons per day
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	Day-night average sound level
L_{eq}	Equivalent continuous sound level
LOS	Level of service
M	Industrial
mg	Million gallons
mgd	Million gallons per day
MLD	Most Likely Descendent
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zones
MSL	Mean sea level
MTBA	Migratory Bird Treaty Act
N_2O	Nitrous Oxide
NAHC	Native American Heritage Commission
NEIC	North Central Information Center
ND	Negative Declaration
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	California Office of Historic Preservation
PM_{10} and $PM_{2.5}$	Particulate Matter
PRC	Public Resource Code
Project/ Proposed Project	Little Avenue Lift Station and Forced Main Project
RLD	Residential, Low Density
ROG	Reactive Organic Gases
RVLD	Residential, Very Low Density
RWQCB	Regional Water Quality Control Board
SCH	State Clearinghouse
SMARA	Surface Mining and Reclamation Act of 1975

LIST OF ACRONYMS AND ABBREVIATIONS

SO_2	sulfur dioxide
SR	State Route
SRA	Sensitive Receptor Area
SRWP	Sacramento River Watershed Program
SSC	Species of special concern
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
UCMP	California Museum of Paleontology
USACE	United States Army Corps of Engineers
USC	U.S. Code
USEPA	Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle miles traveled

1.0 BACKGROUND

1.1 Summary

Project Title:	Little Avenue Lift Station and Forced Main Replacement Project
Lead Agency Name and Address:	City of Gridley 685 Kentucky Street Gridley, California 95948
Lead Agency Contact Person and Phone Number:	Dave Harden (530) 846-5695
Project Owner	City of Gridley
Project Location:	The Project area is located in the City of Gridley along Little Avenue between Oregon Street on the west and Vermont Street on the east. It then continues east along a private road, under a BWD irrigation canal, and into an open field in the southern part of the City of Gridley (*Figure 1. Regional Location* and *Figure 2 Site Location*). The Project is located in the northern half of Section 1 of Township 17 North, Range 2 East, (Mount Diablo Base and Meridian). The approximate center of the site is located at latitude 39º21'20" N and longitude 41º121'56" W.
General Plan Designation:	The City of Gridley General Plan identifies the 2,870-foot-long site Project as being within the Residential, Low Density (RLD), Residential, Very Low Density (RVLD), and Industrial (M) land use designations.
Zoning:	Multiple districts

1.2 Introduction

The City of Gridley (City) is the Lead Agency for this Initial Study (IS). The Initial Study has been prepared to identify and assess the anticipated environmental impacts of the City's Little Avenue Lift Station and Forced Main Replacement Project (Project or Proposed Project). This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resource Code [PRC], § 21000 et seq.) and state CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all

state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a Project (Negative Declaration, Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]).

The City is seeking funding for the proposed Project under the State Water Resources Control Board's (SWRCB's) Clean Water State Revolving Fund (CWSRF) Program, which is partially funded through the Environmental Protection Agency (EPA). Because of the federal nexus with the EPA, projects seeking funding through the CWSRF Program are subject to federal laws and regulations (e.g., federal "cross-cutters"). Under the CWSRF Program, SWRCB uses a project's CEQA document along with federal cross-cutting documentation in place of a National Environmental Policy Act (NEPA) document; this document is termed a "CEQA-Plus" document. The Little Avenue Replacement Project IS/MND also includes analysis of those areas required by the federal cross cutter. This analysis is included in Section 5.0 of this IS/MND.

1.3 Project Location and Surrounding Land Uses

The Project area is located in the City of Gridley. The city boundaries cover approximately 2.08 square miles. As illustrated in *Figure 1. Regional Location* and *Figure 2. Project Location*, the majority of the Proposed Project is located within the Little Avenue right of way (ROW), except for approximately 670 feet that will occur within the City's utility easement on private land and a section that crosses under an irrigation canal. Adjacent uses include single-family homes and industrial uses to the north, agricultural land to the east, rural residential homes and agricultural uses to the south, and single-family homes and agricultural uses to the west. See *Figure 3. Surrounding Uses*.

1.4 Environmental Setting

Gridley is located in the southwestern portion of Butte County, west of the Feather River, in the northern portion of the Sacramento Valley (Exhibit Setting-1). Downtown Gridley is approximately 17 miles southwest of Oroville, approximately 17 miles northwest of downtown Yuba City, and approximately 30 miles south-southeast of Chico. Other nearby cities include Biggs and Live Oak. Gridley is surrounded by orchards, rice fields, and grazing lands in Butte County, with some rural scale residences mixed in with this predominantly agricultural landscape. The land is predominately flat and has rich agricultural soils (Gridley 2009).

The City of Gridley is a relatively small city with an estimated 2018 population of 6,937 (DOF 2018). The Proposed Project is located on the southern border of the City in an urban/agriculture interface area. The site is linear in area, approximately 2,870 feet long, 5 feet deep, and 3 feet wide feet wide. The western portion of the site, approximately 1,800 feet, is developed with single-family homes to the north and rural residential/agricultural uses to the south. The eastern portion of the site, approximately 1,070 feet, proceeds down a semiprivate driveway and has single-family homes to the north and south and industrial uses to the north. The Project crosses under a Butte Water District (BWD) irrigation canal just east of the Little Avenue terminus. After crossing under the canal, the site proceeds onto private vacant land for approximately 280 feet and terminates at the City's old wastewater treatment plant.

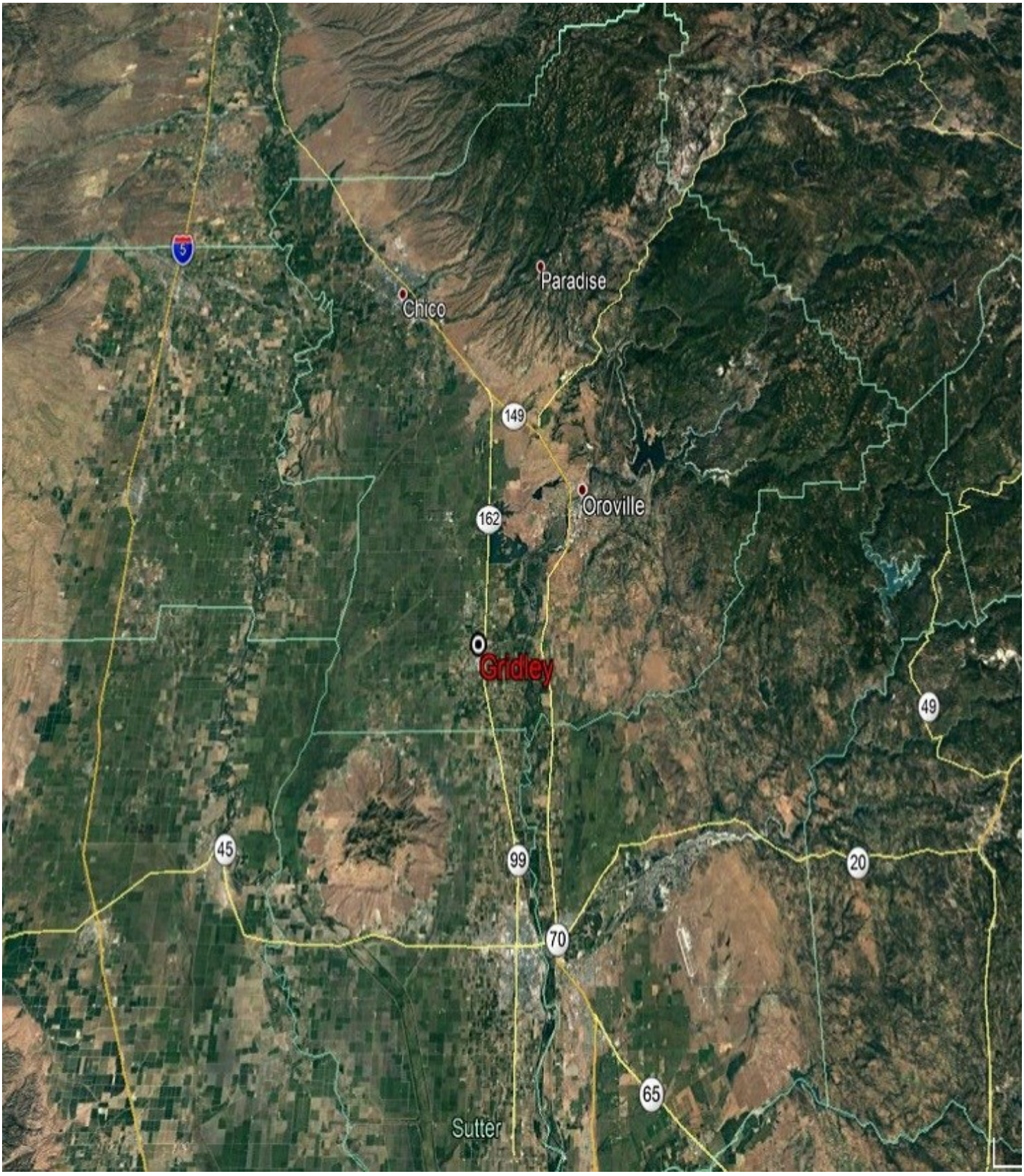

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Figure 1. Regional Location
Little Avenue Force Main and Lift Station Improvements Project

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Figure 2. Project Location
Little Avenue Force Main and
Lift Station Improvements Project

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Figure 3. Surrounding Uses
Little Avenue Force Main and
Lift Station Improvements Project

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2.0 PROJECT DESCRIPTION

2.1 Project Characteristics

The Proposed Project is the replacement of approximately 2,872 linear feet of 4-inch and 6-inch forced main wastewater pipeline with a 10-inch pipeline, one lift station, relocation of one control box, and the installation of a backup generator. The Project area starts at the Oregon/Little Avenue intersection travels east for 2,872 feet and terminates at the existing connection located in the City's old wastewater facility. See *Figures 4a through 4d*. The Project will abandon in place portions of the pipeline while removing other portions. Most of the construction will occur within the existing Little Avenue ROW, except for approximately 280 feet that will occur within the City's utility easement on private land and the section crossing under a BWD irrigation canal. The replacement of the pipeline under the irrigation canal will be completed using horizontal direction drilling with fusible polyvinyl chloride pipe. Installation will be completed mostly by open trenching, with one section of directional drilling beneath the irrigation canal.

Employees and Construction

On average, there will be 10 employees at the Project site while construction activities are occurring. Construction is anticipated to start in May of 2021 and take approximately 100 days to complete.

Installation will be completed mostly by open trenching. The trenches are anticipated to be 5 feet deep and 3 feet wide. All trenches will be backfilled with existing native soils or a combination of new AB, AC, and pipe bedding material. For the area where trenching is required in the street travel way, the asphalt and fill material will be repaired per City standards.

Approximately 800 cubic yards of import and 800 cubic yards of export soil material will be required to complete the Project. This includes export of excavation from pipe zone and road way material in the trench zone and the import of new AB, AC, and pipe bedding material. Most of the trench material will be reused in the backfill of the trench.

2.2 Regulatory Requirements, Permits, and Approvals

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

Lead Agency Approval

City of Gridley is the lead agency for the Proposed Project. In order to approve the Proposed Project, the Gridley City Council (Council) must first adopt the IS/MND, approve the Proposed Project, and file a Notice of Determination within five working days. The Council will consider the information contained in the IS/MND in making its decision to approve or deny the Proposed Project. The IS/MND is intended to disclose to the public the Proposed Project's details, analyses of the Proposed Project's potential environment impacts, and identification of feasible mitigation that will reduce potentially significant impacts to less than significant levels.

Other agency approvals include the following:

Central Valley Regional Water Quality Control Board (RWQCB)

The RWQCB typically requires that a Construction General Permit be obtained for projects that disturb more than one acre of soil. Typical conditions issued with such a permit include the submittal of and adherence to a stormwater pollution prevention plan (SWPPP), as well as prohibitions on the release of oils, grease, or other hazardous materials.

Butte County Air Quality Management District (BCAQMD)

The Proposed Project is located in an area under the jurisdiction of the BCAQMD. The Project applicant will be required to obtain the district's approval of a dust control plan prior to any soil-disturbing activities on the site, as well as an Authority to Construct and a Permit to Operate.

2.3 Relationship of Project to Other Plans and Projects

City of Gridley General Plan

The City of Gridley 2030 General Plan is the primary document governing land use development in the city. The General Plan provides a governing basis for all other plans and planning documents of the City and all codes, ordinances, and policies of the City related to land use change, transportation, environmental resources, infrastructure, and other related topics. The General Plan consists of the following elements: Land Use, Circulation, Community Design and Character, Conservation, Open Space, Safety, Public Facilities, Housing Element, and Noise. Each element also has goals, policies, and implementation strategies to guide land use and development decisions in the future.

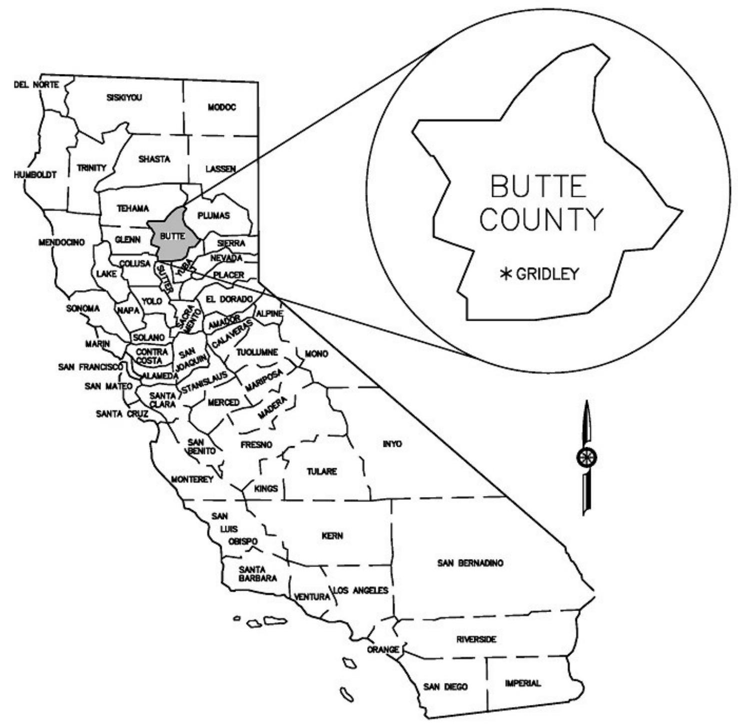
2.4 Consultation with California Native American Tribe(s)

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 in the Project area is provided in Section 4.18 of this Initial Study.

GRIDLEY
CALIFORNIA

LITTLE AVENUE FORCE MAIN AND LIFT STATION IMPROVEMENTS

ALONG LITTLE AVENUE FROM OREGON STREET
TO KENTUCKY STREET IN
THE CITY OF GRIDLEY, COUNTY OF BUTTE



CALIFORNIA STATE MAP
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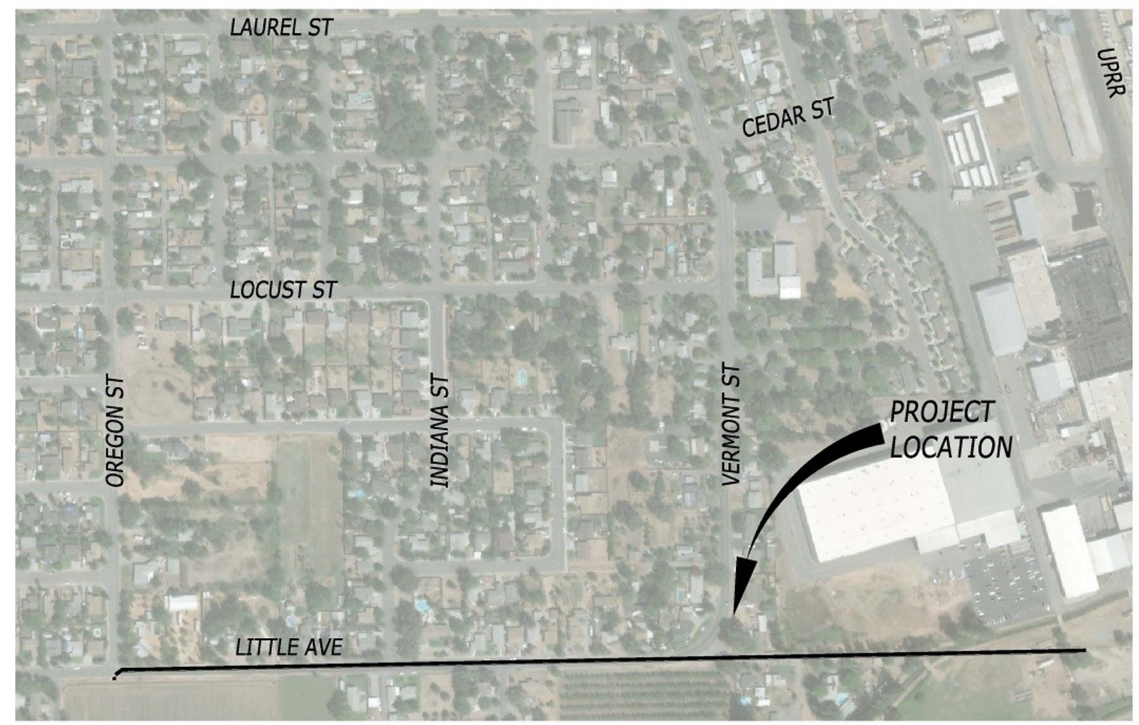

LOCATION MAP
NOT TO SCALE

INDEX OF PLAN SHEETS

SHT NO.	DWG NO.	SHEET TITLE
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2	SC-1	KEY SHEET AND SITE PLAN
3	L-1	LAYOUT - 1
4	L-2	LAYOUT - 2

UTILITY REPRESENTATIVES

UTILITY	COMPANY	CONTACT	PHONE
ELECTRICAL	BIGGS-GRIDLEY ELECTRIC	DARYL DYE	(530) 846-5954
GAS/ELECTRICAL	PACIFIC GAS & ELECTRIC	LINDSAY LEWIS	(530) 894-4731
SEWER	CITY OF GRIDLEY	DARYL DYE	(530) 846-5954
TELEPHONE	AT&T	ASTRID WILLARD	(916) 484-2388
USA	NORTH UNDERGROUND SERVICE ALERT	STAFF	(800) 227-2600
WATER	CITY OF GRIDLEY	DARYL DYE	(530) 846-5954
COMMUNICATIONS	LEVEL 3 COMMUNICATIONS	MATTHEW WILLIAMS	(877) 253-8353

811 Know what's below. Call before you dig.

SUBMITTED BY:

BEN|EN
TRUSTED ENGINEERING ADVISORS

DAVE HARDEN
PROJECT ENGINEER
P.E. 84216
DATE

APPROVED BY:

DARYL DYE
PUBLIC WORKS DIRECTOR
CITY OF GRIDLEY

APPROVED BY:

TRIN J. CAMPOS
CITY ENGINEER
CITY OF GRIDLEY

NO.	REVISIONS	BY	DATE
6			
5			
4			
3			
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BENCH MARK ELEV : XX DATUM : XX
DESCRIPTION :
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DESIGN BY :	D.HARDEN
DRAWN BY :	L.MARTINEZ
CHECKED BY :	M.MASSARO
SCALE :	AS SHOWN
DATE :	4/19/2019
PROJ NO. :	16607-201

VERIFY SCALE
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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APRIL 2019

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Bennett Engineering Services
1082 Sunrise Avenue, Suite 100
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GRIDLEY CALIFORNIA

LITTLE AVE FORCE MAIN AND LIFT STATION IMPROVEMENTS
TITLE SHEET
CALIFORNIA

T-1
1 OF 4

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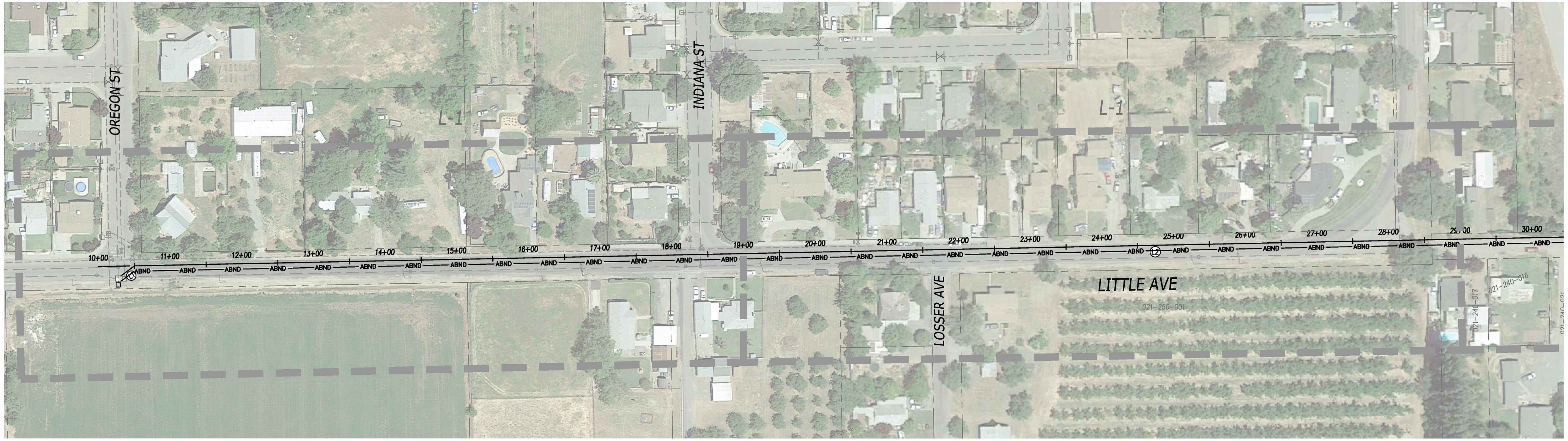
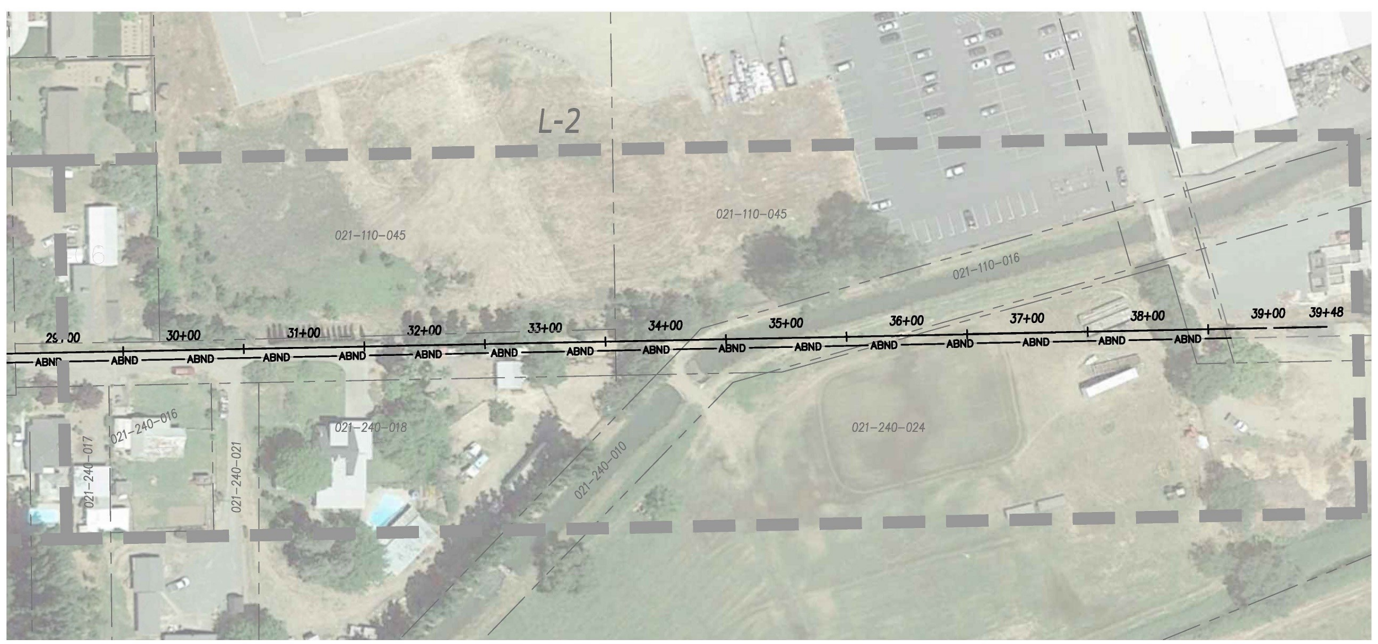
Figure 4a. Site Plan
Little Avenue Force Main and
Lift Station Improvements Project





Line Table		
Line #	Length	Bearing
L1	23.52'	S53° 38' 15"W
L2	2848.18'	S88° 50' 46"W

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SCALE IN FEET

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BENCH MARK ELEV : XX DATUM : XX
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DESIGN BY :	M.MASSARO
DRAWN BY :	L.MARTINEZ
CHECKED BY :	D.HARDEN
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GRIDLEY CALIFORNIA

LITTLE AVE FORCE MAIN AND LIFT STATION IMPROVEMENTS

KEY SHEET AND SITE PLAN

CALIFORNIA

SC-1
2 OF 4

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Figure 4b. Site Plan
Little Avenue Force Main and
Lift Station Improvements Project

CONSTRUCTION NOTES:

1. PROTECT STRUCTURE/TREE IN PLACE
2. PROTECT EX UTILITY IN PLACE
3. ABANDON 6" PVC FORCE MAIN
4. REMOVE 4" PVC FORCE MAIN AND INSTALL 10" PVC FORCE MAIN
5. TIE INTO EXISTING 16" FORCE MAIN
6. INSTALL A 8"x10"x10" MANIFOLD AND TIE INTO PUMP STATION
7. RELOCATE CONTROL BOX

LEGEND:

- APPROXIMATE RIGHT-OF-WAY
- ABND — ABANDON PIPE

DESIGN BY :	D.HARDEN
DRAWN BY :	L.MARTINEZ
CHECKED BY :	D.HARDEN
SCALE :	1" = 40'
DATE :	4/19/2019
PROJ NO. :	16607-201

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Roseville, California 95661
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F 916.783.4110

GRIDLEY CALIFORNIA

LITTLE AVE FORCE MAIN AND LIFT STATION IMPROVEMENTS

LAYOUT - 1
STA 10+00 to STA 29+00

CALIFORNIA

L-1 — 3 OF 4

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Figure 4c. Site Plan
Little Avenue Force Main and
Lift Station Improvements Project

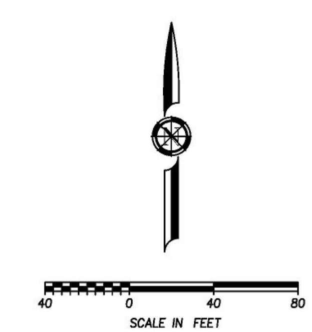
CONSTRUCTION NOTES:

1. PROTECT STRUCTURE/TREE IN PLACE
2. PROTECT EX UTILITY IN PLACE
3. ABANDON 6" PVC FORCE MAIN
4. REMOVE 4" PVC FORCE MAIN AND INSTALL 10" PVC FORCE MAIN
5. TIE INTO EXISTING 16" FORCE MAIN
6. INSTALL A 8"x10"x10" MANIFOLD AND TIE INTO PUMP STATION
7. RELOCATE CONTROL BOX

LEGEND:

— — — APPROXIMATE RIGHT-OF-WAY

—ABND— ABANDON PIPE



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BENCH MARK ELEV : XX DATUM : XX
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DESIGN BY :	D.HARDEN
DRAWN BY :	L.MARTINEZ
CHECKED BY :	D.HARDEN
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APRIL 2019

BEN|EN
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GRIDLEY CALIFORNIA

LITTLE AVE FORCE MAIN AND LIFT STATION IMPROVEMENTS

LAYOUT - 2
STA 29+00 to STA 39+50

CALIFORNIA

L-2
4 OF 4

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 4d. Site Plan
Little Avenue Force Main and
Lift Station Improvements Project

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

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

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

Determination

On the basis of this initial evaluation:

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

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

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

I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required. ☐

PA 7-18-19

Paul Eckert
City Administrator

Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

Gridley is located in the southwestern portion of Butte County, west of the Feather River, in the northern portion of the Sacramento Valley. Gridley is a small city of approximately 2.08 square miles and is surrounded by orchards, rice fields, and grazing lands in Butte County, with some rural scale residences mixed in with this predominantly agricultural landscape. The land is predominately flat and has rich agricultural soils.

Visual Character of the Project Site

The topography of the Project site is flat, with elevations ranging from 92 - 95 feet above mean sea level (AMSL) over the approximately ½ mile long site. As the Project would the replacement of an existing wastewater pipeline on the southern border of the developed area of the City, visual character varies from single-family homes to industrial areas to the north of the site and rural residential uses, and single-family homes and agricultural land to the south of the site.

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. The California Scenic Highway Program has not officially designated any roadways in or adjacent to the City as a scenic highway (Caltrans 2019).

4.1.2 Lighting

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

- Direct sunlight - 10,000
- Full daylight - 1,000
- Twilight - 1
- Full moon - 0.1
- Covered parking lot - 5
- Gas station canopy - 12.5
- Department store - 40
- Grocery store – 50

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

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

Spill Light

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

Sky Glow

Sky glow is the light that illuminates the sky above the horizon and reflects off of moisture and other tiny particles in the atmosphere. Sky glow would be considered a significant impact if it were a permanent addition to the environment. Control features are available on the light sources to reduce sky glow and glare from nighttime lighting. These control features direct light downward, thereby reducing the spill of light that causes sky glow and reducing glare.

Glare

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

4.1.3 Aesthetics (I) 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 on a scenic vista?	☐	☐	☐	☒

The City of Gridley 2030 General Plan identifies the expansive views of the Sierra Nevada and Sutter Buttes are important visual elements of the Planning Area. However, the General Plan does not include any policies for the protection of views or identify any view sheds, or scenic vistas that should be protected.

The only feature of the Proposed Project would be greater than ground height would be the generator which would be approximately three feet in height. The Project would not block views of any scenic vistas. As such, the Project would have no impact on a scenic vista.

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?	☐	☐	☐	☒

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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In a non-urbanized area 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?	☐	☐	☐	☒

The Project is the replacement of existing wastewater pipelines, a lift station, and generator. With the exception of the generator, all Project improvements would be completed underground or at ground surface. Upon completion of the Project, the only visual indication that this improvement has been done would be the new generator and new asphalt strips on the city streets. These improvements would not conflict with applicable zoning and other regulations governing scenic quality in the City of Gridley. Therefore, the Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

The Project is the replacement of existing wastewater pipelines, a lift station and generator. The Project would not include new sources of light or glare with these improvements. The Project would have no impact in this area.

4.1.4 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 California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California DOC manages an interactive website, the California Important Farmland Finder. This website program identifies the Project site as being within an area of Urban and Built-Up Land with the exception of a small area south of the BWD canal where the pipeline crosses private land (DOC 2019). This area is identified by DOC as Prime Farmland. However, this area currently vacant and not being used for agricultural purposes.

This site is not identified as being under a Williamson Act contract (DOC 2016). No farming activities exist in the site as the majority of the Project area is located within the Little Avenue ROW.

The Project site is within the City of Gridley and does not contain possible forest or timber resources.

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?	☐	☐	☒	☐

The DOC identifies the Project site as Urban and Built-Up Land with a small portion of the site considered to be Prime Farmland by the DOC. Because the Project involves the replacement of underground wastewater facilities, other than the short period during construction, the Project would have no effect on the ability to use the area identified as Prime Farmland for agricultural purposes. As such, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland). The Project would have a less than significant impact in this area.

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

This site is not subject to a Williamson Act contract. There are no Williamson Act contract lands within the vicinity of the Project site. The Project would have no impact in this area.

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

The Project site is located in a developed area of the City of Gridley and is not located in a forestland protection or timber production area.

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

No identified forest lands exist on the Project site or within the vicinity 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
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?	☐	☐	☐	☒

The Project site is identified as Urban and Built-Up Land with a small area of Prime Farmland by the DOC. While existing agricultural uses surround the City, the Project is the replacement of existing wastewater

infrastructure and would not extend to those areas under existing agricultural use. No forest land exists within the Project vicinity. The Project would have no impact in this area.

4.2.3 Mitigation Measures

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

4.3 Air Quality

The following information was provided by the Air Quality and Greenhouse Gas Assessment completed by ECORP Consulting, Inc. (2019a). These documents are included as *Appendix A* of this Initial Study.

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 Northern Sacramento Valley Air Basin (NSVAB), which encompasses the Project site, pursuant to the regulatory authority of the BCAQMD.

Northern Sacramento Valley Air Basin

The Proposed Project is 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 AMSL, 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 (SVAQEEP 2015).

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 the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are 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.

Criteria Air Pollutants

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

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

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

Source: CAPCOA 2013

Toxic Air Contaminants

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

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. The California Air Resources Board (CARB) maintains over 60 monitoring stations throughout California. O_3, PM_{10}, and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. The Yuba City – Almond Street air quality monitoring station, located approximately 15 miles south of the development site, monitors ambient concentrations of O_3, PM_{10}, and $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and

climate and should be considered "generally" representative of ambient concentrations in the development area.

Table 4.3-2 summarizes the published data concerning O_3, $PM_{2.5}$, and PM_{10} since 2015 for each year that the monitoring data is provided.

Table 4.3-2. Summary of Ambient Air Quality Data

Pollutant Standards	2015	2016	2017
O_3 (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 1-hour concentration (ppm)	0.080	0.075	0.085
Max 8-hour concentration (ppm) (state/federal)	0.074 / 0.074	0.065 / 0.065	0.074 / 0.073
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	1 / 1	0 / 0	2 / 2
PM_{10} (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m^3) (state/federal)	67.2 / 68.2	51.7 / 51.4	145.5 / 145.0
Number of days above 24-hour standard (state/federal)	6.0 / 0.0	1.0 / 0.0	19.3 / 0.0
$PM_{2.5}$ (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m^3) (state/federal)	36.1 / 36.1	40.1 / 40.1	47.2 / 45.0
Number of days above federal 24-hour standard	1.1	1.0	2.4

Source: CARB 2018
µg/m^3 = micrograms per cubic meter; ppm = parts per million

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

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2017a).

Table 4.3-3. Attainment Status of Criteria Pollutants in the Butte County portion of the NSVAB

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

Source: CARB 2017a

In 1994, the air districts in the NSVAB, which includes the BCAQMD, prepared an air quality attainment plan for O_3. Updated every three years since adoption, the current *2015 Air Quality Attainment Plan* includes forecast ROG and NO_x emissions (ozone precursors) for the entire NSVAB through the year 2020. The *2015 Air Quality Attainment Plan* provides local guidance for air basins to achieve attainment of the California ambient air quality O_3 standard.

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?	☐	☐	☐	☒

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously stated, the Butte County portion of the NSVAB is classified nonattainment for the federal O_3 standard.

The *2015 Air Quality Attainment Plan* 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 (such as monitoring, modeling, permitting, etc.), 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 2015 Air Quality Attainment Plan includes forecast ROG and NO_X emissions (O_3 precursors) for the entire NSVAB through the year 2020. The plan also includes control strategies necessary to attain the California O_3 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.

Implementation of the Project would result in long-term emissions from area and mobile emission sources, which could conflict with air quality planning in the *2015 Air Quality Attainment Plan*. The consistency of the Proposed Project with the *2015 Air Quality Attainment Plan* is determined by its consistency with air pollutant emission projections in the plan. The *2015 Air Quality Attainment Plan* addresses growth by projecting the growth in emissions based on different indicators. For example, population forecasts adopted by local governments are used to forecast population-related emissions. Through the planning process, emission growth is offset by basin-wide controls on stationary, area, and transportation sources of air pollution. In other words, the plans and control measures in the *Air Quality Attainment Plan* are based on information derived from projected growth in order to predict future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections for the City of Gridley are based on the City of Gridley General Plan. As such, projects in the City that propose development consistent with the growth anticipated by the City General Plan would be consistent with the Air Quality Attainment Plan.

The Proposed Project does not conflict with any of the land use assumptions in the City General Plan. Specifically, the Project does not propose to amend the General Plan, 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 *2015 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 will not require daily visits. As such, the Proposed Project would have *no impact* regarding a conflict with or obstruction to the implementation of the applicable air quality plan.

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

The significance criteria established by the applicable air quality management or air pollution control district (BCAQMD) may be relied upon to make the above 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 4.3-4*.

Table 4.3-4. BCAQMD Regional Significance Thresholds

Air Pollutant	Construction Activities		Operations
	Pounds per Day	Tons per Year	Pound per Day
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

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 cumulatively considerable.

Construction Impacts

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive particulate matter emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects based on typical construction requirements. As previously described, construction is anticipated to last 100 days. Emissions modeling accounts for the demolition and hauling of 187 tons of debris that would be generated when trenching within the paved ROW, as well as the export of 800 cubic yards of soil material generated during excavation in the proposed trench zone. Emissions modeling also accounts for the import of 800 cubic yards of new pipe bedding material. See *Appendix A* for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in *Table 4.3-5*. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the BCAQMD's thresholds of significance.

Table 4.3-5. Construction-Related Emissions

Construction Year	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Pounds per Day						
Project Construction	2.36	22.52	20.33	0.03	1.47	1.09
BCAQMD Daily Significance Threshold	*137*	*137*	-	-	*80*	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Tons per Year						
Project Construction	0.1	0.8	0.7	0.0	0.1	0.0
BCAQMD Annual Significance Threshold	*4.5*	*4.5*	-	-	-	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs.
Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris.

As shown in *Table 2-5*, emissions generated during Project construction would not exceed the BCAQMD's regional thresholds of significance and therefore, the Project would have a *less than significant* impact during construction.

Operational Impacts

Operational emissions impacts are long-term air emissions impacts that are associated with any changes in permanent use of the Project site by onsite stationary and offsite mobile sources that substantially increase emissions. The Project proposes improvements to the underground sewer infrastructure and by its very nature, would not generate quantifiable air quality emissions from Project operations. The Project would not change the permanent use of the Project site or contribute to on or offsite emissions. While the Project does propose the use of a back-up generator for use during emergency power outages, its use would be rare, intermittent, and short term, resulting in a negligible amount of pollutant emissions. The Project does not propose any buildings and therefore no permanent source or stationary source emissions. Once the Project is completed, there would be no resultant increase in automobile trips to the area because the pipeline would not require daily visits. No long-term operational emission impacts would occur as a result of the Project.

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?	☐	☐	☒	☐

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 include adjacent single-family homes.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of diesel particulate matter (DPM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; application of architectural coatings; and other miscellaneous activities. For construction activity, DPM is the primary TAC of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by the CARB in 1998. The potential cancer risk from the inhalation of DPM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Accordingly, DPM is the focus of this discussion.

Based on the emission modeling conducted, the maximum construction-related annual emissions of $PM_{2.5}$ exhaust, considered a surrogate for DPM, would be 0.99 pound per day (see *Appendix A*). ($PM_{2.5}$ is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter [i.e., $PM_{2.5}$], according to CARB. Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles.) Furthermore, even during the most intense month of construction, emissions of DPM would be generated from different locations on the linear Project site, rather than a single location, because different types of construction activities (e.g., demolition, site preparation, paving) would not occur at the same place at the same time.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment , health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-, 30-, or 9-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Proposed Project. Consequently, an important consideration is the fact that construction of the Proposed Project is anticipated to last approximately 100 days (±3 months), which is far less than the minimum duration of exposure from which to calculate health risk (9 years), and that on a day-to-day basis construction activity generally spans eight hours as opposed to throughout the entire day.

Therefore, considering the relatively low mass of DPM emissions that would be generated during even the most intense season of construction and the relatively short duration of construction activities (100 days)

required to implement the Project, construction-related TAC emissions would not expose sensitive receptors to substantial amounts of air toxics.

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. Therefore, the Project would not be a source of TACs and there would be no impact as a result of the Project during operations. While the Project does propose the use of a back-up generator for use during emergency power outages, a potential source of DPM emissions, its use would be rare, intermittent, and short term, resulting in a negligible amount of TAC emissions.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Project vicinity have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The analysis prepared for CO attainment in the South Coast Air Quality Management District (SCAQMD) 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) in Los Angeles County can be used to demonstrate the potential for CO exceedances. The SCAQMD CO hot spot analysis was conducted for four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the level of service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be level of service (LOS) E at peak morning traffic and LOS F at peak afternoon traffic (LOS E and F are the two least efficient traffic LOS ratings). Even with the inefficient LOS and volume of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992).

The Project is not anticipated to generate any trips. Because the Proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, there is no likelihood of the Project traffic exceeding CO values.

The Project would not be a substantial source of TACs and there would be a less than significant impact as a result of the Project during construction or operation.

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?	☐	☐	☒	☐

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

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

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

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

Implementation of the Proposed Project would not result in the introduction of any new processes that are considered to have a high odor-generation potential. The Project would have a *less than significant* impact in this area.

4.3.3 Mitigation Measures

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

4.4 Biological Resources

The following information was provided by the Biological Resource Assessment (BRA) completed by ECORP Consulting, Inc. (2019b). This document is included as *Appendix B* of this Initial Study.

4.4.1 Environmental Setting

The Project site consists of approximately ½-mile segment of Little Avenue located in the City of Gridley. The existing pipeline alignment is located along Little Avenue between Oregon Street on the west and Vermont Street on the east. It then continues east along a private road, beneath the BWD irrigation canal, and to an open field in the southern part of the City of Gridley. The approximate center of the site is located within the Butte Creek Watershed (Hydrologic Unit Code #18020158) (NRCS 2019).

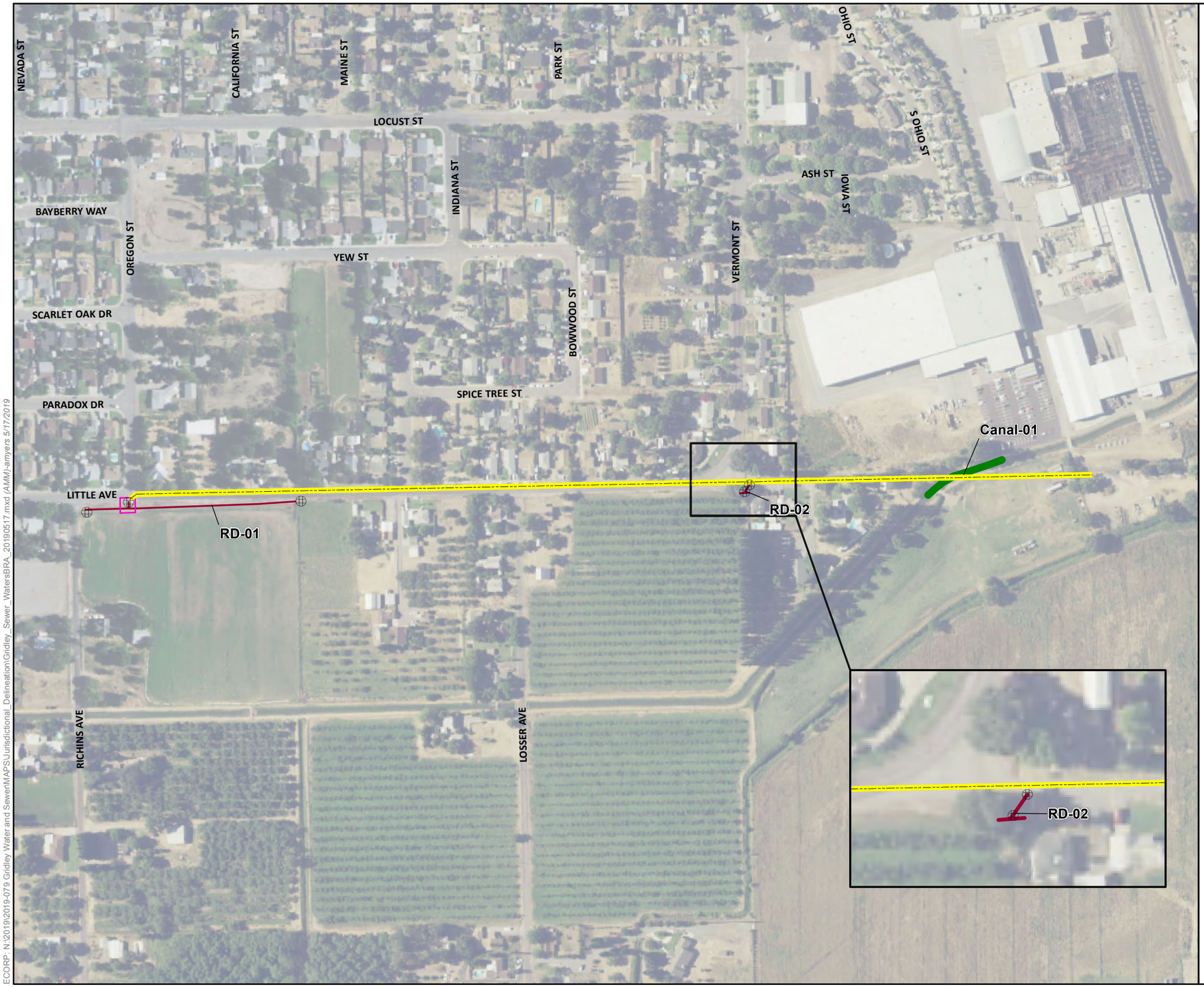
Site Vegetation

The westernmost approximately 500 feet of the project alignment along Little Avenue is abutted to the south by an ephemeral, grass-lined roadside ditch. Small agricultural fields and residential landscaping dominate the land cover for approximately 1,700 feet as the alignment proceeds eastward. The easternmost approximately 700 feet of the alignment crosses industrial and horse properties, the BWD irrigation canal, and terminates in an agricultural field/pasture.

At the time of the field survey, the agricultural field to the south of Little Avenue was dominated by wild oats (*Avena fatua*), soft brome (*Bromus hordeaceus*), filaree (*Erodium botrys*), and ripgut brome (*Bromus diandrus*) offsite south of Little Avenue. The easternmost pasture area was vegetated with nonnative grasses (primarily wild oats and Bermuda grass) and was used to park large trucks.

The roadside ditch adjacent to and south of Little Avenue was dry at the time of the field visit, but featured water plantain (*Alisma* sp.), Bermuda grass (*Cynodon dactylon*), willowherb (*Epilobium* sp.), and cheeseweed (*Malva parviflora*). Another roadside drainage ditch that appears to be tributary to a BWD irrigation canal is located at the southeast corner of Little Avenue and Vermont Street (*Figure 5. Aquatic Resources*).

Trees along Little Avenue include ornamental species (*Populus* sp., *Cedrus* sp., *Ligustrum* sp., *Nerium oleander*, *Prunus* sp.) and a few valley oaks (*Quercus lobata*). Representative photographs of the Project site can be found in *Appendix B*. A full list of plant species observed is included in *Appendix B*.



Map Features

- Sewer Line
- Pump Station
- Culvert

Aquatic Resources (0.169 acre)

- Canal - 0.120 acre
- Roadside Ditch - 0.049 acre

Base Source:NAIP 2016

ECORP: N:\2019\2019-079 Gridley Water and Sewer\MAPS\Jurisdictional_Delineation\Gridley_Sewer_WatersBRA_20190517.mxd (AMM)-amyers 5/17/2019

Map Date: 5/17/2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 5. Aquatic Resources

Little Avenue Force Main and Lift Station Improvements Project

Wildlife

Due to the urban and disturbed nature of the Project site and the fact that it is entirely encompassed by development, the Project site does not provide much habitat for wildlife species. However, wildlife observed during the survey included common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), house sparrow (*passer domesticus*), and mourning dove (*Zenaida macroura*). *Appendix B* contains a list of all wildlife species identified during the survey.

Aquatic Features

The National Wetland Inventory (NWI) identifies the BWD irrigation canal as a riverine feature (*Figure 6. National Wetland Inventory*). No other aquatic features are mapped as intersecting the project alignment.

As shown in *Figure 6.*, potential wetlands and aquatic habitat associated with Project site ditch features could be impacted by Project activities.

Biological Reconnaissance Survey

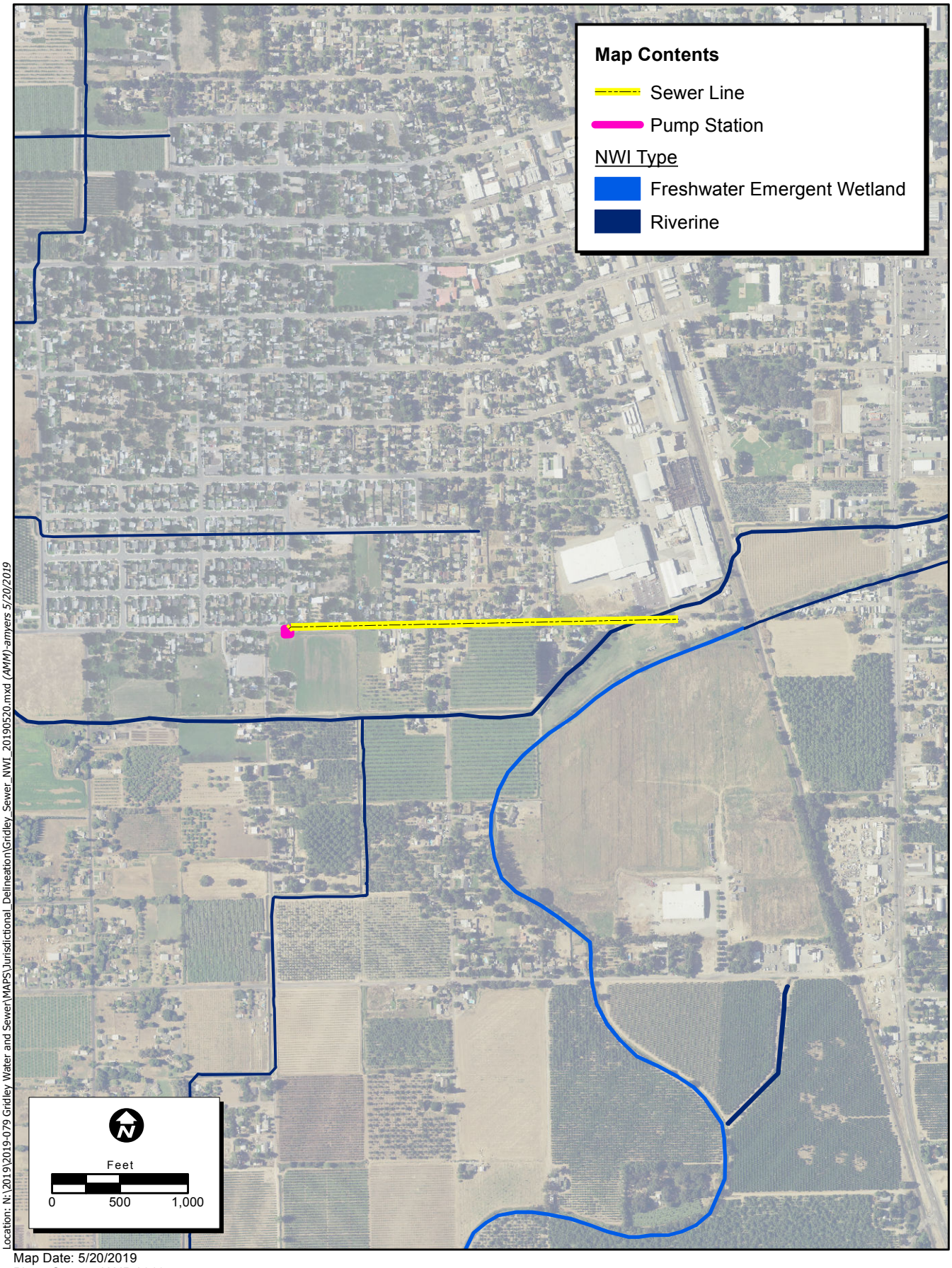
The biological reconnaissance survey was conducted on May 2, 2019 by walking parts of the Project site and driving the remainder to determine the vegetation communities and wildlife habitats on the Project site. The biologist documented the plant and animal species present on the Project site, and the Project site was assessed for the potential to provide habitat for special-status plant and wildlife species. Data were recorded on a Global Positioning System unit, field notebooks, and/or maps. Photographs were also taken during the survey to provide visual representation of the various vegetation communities within the Project site. The Project site was also examined to assess its potential to facilitate wildlife movement or function as a movement corridor for wildlife moving throughout the region. In addition, the biologist mapped the vegetation communities present on the Project site.

Plant and wildlife species, including any special-status species that were observed during the survey, were recorded. Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife nomenclature follows Society for the Study of Amphibians and Reptiles (SSAR 2019), *Check-list of North American Birds* (American Ornithologist's Union [AOU] 2016), and the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

The site was walked to identify and characterize drainage ditches and other aquatic features at and near the project site. Boundaries of potential jurisdictional features were not formally delineated.

4.4.2 Evaluation of Potentially Occurring Special-Status Species

Of the 36 species returned in the database queries for the broad nine-quad area (see *Appendix B* for the complete list), only three species have a reasonable potential to occur at or near the Project site based on current site conditions and habitat characteristics. See *Table 4.4-1. Potentially Occurring Special-Status Species.* These are Sanford's arrowhead (*Sagittaria sanfordii*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Swainson's hawk (*Buteo swainsoni*). These are discussed below.



Location: N:\2019\2019-079 Gridley Water and Sewer\MAPS\Jurisdictional_Delineation\Gridley_Sewer_NWI_20190520.mxd (AMM)-amyers 5/20/2019

Map Date: 5/20/2019
Photo Source: NAIP 2016

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 6. National Wetland Inventory

Little Avenue Force Main and
Lift Station Improvements Project

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name *Scientific Name*	Status		Habitat	Survey Period	Potential for Occurrence
Plants					
Sanford's arrowhead sagittaria sanfordi	Fed; CA: CNPS:	None None 1B.2	found in shallow marshes and freshwater swamps.	May-October	Low, Potential habitat in ditch along Little Avenue and in tributary to BWD irrigation canal (0'–2,133').
Invertebrates					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: CA:	T None	Uses elderberry shrubs (Sambucus) as the obligate host for young life stages.	-	Low: A determinate-level survey was not performed for elderberry shrubs, obligate host for valley elderberry longhorn beetle. Potential habitat at Morrison Canal crossing.
Birds					
Swainson's hawk (nesting) *Buteo swainsoni*	Fed: CA:	BCC T	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during discing/harvesting, irrigated pastures	-	Low. Although no nesting Swainson's hawks were documented during the reconnaissance, potential nesting habitat is present in large trees surrounding the Project site

Federal Designations:
(Federal Endangered Species Act, U.S. Fish and Wildlife Service [USFWS])

E: federally listed, endangered
T: federally listed, threatened
DL: federally delisted
BCC Bird of Conservation Concern

State designations:
(California Endangered Species Act, California Department of Fish and Wildlife [CDFW])

E State-listed, endangered
T: State-listed, threatened
SSC: California Species of Special Concern
FP: Fully Protected species
C: Candidate for state listing

CNPS designations:
1B: CRPR/Rare or Endangered in California and elsewhere.
2B: Plants rare, threatened, or endangered in California but more common elsewhere.
0.1: Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2: Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3: Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Source: ECORP 2019b
Notes: The table only shows those species that have a potential to be affected by the Project. For a complete list of surveyed species see *Appendix B*.

Sanford's Arrowhead

Sanford's arrowhead is a California Native Plant Society rank 1B.2 species (rare or endangered in California and elsewhere, moderately threatened in California) that is found in association with shallow freshwater marshes and swamps. It is a perennial rhizomatous herb that blooms from May through November and is known to occur at elevations ranging from sea level to 2,133 feet AMSL. This species was not observed in the roadside ditches during the May 2019 field visit. The ephemeral hydrology within these ditches is likely not suitable for Sanford's arrowhead and freshwater marsh habitat development.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is a small boring beetle listed as threatened under the federal ESA that is an obligate associate of elderberry shrubs (*Sambucus* sp.) for important stages in its life cycle. No elderberry shrubs were observed during the May 2019 reconnaissance survey, but the banks of the BWD

irrigation canal were only viewed from afar due to access constraints. As such, small elderberry shrubs could occur within distant bankside vegetation along the canal.

Swainson's Hawk

Swainson's hawk is listed as threatened under California's ESA. Although there are no nearby nesting records, large trees surrounding the Project site may provide potential nesting habitat for this species. Swainson's hawks are seasonal migrants to the Central Valley, and typically nest from March through July.

Figure 7. RD-01. Ditch along south side of Little Avenue, looking east along paved road work area

Figure 8. RD-02. View looking east showing tributary ditch feature to the BWD irrigation canal.

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?	☐	☒	☐	☐

As discussed previously, two species have a reasonable potential to occur at or near the Project site based on current site conditions and habitat characteristics. These are the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Swainson's hawk (*Buteo swainsoni*).

Elderberry shrubs supporting valley elderberry longhorn beetle may occur in the riparian vegetation near Morrison Canal. To avoid impacts to valley elderberry longhorn beetle, mitigation measure **BIO-1** has been included in this IS/MND. Implementation of mitigation measure **BIO-1** would reduce this potential impact to a less than significant level.

All native birds, and their active nests, are protected under the California Fish and Game Code and the federal Migratory Bird Treaty Act. Nesting birds could be directly killed or injured as they establish nests in areas to be open-trenched or at bore pit entry/exit locations. Nesting birds (including Swainson's hawk) could also be directly killed or injured if trees are removed or trimmed during the nesting season. To

avoid impacts to nesting birds, mitigation measures **BIO-2** and **BIO-3** have been included in this IS/MND. Implementation of mitigation measures **BIO-2** and **BIO-3** would reduce this potential impact 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) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

No creeks, streams, or rivers exist on the Project site. No riparian habitats or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the CDFW or USFWS have been identified on the Project site. 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) 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?	☐	☒	☐	☐

The NWI identifies the BWD irrigation canal as a riverine feature (*Figure 5. National Wetland Inventory*). No other aquatic features are mapped as intersecting the Project alignment. Impacts to the BWD irrigation canal will be avoided by using a directional drill to install the new pipeline beneath the canal. However, construction activities are likely to cause disturbance to the roadside ditch for the installation of the box culvert and generator pad. As shown in *Figure 5* identified as RD-01 and RD-02, potential wetlands and aquatic habitat associated with Project site ditch features could be impacted by Project activities. Depending on the nature of these activities, regulatory agency permits may be necessary to allow such impacts. To mitigate potential impacts to these resources, mitigation measures **BIO-4** and **BIO-5** have been included in this IS/MND. Implementation of mitigation measures **BIO-4** and **BIO-5** would reduce this potential impact to a less than significant level.

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?	☐	☐	☐	☒

The Project site was assessed for its ability to function as a wildlife corridor. The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include such areas as greenbelts, refuge systems, underpasses, and biogeographic land bridges, for example. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix, which connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. Corridor use and wildlife movement patterns vary greatly among species.

The Project site is very disturbed, densely populated, and surrounded by development on all sides. Therefore, it does not provide movement opportunities for mobile wildlife. The Project site is also relatively isolated from larger, contiguous blocks of native habitat. Therefore, the Project site would not be considered a linkage or corridor between conserved natural habitat areas and 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) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

The City of Gridley addresses native and ornamental trees in the 2030 General Plan and emphasizes that "a complete urban tree canopy that provides a pleasant and attractive streetscape is essential to our community's character and quality of life" (Gridley 2009). Although Gridley has no native tree ordinance, Design Policy 7.4 states that "to the extent feasible, existing mature trees and shrubs should be preserved and incorporated into the landscaping scheme. " However, the Project does not involve the removal of any trees and would not impact within the adjacent area. As such this policy does not apply. There would be no impact in this area.

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

The Project site is located within the Butte Regional Conservation Plan (BRCP). The BRCP will provide guidelines for mitigation requirements and federal and state permitting to ensure compliance with federal and state environmental laws and regulations. However, this plan has not been adopted at this time (. As such, the Project would have no impact in this area.

4.4.4 Mitigation Measures

BIO-1: Valley Elderberry Longhorn Beetle Avoidance. A qualified biologist shall be consulted to ensure that the directional bore (beneath the BWD irrigation canal) entry and exit pits are located to avoid impacts to elderberry shrubs. Elderberry plants present in the Project area shall be avoided by project activities.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-2: Nesting Bird Work Window. Complete all ground-disturbing and vegetation-disturbing work during the non-nesting season to avoid impacts to nesting birds, which generally corresponds to the period September 1 through January 31.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-3: Nesting Bird Pre-construction Surveys. If it is not feasible to implement mitigation measure **BIO-2**, a qualified biologist shall survey all areas to be disturbed by project construction no more than 14 days in advance of activities. Active bird nests identified during the survey effort shall be avoided until such time that the qualified biologist has determined that the nest(s) is vacant. Depending on the location of the active nest(s) the qualified biologist may establish a no-work buffer around the active nest.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-4: Minimize disturbance to Aquatic Features. Project activities shall avoid disturbance to the roadside ditch south of Little Avenue (Figure 7), and to the ditch feature that is a tributary to the BWD irrigation canal (Figure 8) to the maximum extent feasible. Prior to commencement of construction activities, the specific portions of waterways to be disturbed for installation of a box

culvert and generator pad shall be delineated by a qualified engineer. For necessary, unavoidable disturbance of aquatic features, **BIO-5** shall be implemented,

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

BIO-5: Jurisdictional Delineation and Permitting. In instances where it is not feasible to implement mitigation measure **BIO-4**, a qualified biologist should be retained to complete a formal jurisdictional delineation of the two noted ditch features to determine their regulatory statuses and requirements. Depending on the results of this delineation effort, additional permitting efforts may be required prior to completing project activities in and near these ditch features.

Timing/Implementation: *Prior to and during construction activities*

Monitoring/Enforcement: *City of Gridley*

4.5 Cultural Resources

4.5.1 Cultural Resources Inventory and Evaluation Report

A Cultural Resources Inventory and Evaluation Report was prepared by ECORP Consulting (2019c) for the Proposed Project to identify potentially eligible cultural resources (archaeological sites and historic buildings, structures, and objects) that could be affected by the Project. The information provided below is an abridged version of this report and is provided here to afford a brief context of the potential cultural resources in the Project area.

Regulatory Context

To meet the regulatory requirements of this Project, the cultural resources investigation was conducted pursuant to the provisions for the treatment of cultural resources contained within Section 106 of the National Historic Preservation Act (NHPA) and in CEQA (Public Resources Code [PRC] § 21000 et seq.) The goal of NHPA and CEQA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of a proposed project and to either avoid or mitigate those significant effects where feasible. CEQA pertains to all proposed projects that require state or local government agency approval, including the enactment of zoning ordinances, the issuance of conditional use permits, and the approval of development project maps. The NHPA pertains to projects that entail some degree of federal funding or permit approval.

The NHPA and CEQA (Title 14, California Code of Regulations [CCR], Article 5, § 15064.5) apply to cultural resources of the historical and pre-contact periods. Any project with an effect that may cause a substantial adverse change in the significance of a cultural resource, either directly or indirectly, is a project that may have a significant effect on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing on either the California Register of Historical Resources (CRHR) (PRC § 5024.1, Title 14 CCR, § 4852) or the National Register of Historic Places (NRHP) (36 Code of Federal Regulations [CFR] 60.4). Cultural resources eligible for listing on the NRHP are considered Historic

Properties under 36 CFR Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

Tribal Cultural Resources are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of § 5020.1, or are a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. Section 1(b)(4) of Assembly Bill (AB) 52 established that only California Native American tribes, as defined in Section 21073 of the California PRC, are experts in the identification of Tribal Cultural Resources and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, this report only addresses information for which ECORP is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate Tribal Cultural Resources. Should California Native American tribes ascribe additional importance to or interpretation of archaeological resources described herein, or provide information about non-archeological Tribal Cultural Resources, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and lead agency and summarized in the Tribal Cultural Resources section of the CEQA document, if applicable.

This Project is being funded in part by federal money from the CWSRF. Because the CWSRF receives at least of a portion of funding from the federal government, such projects are required to comply with federal environmental regulations. The SWRQCB, which administers the CWSRF in California, has established standards to meet both state and federal requirements and is the responsible agency for Section 106 compliance. As such, this report was prepared in compliance with requisite federal standards.

Confidentiality Restrictions

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. Under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code 5 [USC]), because the disclosure of cultural resources location information is prohibited by the Archaeological Resources Protection Act of 1979 (16 USC 470hh) and Section 304 of the NHPA, it is also exempted from disclosure under the Freedom of Information Act. 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 as an appendix in this IS/MND. While information describing the various Cultural Resources time periods is included in the IS/MND discussion, all references to location of artifacts have been removed for confidentiality and protection of these resources.

Area of Potential Affects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of the Project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the Project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to CEQA, the term Project area is used rather than APE. For the purpose of this document, the terms Project area and APE are interchangeable.

The horizontal APE consists of all areas where activities associated with the Project are proposed and in the case of the current project, equals the Project Area subject to environmental review under the National Environmental Policy Act and CEQA. This includes areas proposed for pipe replacement, backup generator installation, lift station, vegetation removal, trenching, stockpiling, staging, paving, and other elements described in the official Project description. The horizontal APE measures approximately 0.53 mile or 2,800 linear feet.

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 includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the project, depending on how deep the existing wastewater pipes are currently located. This study assumes trenching will not exceed 10 feet below surface. A review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE is described also 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. For the current project, the above-surface vertical APE is not expected to extend past the current street surface, as there are no plans to build anything above-ground.

Records Search

A records search for the APE was completed at the Northeast Information Center (NEIC) of the CHRIS at California State University-Chico on April 25, 2019 (NEIC search #W19-62;). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the proposed Project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

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); *The National Register Information System websit*e (NPS 2019); *Office of Historic Preservation, California Historical Landmarks* website (OHP 2019); *California Historical Landmarks* (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 2018); *Caltrans State Bridge Survey* (Caltrans 2019); and *Historic Spots in California* (Kyle 2002).

Other references examined include historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2019). Historic maps reviewed include:

- 1856 BLM GLO plat for Township 17 North, Range 2 East
- 1894 BLM GLO plat for Township 17 North, Range 2 East
- 1895 USGS Marysville, California topographic quadrangle (1:125,000 scale)
- 1912 USGS Gridley, California topographic quadrangle (1:31,680 scale)
- 1952 USGS Gridley, California topographic quadrangle (1:24,000 scale)
- 1952 (Photorevised 1973) USGS Gridley, California topographic quadrangle (1:24,000 scale)

Historic aerial photos taken in 1969, and subsequent aerial photos taken in 1998, 2005, 2009, 2010, 2012, and 2014 were also reviewed for any indications of property usage and built environment.

Gridley does not have a local historic register; the closest city with a Historic Resources Inventory is the City of Chico.

Sacred Lands File Coordination Methods

In addition to the record search, ECORP contacted the California Native American Heritage Commission (NAHC) on May 6, 2019 to request a search of the Sacred Lands File for the APE. This search determined whether or not Sacred Lands have been recorded by California Native American tribes within the APE, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. The NAHC failed to indicate the presence of Native American cultural resources in the Project area.

Archival Research Methods

In addition to the official records and maps for archaeological sites and surveys reviewed during the records search at the NEIC, ECORP conducted focused property-and site-specific archival research. Archival research was conducted online where primary sources such as historical newspaper articles, maps, and county recorders' records were reviewed. These records were found at online repositories that include websites such as archive.org, findagrave.com, the California Digital Newspaper Collection, the 1880 U.S. Census Records, the BLM GLO survey plats at glorecords.blm.gov, and historical topographic maps at geonames.usgs.gov. Historic-period literature such as the 1882 *History of Butte County* was also reviewed. The focused archival research resulted in sufficient information about the historic period resources in the Project Area to prepare appropriate evaluations of them. The results of the archival research are incorporated as historical context in Section 3 of this report, and into the specific discussions of resources.

Other Interested Party Consultation Methods

ECORP mailed letters to the Butte County Historical Society and the Gridley Museum on May 6, 2019 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

Field Survey

On April 25, 2019 ECORP subjected the APE to an intensive pedestrian survey under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using transects spaced 15 meters apart. ECORP expended 0.5 person-day in the field. At that time, the ground surface was examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

All cultural resources encountered during the survey were recorded using Department of Parks and Recreation (DPR) 523-series forms approved by the California OHP. The resources were photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence. Isolates were recorded with a Primary Record and Location Map, while sites were recorded with a Primary Record, Archaeological Site Record, Location Map, Sketch Map, and any other pertinent forms.

4.5.2 Environmental Setting

The Project area is located in the upper Sacramento Valley, in and around downtown Gridley, in an urban environment within paved streets and alleyways, surrounded by city residential dwellings and commercial businesses. State Highway 99 runs north-south just east of the Project Area. Elevations range from 80-100 feet above mean sea level. A man-made irrigation canal runs through the Project alignment, Morrison Slough runs adjacent to the east, southeast, and south of the Project Area, and the Feather River is located two miles east of the Project Area.

According to the Natural Resource Conservation Service (NRCS) soil website (2019), two soil types are located within the Project Area: Gridley taxadjunct loam, 0 to 2 percent slopes. Liveoak sandy loam, 0 to 2 percent slopes.

The Project Area is almost fully paved with little natural vegetation on the site. The Project area is situated in the middle of a mixed-use urban area, with both commercial buildings and residential subdivisions. The Project Area contains very little exposed ground surface, as it is almost entirely paved, with nonnative trees and ornamental shrubs planted along the streets. Short grasses and several trees exist in the very eastern portion of the alignment. The plant community within the Project Area vicinity includes landscaped lawns with decorative shrubbery and some trees, including various species of maple trees palm trees and pine trees.

Pre-Contact History

Regional

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 definitely be associated with human artifacts.

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 years BP, is sometimes referred to as the Millingstone Horizon.

In sites dating to after about 5,000 BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material.

Ethnography

When Euro-Americans first arrived in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about 1/3 of the state's native population, lived in the Central Valley. At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction. The Central area encompasses the current Project area and includes the Nisenan and Konkow.

Ethnographically, the Project area is in the territory occupied by the Penutian-speaking Nisenan and Konkow groups. Both of these groups spoke versions of a Penutian language classified as Maidu; Nisenan have also been referred to as Southern Maidu and Konkow as Northwestern Maidu based on their linguistic dispersion. As with most pre-contact populations, tribal boundaries were not static, but rather were plastic and constantly changing in part as a reflection of resource exploitation patterns or changes in socio-political relationships between groups.

Project Area History

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. In the latter part of the nineteenth century, the County land was primarily agricultural, with timber and mineral lands in the Sierra foothills. Captain Louis A. Arguello led an expedition to the region in 1820 and was 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.

The first settlement in in what would become Butte County began in 1844 when Edward A. Farwell and Thomas Fallon settled on the Farwell Grant, which encompasses the town of Chico. John Bidwell discovered gold on the Feather River two months after James Marshall'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 developed into permanent towns; others were short-lived.

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, including the Sutter Buttes, from which the County got its name. The boundaries were reconfigured within the next few months.

Gridley was one of the last of 12 townships created by the County Board of Supervisors in. The early settlement of Gridley was surrounded by dry farms of wheat, oats, and barley in the 1850s and 60s. The Oregon and California and Oregon Railroad (later Central Pacific Railroad, then Southern Pacific Railroad) completed its line from Marysville to Chico in 1870. A station was established at Gridley and the town was laid out around the station. The Gridley Hotel opened in 1872; Wells Fargo and Company opened an office in 1874, and the Gridley Steam Flouring Mills were established as a 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.

The rail stop and settlement were called Gridley after the owner of the farmland on which the town was built, a sheep farmer named George W. Gridley. 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 which 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.

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 Mormon Church, and by the early twentieth century there was large Mormon community in Gridley who 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.

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

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

The Cultural Resources Inventory determined that as a result of previous investigations by other firms, no resources were recorded within the APE. As a result of the field survey, two resources were recorded inside the Project Area: GWW-001, a segment of historic-period Little Avenue, and GWW-002, a segment of a historic-period water conveyance canal.

GWW-001: Little Avenue Segment

This historic-period resource consists of a 0.41-mile long segment of Little Avenue beginning at Oregon Street in the west and continuing east of Vermont Street until it reaches private property. This segment of the street first appears on the 1912 Gridley, California USGS topographic map. The road is paved with asphalt and painted and shows signs of multiple repairs over time. Church records from the Latter-Day Saints (LDS) colonies in Gridley indicate Little Avenue was known as North Avenue prior to 1916. Three persons with the surname Little lived in the LDS colonies.

Evaluation

This historic-period road segment dates to 1912 or before, based on a historic period map. However, archival research did not indicate that Little Avenue was important in the development of Gridley, nor within the context of road development. The historical use of roads was common in relation to the extensive ranching and farming activities in the county. Further archival research did not indicate that Little Avenue is associated with a significant historical event, nor is it important within the contexts of ranching, agriculture, or road development in Gridley, Butte County, or the Nation. As such, GWW-001 is not associated with any significant historical events and is not eligible under NRHP Criterion A or CRHR Criterion 1.

Little Avenue is not known to be associated with any person or group of people significant in history. Archival research revealed the general layout of Gridley occurred as early as 1870 and most of the roads in the city as they exist today were present by 1912. Church records from the Mormon community located south of Little Avenue indicate it was once called "North Avenue", and Fred Little and Ray Little lived on the north side of the Little Avenue west of Oregon Street prior to 1916. Fred and Ray Little were not significant historical figures. Walter G. Little, peach farmer, was not a significant historical figure in the context of roads and any modicum of historical significance they may have gained is not conveyed by the segment of road that simply bears their name. Therefore, this road does not demonstrate an association with the lives of persons significant in history and is not eligible under NRHP Criterion B or CRHR Criterion 2.

This road is currently paved and follows the same historical alignment as when originally constructed. The original road has gone through decades of maintenance and repairs, and was converted to the paved road it is today. The road as it was originally, including the years of maintenance and changes, and as it is now, does not have any significant historical associations. Its historical use, construction, improvement, and maintenance is typical among roads. It is not uniquely artistic or designed with any distinctive engineering characteristics. Therefore, this road does not embody any distinctive characteristics of a type, period, or method of road construction, nor does it possess any artistic value. In addition, no archival evidence, or physical aspect of the road indicates that it represents the work of a master road constructor or specific construction crew or company. Therefore, GWW-001 Little Avenue is not eligible under NRHP Criterion C or CRHR Criterion 3.

The information potential in historic roads lies in their alignment and route. The alignment and route of Little Avenue was recorded relatively accurately in historical topographic maps and thus the information regarding its historical route is provided in the archival record. Furthermore, this road does not possess the potential for subsurface archaeological deposits, and, accordingly, was not tested. This road does not possess the potential to yield any additional information regarding the relationship or functionality of roads or provide any information that is not already represented in the archival record. Therefore, GWW-001 (segment of Little Avenue) is not eligible under NRHP Criterion D or CRHR Criterion 4.

This road segment retains integrity of location, as it is in the same place as when originally constructed and its route has not altered to any discernable degree. It does not retain integrity of design, materials, and workmanship, as it has been altered, repaved, and maintained. It does not retain integrity of feeling and setting, as it is adjacent to urban residences and not the rural residences that once conveyed the aesthetic sense of an historic time period when ranching and agriculture was in its nascent stages in the County. The residences are modern and there is modern traffic on the road. Although it is associated with twentieth century agriculture and transportation, it does not hold any significance within this association.

Regardless of integrity, GWW-001 (segment of Little Avenue) does not meet NRHP or CRHR eligibility criteria as an individual resource, or as part of any known or suspected district.

GWW-002: Water Conveyance Canal Segment

This historic-period resource consists of a 0.6-mile-long segment of water conveyance canal that first appears on historical maps on the 1912 Gridley, California USGS topographic map. It is labeled "Canal Lateral 4" on the LDS colony map. It is part of a larger canal system that draws water from the Feather River to the east for agricultural irrigation. The canal is cobble-lined and overgrown. At the time of the survey it was empty, but the property owner who gave survey access said it flows full for a good portion of the year. It appears that the canal is kept clear of debris or blockages by the community during the dry season. The canal measures approximately 15 feet across at the top, and the cobble-lined sides slope inward to form a four- to five-foot-wide unlined gap at the bottom. There are roughly 5-10 feet of flat compacted soil that surround the canal segment on both sides.

Evaluation

This unnamed canal segment is a water conveyance facility for agricultural irrigation that draws water from the Feather River (outside the Project Area to the east). Water conveyance canals provide infrastructure essential for community development and are thus important to the communities they serve. Water supply was pivotal to the development of agriculture in California, and irrigation canals helped provide an essential water supply for the development of farming communities. For a water conveyance system such as GWW-002 to be eligible under Criterion A, it must be demonstrated that it is associated with an important event or a pattern of events, such as the development of irrigated farming in the Gridley area of the valley. Additionally, the association must be demonstrated as significant, as opposed to merely coexistent.

This segment of canal first appeared on historical maps of the area in 1912. It was likely privately constructed as part of the canal system created by the Butte County Canal Company in 1902 (exhaustive historical research did not reveal a specific date of construction or company contractor). It is now owned by the Butte Water District. It is a lateral canal. Thus, this canal segment is only a minor component of a greater system, first constructed in the early twentieth century. Although it was likely part of the first irrigation system in Gridley, it was constructed too late to be associated with the original development of irrigation districts to provide water for agriculture in the Sacramento Valley organized following passage of the Wright Act of 1887. The canal system in Gridley brought unprecedented agricultural gains and population growth to the area. However, this canal segment represents only one small portion of a larger system of like elements. This small segment itself is not individually notable and does not convey significance within this context. Therefore, canal segment GWW-002 is not associated with significant historical events and is not eligible under NRHP Criterion A or CRHR Criterion 1.

The group of people associated with the original construction of the canal system in and around Gridley were the group that formed the Butte County Canal Company in 1902. Although they spearheaded the creation of the canal system, the conceptual pioneers, builders, and engineers of this portion of the canal in particular are unknown. Further, the Butte County Canal Company is not historically significant, and any minor amount of significance they did gain is not fully conveyed by this segment of canal. There are no other indications that this portion of canal is associated with any other specific persons significant in the history of the region, county, or state. Therefore, GWW-002 is not eligible under NRHP Criterion B or CRHR Criterion 2.

The canal segment GWW-001 is of typical construction for the time period (early 1900s) and there is nothing in the construction or engineering that required a unique or revolutionary engineering technique that might make the canal eligible under this criterion. It is one of numerous small irrigation canals of similar age and construction connected to and fed by a larger system. Therefore, the GWW-002 is not eligible under NRHP Criterion C or CRHR Criterion 3.

As historic engineering structures, canals can occasionally be recognized for the important information they may yield regarding historic construction material or technologies. The canal system to which GWW-002 belongs, like many in the Central Valley, is well documented and is not a principal source of

information in this regard. There are no associated artifacts that could provide important information. Therefore, GWW-002 is not eligible under NRHP Criterion D or CRHR Criterion 4.

The canal largely retains all aspects of integrity. It remains in the original location where it was constructed, within the same type of agricultural environment, and partially still expresses the aesthetic sense of the mid to late twentieth century due to the lack of modern development in the immediate vicinity aside from several modern homes and structures. Therefore, GWW-002 retains its integrity of location, setting, and, partially, feeling. Although it has been regularly maintained, the combination of elements that create the form, plan and space still remain intact, as do the elements that were combined to create the specific configuration of the canal. It remains earthen and still expresses the physical evidence of the typical methods of early twentieth century earthen irrigation canal construction. It therefore largely retains integrity of design, materials, and workmanship. It retains association with early twentieth century agriculture and water conveyance, but holds no significance within that association.

Regardless of integrity, canal segment GWW-002 is evaluated as not eligible for the NRHP or CRHR under any criteria and is not part of any known historic district.

Conclusions

Resources GWW-001 (segment of Little Avenue) and GWW-002 (canal segment) were evaluated as not eligible for the NRHP or CRHR. Therefore, neither of these are considered Historical Resources as defined by CEQA or Historic Properties under Section 106 of the NHPA.

However, there always remains the potential for ground-disturbing activities to expose previously unrecorded historic resources. As such, mitigation measure **CUL-1** is required to reduce potential historic resource impacts to the 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?	☐	☒	☐	☐

No prehistoric/archaeological resources were identified within the APE. However, due to the presence of alluvium along Morrison Slough and the Feather River and given the likelihood of pre-contact archaeological sites to be located along perennial waterways, there exists the potential for buried pre-contact archaeological sites in the Project area. As such, mitigation measure **CUL-1** is required to reduce potential historic resource impacts to the less than significant level.

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?	☐	☒	☐	☐

No known burial sites were identified during the field survey. A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources in the Project area. Although Native American burial sites were not identified in the Project area, there is a possibility that unanticipated human remains will be encountered during ground-disturbing project-related activities. Therefore, impacts to unknown human remains would be less than significant with incorporation of mitigation measure **CUL-1**.

4.5.4 Mitigation Measures

CUL-1: If subsurface deposits believed to be cultural or human in origin are discovered during grading and construction activities, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agency and applicable landowner. The agency shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be eligible for inclusion in the National Register of Historic Places (NRHP) or California Register of Historic Places (CRHR). Work may not resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Siskiyou County Coroner (as 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 agency, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley*

4.6 Energy

4.6.1 Environmental Setting

Introduction

Energy consumption is analyzed in this Initial Study due to the potential direct and indirect environmental impacts associated with the Project. Such impacts include the depletion of nonrenewable resources (oil, natural gas, coal, etc.).

Electricity Services

The City of Gridley Electric Utility is responsible for the operation and maintenance associated with the distribution of electricity to residential and commercial customers from the City of Gridley's interconnection with Pacific Gas and Electric's (PG&E's) 60,000-volt transmission line at Gridley's Electric Substation. The City of Gridley Electric Utility oversees the delivery of wholesale power, maintains and operates the local electric distribution system, and is involved in engineering and advance-planning for improvements, replacement and expansion of the existing distribution system. The City of Gridley actively supports renewable energy, including the installation of privately-owned solar systems.

Energy Consumption

Electricity use is measured in kilowatt-hours (kWh). Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh.

The electricity consumption associated with all land uses in the City of Gridley from 2013 to 2017 is shown in *Table 4.6-1*. As indicated, the demand has slightly increased since 2013.

Table 4.6-1. Electricity Consumption in City of Gridley 2013-2017

Year	Electricity Consumption (kilowatt hours)
2017	34,747,293
2016	34,116,387
2015	33,954,674
2014	35,281,320
2013	35,362,734

Source: ECDMS 2019

Total automotive fuel consumption in Butte County from 2014 to 2018 is shown in *Table 4.6-2*. As shown, both on-road consumption and off-road consumption has increased since 2013.

Table 4.6-2. Automotive Fuel Consumption in Butte County 2013-2018

Year	On-Road Fuel Consumption (gallons)	Off-Road Fuel Consumption (gallons)
2018	80,045,514	3,220,475
2017	81,137,722	3,086,069
2016	81,366,249	2,957,646
2015	80,640,853	2,801,250
2014	80,025,377	2,656,949
2013	79,435,406	2,550,135

Source: CARB 2014

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?	☐	☐	☒	☐

This impact analysis focuses on the one source of energy that is relevant to the Proposed Project: the equipment-fuel necessary for Project construction. While the Project does propose the use of a back-up generator for use during emergency power outages, its use would be rare, intermittent and short-term. Its use would result in a negligible amount of fuel consumption. The Project also involves the installation of a lift station which would use electricity. However, the quantity of pumped wastewater would not increase beyond existing conditions as a result of the Project. Therefore, any increase of electricity would be negligible.

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 for Project construction and is calculated and compared to that consumed 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. See *Table 4.6-3*.

Table 4.16-3. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumed	Percentage Increase Countywide
Vehicular Fuel Consumption		
• Project Construction[1]	11,724 gallons	0.36%

Source: Climate Registry 2016

Notes: The Project increase construction-related fuel consumption is compared with the countywide construction-related fuel consumption in 2018, the most recent full year of data.

As shown in *Table 4.16-3*, the Project's gasoline fuel consumption during the construction period is estimated to be 11,724 gallons of fuel, which would increase the annual construction-related gasoline fuel use in the county by 0.36 percent during Project construction. As such, Project construction would have a nominal effect on local and regional energy supplies, especially over the long-term. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

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

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

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

The Proposed Project is for the implementation of sewer improvements within the City. It does not conflict with or obstruct a plan for renewable energy or energy efficiency. No impact would occur.

4.6.3 Mitigation Measures

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

4.7 Geology and Soils

4.7.1 Environmental Setting

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 (CGS 2002).

Site Geology

According to the (CGS 2016), the Project site is underlain by the Quaternary Alluvium. The geology is made up of alluvium, lake, playa, and terrace deposits; which are unconsolidated and semi-consolidated.

Site Soils

According to the NRCS through the Web Soil Survey database, the Project site is composed of three soil units: Liveoak sandy loam, 0 to 2 percent slopes, Gridley taxadjunct loam, 0 to 2 percent slopes, and Liveoak sandy clay loam, 0 to 2 percent slopes as shown in *Table 4.7-1* below. The Web Soil Survey also identifies drainage, flooding, erosion, runoff, and the linear extensibility potential for the Project soils. According to this survey, the major portion of Project soils, Gridley taxadjunct loam at 83.9 percent, is somewhat poor drained, has a high runoff potential, and has a rare potential for flooding. This soil has a slight erosion potential and a moderate linear extensibility (shrink-swell) (NRCS 2019).

Table 4.7-1. Project Area Soil Characteristics

Soil	Percentage of Site	Drainage	Flooding Frequency Class	Erosion Hazard[1]
Liveoak sandy loam, 0 to 2 percent slopes	38.4%	Moderately well drained	Very rare	Slight
Gridley taxadjunct loam, 0 to 2 percent slopes	61.6%	Somewhat poorly drained	Rare	Slight
	Runoff Potential[2]	**Linear Extensibility** (Rating)[3]	**Frost Action[4]**	
Liveoak sandy loam, 0 to 2 percent slopes	B (moderate)	0.7% (low)	None	
Gridley taxadjunct loam, 0 to 2 percent slopes	D (high)	5.4% (moderate)	None	

Source: NRCS 2019
Notes:

1. 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.
2. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation.
   Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet.
   Group B: Soils having a moderate infiltration rate when thoroughly wet.
   Group C: Soils having a slow infiltration rate when thoroughly wet.
   Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.
3. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 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.
4. 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.

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 which has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault was considered to be any fault that showed evidence of surface displacement during Quaternary time (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 2010a).

According to the DOC Data Viewer interactive mapping program, the closest earthquake faults to the Project site are the Cleveland Hill fault and the Swan Ravine fault.

The only known active fault (movement within the last 35,000 years) near the project area is the Cleveland Hill fault. The Cleveland Hill fault, located east of the Oroville and Palermo, is a Historic era fault and is approximately 11 miles northeast of Gridley. This approximately 5.5-mile-long fault ruptured on August 1, 1975, causing a 5.7 Richter magnitude earthquake felt in the City of Oroville (DWR 2007).

The Swan Ravine fault is a Late Quaternary / Quaternary era fault and is approximately 16 miles to the east of the City (CGS 2019). This fault shows evidence of displacement during the last 10,000– 100,000 years, appears to extend northward into Bidwell Canyon. Field investigations indicated that the fault zone apparently terminates in Lake Oroville (DWR 2007).

Paleontological Resources

A paleontological records search was requested from the University of California Museum of Paleontology (UCMP) on April 17, 2019. 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; 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 of 1944 and identified as an early horse[2] (UCMP 2019).

4.7.2 Geology and Soils (VII) Environmental Checklist and Discussion

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

i) The Proposed Project site is not located within an Alquist-Priolo Earthquake Zone (CGS 2010b, 2015). There would be no impact related to fault rupture.

ii) According to CGS's Earthquake Shaking Potential for California mapping, the Proposed Project site is located in an area which is distant from known, active faults and will experience lower levels

[2] 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.

of ground shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking in the area (CGS 2016). The Project is the replacement of sewer lines a lift station and generator. However, all new infrastructure would be required to comply with the current city code, including any required seismic mitigation standards. Because of the required compliance with seismic mitigation standards and the distance from active faults, the Proposed Project would have a less than significant impact related to strong ground shaking.

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

- Loss of bearing strength – soils liquefy and lose the ability to support structures
- Lateral spreading – soils slide down gentle slopes or toward stream banks
- Flow failures – soils move down steep slopes with large displacement
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking
- Flotation – floating of light buried structures to the surface
- Settlement – settling of ground surface as soils reconsolidate
- Subsidence – compaction of soil and sediment
- Liquefaction potential has been found to be greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. 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 2019). As such, the Proposed Project would result in less than significant impacts with regard to seismic-related ground failure, including liquefaction.

iv) 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?	☐	☐	☒	☐

As shown in *Table 4.6-1*, 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 Regional Water Quality Control Board's (RWQCB) General

Construction Storm Water Permit. Best management practices (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 *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?	☐	☐	☒	☐

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. One indicator of potential lateral expansion is frost action. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing (NRCS 2019). As indicated in *Table 4.6-1*, the Web Soil Survey identifies the Project site as having soils with no frost action potential. Additionally, as discussed in Item a) iii) above, the Project site is 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.[3] No oil, gas, or high-volume water extraction wells are known to be present in the Project area. According to the United States Geological Service (USGS), the Project site is not located in an area of land subsidence (USGS 2018). As such, the potential for impacts due to subsidence would be less than significant.

Collapse occurs when water is introduced to poorly cemented soils, resulting in the dissolution of the soil cementation and the volumetric collapse of the soil. In most cases, the soils are cemented with weak clay (argillic) sediments or soluble precipitates. This phenomenon generally occurs in granular sediments situated within arid environments. Collapsible soils will settle without any additional applied pressure when sufficient water becomes available to the soil. Water weakens or destroys bonding material between

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

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?	☐	☐	☒	☐

Expansive soils are types of soil that shrink or swell as the moisture content decreases or increases. Structures built on these soils may experience shifting, cracking, and breaking damage as soils shrink and subside or expand. Expansive soils can be determined by a soil's linear extensibility. There is a direct relationship between linear extensibility of a soil and the potential for expansive behavior, with expansive soil generally having a high linear extensibility. Thus, granular soils typically have a low potential to be expansive, whereas clay-rich soils can have a low to high potential to be expansive. The shrink-swell potential is low if the soil has a linear extensibility of less than three percent, moderate if 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. As shown in *Table 4.6-1*, linear extensibility values for the site are from 0.7 to 5.4 percent. Soils with linear extensibility in that range correlate to soils having a low to moderate expansion potential. However, the Project is the replacement of existing wastewater pipelines and a lift station. No buildings or structures are a part of the Proposed Project and the pipelines are designed to allow for some lateral movement. While the Proposed Project is located on a soil defined as having a moderate expansion potential, Project design would account for this potential and, as such, the Proposed Project would not create a substantial risk to life or property. The Project would have a less than significant impact in this area.

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

The Project does not involve the development of a septic system to process wastewater. 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)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

One known paleontological resource was identified as being found in the City of Gridley according to the UCMP (2019). Although no other paleontological resources sites were identified in the Project area, there is a possibility that unanticipated paleontological resources will be encountered during ground-disturbing project-related activities. Therefore, mitigation is required to reduce this potential impact. As such, mitigation measure GEO-1 is included to reduce impacts to unknown paleontological resources to a less than significant level.

4.7.3 Mitigation Measures

GEO-1 If paleontological or other geologically sensitive resources are identified during any phase of project development, the construction manager shall cease operation at the site of the discovery and immediately notify the City of Gridley Public Works. The City shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *City of Gridley Public Works*

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

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

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (IPCC 2014).

Table 4.8-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, 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 CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 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 CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 4.8-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years[3]

Sources: [1] EPA 2016a, [2] EPA 2016b, [3] EPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, 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.

Sources of Greenhouse Gas Emissions

In June 2017, CARB released the 2017 edition of the California GHG inventory covering calendar year 2015 emissions. In 2015, California emitted 440.4 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for approximately 37 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector (including both in-state and out-of-state sources) (19 percent) (CARB 2017b).

Emissions of CO_2 are by-products of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing carbon dioxide from the atmosphere.

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

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

The BCAQMD does not promulgate thresholds for GHG emissions; therefore, the analysis will rely on a multi-tiered approach to analyzing GHG. First, Project GHG emissions will be compared with the thresholds established in Tehama County. As with Butte County and the Project site, Tehama County is located within the NSVAB and therefore mass emission thresholds of significance developed in that county are appropriate. Furthermore, 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.

Construction Impacts

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. As previously described, construction is anticipated to last 100 days. Emissions modeling accounts for the demolition and hauling of 187 tons of debris that would be generated when trenching within the paved ROW, as well as the export of 800 cubic yards of soil material generated during excavation in the proposed trench zone. Emissions modeling also accounts for the import of 800 cubic yards of new pipe bedding material. See *Appendix A* for more information regarding the construction assumptions, including construction equipment and duration used in this analysis.

Table 4.8-2 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 4.8-2. Construction-Related Greenhouse Gas Emissions

Emission Source	Carbon Dioxide Equivalents (CO_2e) (metric tons/year)
Project Construction	119
GHG Significance Threshold	*900*
Exceed Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs.

Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris.

As shown in **Table 4.8-2**, Project construction would result in the generation of approximately 119 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. GHG emissions would remain below the annual significance threshold during Project construction. Therefore, the Project would have a *less than significant* impact regarding GHG emissions during construction.

Operations

In terms of operational GHG emissions, the Proposed Project involves the installation of a 2,872-linear foot forced main wastewater pipeline and a lift station, the relocation of one control box, and the installation of a backup generator. The Proposed Project would not include the provision of new permanent stationary or mobile sources of emissions, and therefore, by its very nature, would not generate quantifiable GHG emissions from Project operations. The Project does not propose any buildings and therefore no permanent source or stationary source emissions. Once the Project is completed, there would be no resultant increase in automobile trips to the area because the pipeline would not require daily visits. While the Project does propose the use of a back-up generator for use during emergency power outages, its use would be rare, intermittent and short-term, resulting in a negligible amount of pollutant emissions. The Project also involves the installation of a lift station, an indirect source of GHG emissions due to the use of electricity. However, the quantity of pumped wastewater would not increase beyond existing conditions as a result of the Project. Therefore, any increase of generated GHG emissions during operation would be negligible.

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?	☐	☐	☐	☒

The City of Gridley does not have an adopted GHG-reduction plan. However, State policies and standards adopted for the purpose of reducing GHG emissions include Executive Order (EO) S-3-05, AB 32, and SB 375. The quantitative goal of these regulations is to reduce GHG emissions to 1990 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Statewide plans and regulations (such as GHG emissions standards for vehicles, the Low Carbon Fuel Standard, Cap-and-Trade, and renewable energy) are being implemented at the statewide level, and compliance at a project level is not addressed. Therefore, the Proposed Project does not conflict with these plans and regulations. New construction associated with the Proposed Project would be executed in compliance with the requirements of these regulations, thereby supporting and not conflicting with these regulations. Further, as identified above, Project-generated GHG emissions would not surpass GHG significance thresholds, which were prepared to comply with California GHG reduction goals. The Proposed Project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases. The Project would have *no impact* in this area.

4.8.3 Mitigation Measures

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

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

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

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

A hazardous material is defined in Title 22, Section 662601.10, of the 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 (2019) and SWRCB (2019) lists identified no open cases of hazardous waste violations within the City of Gridley or surrounding area.

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?	☐	☐	☒	☐

The Project includes the installation of new wastewater pipelines, a lift station and backup generator. None of these uses require the routine transport, use, or disposal of hazardous materials. 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?	☐	☐	☒	☐

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

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?	☐	☐	☐	☒

The nearest public school to the Project site is the Sycamore Middle School, approximately 0.5 miles north of the Project site. None of the proposed new uses would emit any hazardous emissions. The project would have no impact in this area.

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

Under Government Code § 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC and SWRCB lists identified no open cases of hazardous waste violations on the Project site. Therefore, the Project site and the Proposed Project are not on a parcel included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 (DTSC 2019; SWRCB 2019). As a result, this would not create a significant hazard to the public or to the environment and would have no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

The nearest public airport to the Project site is the Oroville Municipal Airport, located approximately ten 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?	☐	☐	☐	☒

The Proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. The 2030 General Plan identifies SR 99 and E. Gridley Road as potential evacuation routes (Gridley 2009). The Project is not located on these two roadways and would not interfere with any emergency response or evacuation plans. Implementation of the Proposed Project would result in no impact in this area.

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

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

The City lies in an area of low wildfire risk, according to the Butte County Butte County Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan (Gridley 2009). The Project is the replacement of underground wastewater pipelines and a lift station. Implementation of the Proposed project would have no impact with regards 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

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 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 (SRWP 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 Department of Water Resources (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 this time.

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 towards the eastern foothills. The estimated storage capacity to a depth of 200 feet is approximately 3,128,959 acre-feet. Estimates of groundwater extraction for agricultural; municipal and industrial; and environmental wetland uses are 104,000, 75,500 and 1,300 acre-feet respectively. Deep percolation of applied water is estimated to be 126,000 acre-feet (DWR 2003).

Project Site Hydrology and Onsite Drainage

The Project site is located on relatively flat terrain situated at an elevational range of approximately 92 - 95 feet AMSL. Project hydrological features includes a BWD irrigation canal which the national Wetland

Inventory identifies as a riverine feature (See *Figure 5. National Wetland Inventory*). No other aquatic features are mapped as intersecting the project alignment (ECORP 2019b).

In the Project area, the rainy period of the year lasts for 8.8 months, from September 18 to June 11, with a sliding 31-day rainfall of at least 0.5 inches. The most rain falls during the 31 days centered round February 17, with an average total accumulation of 6.0 inches. The rainless period of the year lasts for 3.2 months, from June 11 to September 18. The least rain falls around July 30, with an average total accumulation of 0.0 inches (Weatherspark 2019).

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 X, meaning that the area is in the 0.2 percent annual chance (500-year) floodplain [FEMA 2011].

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

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

In accordance with National Pollutant Discharge Elimination System (NPDES) regulations, the State of California requires that any construction activity affecting one 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 to the appropriate regional board Permit Registration Documents for the Project, which include a Notice of Intent (NOI), risk assessment, site map, signed certification statement, an annual fee, and a SWPPP. The SWPPP includes pollution prevention measures (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 best management practices 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?	☐	☐	☐	☒

The Project involves the replacement of existing wastewater pipelines and a lift station. This replacement 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;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☐	☒

i) As noted, the Proposed Project would restore areas affected by pipeline construction and lift station to 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 canal. However, this

crossing would be completed using horizontal direction drilling and would not alter the canal nor any drainage patterns to or from the canal.

Further, the Project construction activities would result in soil disturbances of at least one acre of total land area. As such, an NPDES Construction General Permit would be required prior to the start of construction. Excavation and grading activities associated with the Proposed Project will reduce vegetative cover and expose bare soil surfaces making these surfaces more susceptible to erosion. To comply with the requirements of the NPDES Construction General Permit AWA will be required to file a 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 on-site erosion and sediment transport off-site. This will reduce potential runoff, erosion, and siltation associated with construction and operation of the Proposed Project. The effects of the Proposed Project on onsite and offsite erosion and siltation, therefore, would be less than significant.

ii) Implementation of the Proposed Project would not result in the increase of the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. 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 off-site.

iii) See discussion of Issues i) and ii), above. No existing or planned stormwater drainage systems occur on the site. There are curbs and gutters on portions of Little Avenue and storm drain inlets on Oregon and Indiana Street north of the Project site. However, the Proposed project would not interrupt any stormwater flowing to these drainage facilities.

Polluted runoff from the Project site during construction and operation could include sediment from soil disturbances, oil and grease from construction equipment, and gross pollutants such as trash and debris. Compliance with NPDES permit requirements would ensure that BMPs would be implemented during the construction phase to effectively minimize excessive soil erosion and sedimentation and eliminate non-stormwater discharge off-site. As required by law, BMPs would be included as part of the Proposed Project to ensure that potentially significant impacts are reduced to less than significant levels. Therefore, impacts associated with stormwater volumes and polluted runoff during the construction of the Proposed Project would be less than significant.

Activities associated with operation of the Proposed Project would not contribute to stormwater flow or polluted runoff as the Project is the replacement of an underground wastewater pipeline and lift station and stormwater runoff would not reach these facilities. Therefore, impacts during operation would be considered less than significant.

iv) FEMA flood hazard maps (Map 06007C1125E) shows that the Project site is in shaded Zone X. The Project site is not located within a 100-year flood zone and all project improvements, with the exception of the generator would be underground. 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?	☐	☐	☐	☒

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. There are no natural waterways on or near the Project site. No large bodies of water exist near the Proposed Project site. The Project site is not located within a potential tsunami or seiche inundation area. Damage due to a seiche, a seismic-induced wave generated in a restricted body of water would not occur.

According to the 2030 General Plan, the City of Gridley 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.

Based on the discussion above, the Project would not result in the release of pollutants. There would be no impact in this area.

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

The Project site is located within the Butte County Groundwater Management Plan (Butte County 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 City of Gridley General Plan identifies the 2,870-foot-long site Project as being within the Residential, Low Density (RLD), Residential, Very Low Density (RVLD), and Industrial (M) land use designations.

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?	☐	☐	☐	☒

The Proposed Project consists of the replacement of existing wastewater distribution system. The majority of the proposed pipeline alignment would be within the Little Avenue right-of-way, with the exception of 670 feet which will occur within the City's utility easement on private land and a section that crosses under an irrigation canal of the Butte Water District. Replacing the existing pipeline within a 5 feet deep and 3 feet wide-foot trench would not divide any existing communities in the area. The Proposed 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)	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?	☐	☐	☐	☒

The Proposed Project consists of the replacement of existing wastewater distribution system. The majority of the proposed pipeline alignment would be within the Little Avenue right-of-way, with the exception of 670 feet which will occur within the City's utility easement on private land and a section that crosses under an irrigation canal of the Butte Water District. No rezoning or General Plan amendments area required for the Proposed Project. The Proposed Project would not conflict with any applicable land use plan, policy or regulation. As such, the proposed Project would have no impact in this area.

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

Neither the City'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 (Gridley 2009; DMR 2019).

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?	☐	☐	☐	☒

As discussed above, neither the City nor DMR 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?	☐	☐	☐	☒

The Project site is not identified as a mineral resource recovery site by the City 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

4.13.1 Environmental Setting

Noise Fundamentals

The following information was obtained from the Noise Impact Assessment performed by ECORP Consulting, Inc. for the Little Avenue Lift Station and Forced Main Replacement Project in June 2019 (ECORP 2019d). Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL).

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. 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 decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

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 for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often

referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. 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 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is 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, while a solid wall or berm generally reduces noise levels by 10 to 20 dBA. However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater. 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 homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Sensitive Noise Receptors

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

The nearest sensitive receptors to the Project site include adjacent single-family homes.

Existing Ambient Noise Environment

The noise environment in the Proposed Project area in impacted by various noise sources. The primary sources of noise in the Gridley Planning Area include State Route (SR 99) and other roadways, industrial operations, agricultural activities, and railroad operations. No airports are located in the Gridley vicinity. The Project site is located outside of any airport land use plan. Furthermore, the Project site is located beyond two miles from any airport.

Vibration Sources and Characteristics

Table 4.13-1 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 4.13-1. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Human Reaction	Effect on Buildings
0.006–0.019	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2004

Regulatory Framework

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 (Gridley 2009).

City of Gridley Municipal Code

The City does not promulgate 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 (Gridley 2017). 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.

4.13.2 Noise (XIII.) Environmental Checklist and Discussion

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

ECORP Consulting Inc., predicted construction noise levels by utilizing the Federal Highway Administration's Roadway Construction Model. It should be noted that it is challenging to specify noise levels that are generally acceptable to everyone; what is annoying to one person may be unnoticed by another. Standards may be based on documented complaints in response to documented noise levels or based on studies of the ability of people to sleep, talk, or work under various noise conditions. However, all such studies recognize that individual responses vary considerably. Standards usually address the needs of the majority of the general public.

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 on-site 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., building construction, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 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 receptors in the vicinity of the construction site.

Table 4.13-2 indicates the anticipated noise levels of construction equipment. The average noise levels presented in *Table 4.13-2* are based on the quantity, type, and acoustical use factor for each type of equipment that is anticipated to be used.

Table 4.13-2. Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Maximum Noise (L_{max}) at 50 Feet (dBA)	Maximum 8-Hour Noise (L_{eq}) at 50 Feet (dBA)
Boring Machine	83.0	80.0
Crane	80.6	72.6
Dozer	81.7	77.7
Excavator	80.7	76.7
Generator	80.6	77.6
Grader	85.0	81.0
Paver	77.2	74.2
Paving Machine	89.5	82.5
Roller	80.0	73.0
Tractor	84.0	80.0
Dump Truck	76.5	72.5
Concrete Pump Truck	81.4	74.4
Welder	74.0	70.0

Source: Federal Highway Administration, Roadway Construction Noise Model (FHWA-HEP-05-054), dated January 2006.

Nearby noise-sensitive land uses consist of residences directly adjacent to the 0.5-mile long the Project site boundary. As depicted in *Table 4.13-2*, noise levels generated by individual pieces of construction equipment typically range from approximately 70.0 dBA L_{eq} to 82.5 dBA L_{eq} at 50 feet, and thus adjacent residential land uses could be exposed to temporary and intermittent noise levels beyond 82.5 dBA L_{eq} with L_{max} events even louder.

The City does not promulgate 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. Furthermore, the City of Gridley is an urban community and construction noise is generally accepted as a reality within the urban environment. Additionally, construction would occur through the Project site and would not be concentrated at one point. Therefore, noise generated during construction activities, as long as conducted within the permitted hours, would not exceed City noise standards.

During the operational phase, the Project would not generate noise audible to sensitive receptors as the Project will not include the provision of new permanent stationary or mobile sources.

Thus, the Project would have a less than significant impact in this area.

Would the Project result in		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒

Construction Impacts

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would only be 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 (pile drivers are not necessary for the completion of the Project). 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 anticipated Project construction equipment are summarized in *Table 4.13-3*.

Table 4.13-3. Vibration Source Amplitudes for Construction Equipment

Equipment Type	Peak Particle Velocity at 20 Feet (inches per second)
Large Bulldozer	0.124
Caisson Drilling	0.124
Loaded Trucks	0.106
Rock Breaker	0.115
Jackhammer	0.049
Small Bulldozer/Tractor	0.004

Source: FTA 2018

The City does not promulgate numeric thresholds pertaining to vibration associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, Caltrans sets a recommended standard of 0.2 inches per second peak particle velocity 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 to the construction site are located within 20 feet of potential construction zones. Based on the vibration levels presented in *Table 4.13-3*, ground vibration generated by heavy-duty equipment would not be anticipated to exceed approximately 0.124 inches per second peak particle velocity at 20 feet. Thus, structures at 20 feet distance would not be negatively affected. Since predicted vibration levels at the nearest structures would not exceed recommended criteria.

Operational 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 during operations.

Thus, the Project would have **no impact** in this area.

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?	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	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 two miles from any airport. The Proposed Project will not expose people residing or working in the Project area to excess airport noise levels. The Project would have **no impact** in this area.

4.13.3 Mitigation Measures

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

4.14 Population and Housing

4.14.1 Environmental Setting

According to the California Department of Finance (DOF), which provides estimated population and housing unit demographics by year throughout the State, the City's population increased 4.9 percent between 2010 and 2018, from 6,584 to 6,921. However, because of the Camp Fire disaster, the City's population increased significantly during the last two months of 2018 resulting in a January 1, 2019 population estimate of 7,844 (DOF 2019). DOF estimates that there were 2,526 total housing units in the City, and an 8.3 percent vacancy rate as of January 1, 2019 (DOF 2019). However, this vacancy rate is somewhat suspect since the City only gained 11 new housing units between 2018 and 2019 but has a population increase of 923 persons during the same time period.

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)?	☐	☐	☐	☒

The Project does not include the construction of any new homes**.** Development of the Project would not extend any roads or new public infrastructure. Therefore, direct or indirect increases in population growth would not occur as a result of the Proposed Project.

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

No persons or residences would be displaced or removed as a result of the Proposed Project, and the Project would have no impact in this area.

4.14.3 Mitigation Measures

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

4.15 Public Services

4.15.1 Environmental Setting

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from 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.

Police Services

Police protection services at the project site are provided by the Gridley-Biggs Police Department (GBPD). The Department consists of the Patrol Services, Dispatch Services, Patrol Division, and Community Support. GBPD is made up of 14 full-time sworn officers, 7 part-time sworn officers, 4 full-time Public Safety Dispatchers, 4 part-time Public Safety Dispatchers, an Animal Control Officer and several community volunteer personnel. The Department receives approximately 3,000 911 calls per year and 16,000 calls for service (Gridley 2019a). The Police Department is located at 685 Kentucky Street, approximately ½ mile north of the site.

Fire Services

Fire protection services for the Project area are provided by the Gridley Fire Department (GFD). GFD provides fire, rescue, emergency medical, public service, and hazardous materials emergency response service for the City. This includes fire prevention, pre-fire planning, emergency preparedness, firefighting, fire investigation, and code enforcement. GFD operates two components, a career staff funded jointly by the City and County, responsible for day-to-day operations and a Volunteer Company providing the necessary depth of personnel for most incidents (Gridley 2019b). GFD has two fire stations, one located at 47 East Gridley Road, approximately 3/4 mile northeast of the site and the other located at 685 Kentucky Street, approximately ½ mile north of the site.

Schools

The Gridley Unified School District (GUSD) provides public educational services within the Gridley area. The School District provides services not only within the City limits of Gridley, but also in unincorporated areas of the County near the City. GUSD has two elementary schools, a middle school, and two high schools (GUSD 2019).

Parks

The City owns and maintains seven parks, including: Manual Vierra Park (13.5 acres); Nick Daddow Park, Gridley Rotary Park, and Quota Park (totaling 4.4 acres); and Skateboard/Water Park (1.01 acres), Railroad Park, and August Boeger Park (1.9 acres). Additionally, the Butte County Fairgrounds are located in the city. There was a total of 19.8 acres of City-owned parkland (Gridley 2009).

Other Public Facilities

Other public facilities found in the project vicinity include the Gridley Branch of the Butte County Library located at 299 Spruce Street.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

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

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

The Proposed Project consists of the replacement of an existing wastewater pipeline. The proposed pipeline would be maintained by City and would not require public services beyond existing conditions. The Proposed Project would not result in an increase in population which in turn would impact public facilities. As such, the Proposed Project would not affect police protection, fire protection, schools, parks, or other public facilities. Therefore, no impact would occur.

4.15.3 Mitigation Measures

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

4.16 Recreation

4.16.1 Environmental Setting

As stated previously, the City owns and maintains seven parks with in city. Many recreational opportunities are available within these facilities including playground equipment, tennis courts, barbecue facilities, benches and tables, and baseball and softball diamonds. The City also owns and maintains Boat Launch Park which includes a boat ramp and dock, restrooms, lighting, and a fish cleaning table. It's located 10 minutes east of Gridley on East Gridley Road. The City provides sports leagues such as soccer and baseball, summer classes, a senior program and the Zebra Kindercare Program

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?	☐	☐	☐	☒

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

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

The Proposed Project would not result in the construction of recreational facilities. The Project would not require the construction or expansion of additional off-site recreational facilities. As such, the Proposed Project would have no impact in this issue area.

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 majority of the Proposed Project, approximately 1,800 feet, would be constructed in the Little Avenue ROW. The remaining 1,070 feet would be constructed in a semi-private driveway and private land. Little Avenue is bordered by single family residences to the north and rural residential and agricultural uses to the south. This roadway is identified as a minor collector road, is not part of the bicycle circulation diagram, and is not identified as a truck route in the 2030 General Plan (Gridley 2009). The City's Bicycle Plan does not indicate Little Avenue as being a part of a future bikeway in the city (Gridley 2011). The southern side of the street does not have sidewalks curbs or gutters and only a short section of the northern side of the street adjacent to the Project site has sidewalks curbs and gutters. Little Avenue does not have identified bicycle lanes.

The Proposed Project would replace aging facilities with a new wastewater pipeline and lift station. The Proposed Project is not intended to increase service capacity in the wastewater system and, as such, would not directly or indirectly result in future growth and development not served by existing facilities.

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, roadways, bicycle and pedestrian facilities?	☐	☐	☐	☒

The 2030 General Plan Circulation Element provides guidance in the City for existing and future transportation facilities. There are no exiting bicycle or public transportation facilities and limited sidewalks on or adjacent to the site. The replacement of existing wastewater facilities would not conflict

with any program, plan, ordinance, or policy addressing the circulation system in the 2030 General Plan. The Project would have no impact in this area.

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

CEQA Guidelines Section 15064.3, subdivision (b) provides criteria for analyzing transportation impacts based on a vehicle mile traveled (VMT) methodology instead of the now superseded (as of January 1, 2019) level of service (LOS) 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 corridor[4] 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."

However, Section 15064.3(b)(3) allows an agency to determine a project's transportation impact on a qualitative basis if a VMT methodology is unavailable, as is the case with the Proposed Project.

Section 15064.3(b)(3) is as follows:

> "Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate."

Additionally, Section 15064.3(c) allows an agency to use the VMT methodology immediately or defer until July 1, 2020 when the VMT methodology is required of all agencies in the state. Section 15064.3(c) is as follows:

> "The provisions of this section shall apply prospectively as described in section 15007. A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide."

[4] "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.

Because the City does not have an adopted VMT methodology at this time, for the Proposed Project, the City choses to defer to the existing LOS methodology to determine the Project's impact to City roadways.

The number of vehicle trips form the Proposed Project is based on the number of construction workers required to install the new facilities as discussed in Section 2.0 Project Description. Completion of the Proposed Project is estimated to result in a daily maximum of 20 trips[5] over an approximately 100-day construction period.

The Butte County Association of Governments (BCAG) provides traffic count information for 312 locations throughout Butte County, including locations in the City of Gridley. This is done every three years. As a part of the 2017/2018 traffic counts, BCAG included 12 locations in the City. These locations and the traffic volumes are shown in Table 4.17-1 below.

Table 4.17-1. City of Gridley 2017/2018 Traffic Volumes

Street	Location of Count	Average Daily Traffic Volume	AM Peak Hour Volume	PM Peak Hour Volume
Cherry St	W of SR 99	1,268	95	111
E Gridley Rd	E of SR 99	6,281	453	526
Jackson St	N of Magnolia St	677	60	65
Magnolia St	W of SR 99	5,806	535	610
Magnolia St	E of Jackson St	4,533	314	382
Magnolia St	W of Jackson St	4,115	294	350
Spruce St	W of SR 99	8,235	496	752
Sycamore St	W of SR 99	3,273	223	249
Sycamore St	E of Randolph Ave	3,546	218	293
W Biggs Gridley Rd	S of Spruce St	2,746	179	222
W Biggs Gridley Rd	N of Heron Landing Way	2,459	170	216
W Liberty Rd	W of SR 99	2,438	145	196

Source: BCAG 2018

Because if the grid street pattern of the city, the project site can be reached a number of different ways. As shown, the busiest streets in the city have over 2,400 vehicle per day using these streets. The addition of 10 AM and 10 PM daily trips from the Proposed Project would not substantially increase vehicle trips on the local streets to the point of exceeding the City's LOS standards. Therefore, the Proposed 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
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐

[5] A maximum of 10 construction workers to and from the project site.

The Proposed Project would construct a below-ground wastewater pipeline and lift station. No long-term modifications to roadway features are proposed as part of the Project. Traffic disruption that may occur during project construction, however, the area of impact is limited to Little Avenue and alternative routes are available in adjacent roadways. The Proposed Project would have a less than significant impact in this area.

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

The Proposed Project would construct a below-ground wastewater pipeline and lift station. No long-term modifications to roadway features are proposed as part of the Project and, therefore would not result in any long-term adverse impact on emergency access. Traffic disruption that may occur during project construction, however, the area of impact is limited to Little Avenue and alternative routes are available in adjacent roadways. Additionally, as a City project, the emergency services provided by the City will be well informed of the Project construction and appropriate measures for emergency access will be established prior to any emergency. Therefore, the Proposed Project would not result in inadequate emergency and have no impact in this area.

4.17.3 Mitigation Measures

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

4.18 Tribal Cultural Resources

4.18.1 Environmental Setting

The following information was provided by ECORP Consulting, Inc. (2019b) 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 Native Americans in the Project area.

Ethnographically, the Project Area is in the territory occupied by the Penutian-speaking Nisenan and Konkow groups. Both of these groups spoke versions of a Penutian; Nisenan have also been referred to as Southern Maidu and Konkow as Northwestern Maidu based on their linguistic dispersion. As with most pre-contact populations, tribal boundaries were not static, but rather were plastic and constantly changing in part as a reflection of resource exploitation patterns or changes in socio-political relationships between groups.

Nisenan

Nisenan were observed by early ethnographers to inhabit the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east. The

territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to a general area located within a few miles of Lake Tahoe.

As a language group, Nisenan (meaning "from among us" or "of our side") are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River. Ethnographic informants indicated that individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged. Residence was generally patrilocal, but couples actually had a choice in the matter.

At the time of contact, ethnographers identified that the basic social and economic group for the Nisenan was the family or household unit. The nuclear and/or extended family formed a corporate unit. These basic units were combined into distinct village or hamlet groups, each largely composed of consanguine relatives.

Tribelet populations of Valley Nisenan were as large as 500 persons at contact, while foothill and mountain tribelets ranged between 100 and 300 persons. It is estimated that Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles, with foothill territories tending to encompass more area than mountain territories.

Early Nisenan groups practiced seasonal migration, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were in relatively close proximity to each other.

Ethnographers noted that during most of the year, Nisenan usually lived in permanent villages located below about 2,500 feet that generally had a southern exposure, were surrounded by an open area, and were located above, but close to watercourses. The rather large uninhabited region between the 3,000-foot contour and the summit of the Sierra Nevada was considered open ground which was only used by communities living along its edge.

The first known occupation by Euro-Americans was marked by American and Hudson Bay Company fur trappers in the late 1820s establishing camps in Nisenan territories. This occupation was thought to have been peaceful.

In 1833 a deadly epidemic (probably malaria) swept through the Sacramento Valley and had a devastating effect on Nisenan populations. Entire villages were lost, and many surviving Nisenan retreated into the hills. An estimated 75 percent of their population was wiped out.

The mountain Nisenan groups encountered Europeans in their territory but were not adversely affected by the epidemics and early settlers. The discovery of gold, however, led to their territory being overrun within a matter of a few years. This dynamic led to widespread killing, destruction, and persecution of the Nisenan and their culture. The survivors were relegated to working in agriculture, logging, ranching, or domestic pursuits.

The turn of the twentieth century was fraught with deplorable conditions for the surviving Nisenan populations, marked by low educational attainment, high unemployment, poor housing and sanitation, and prevalence of alcoholism. The 1960 U.S. census reported 1,321 Native Americans resided in the counties originally held as Nisenan territory, but none had tribal affiliation. Sacramento County listed 802 Native Americans, of which only four were known descendants of the Valley Nisenan. El Dorado, Placer, Yuba, and Nevada counties had several Nisenan families in the 1970s who are descended from mountain groups and could speak the language and retained knowledge of traditional lifeways.

Despite enduring over a century of adversity and hardship, descendants of the pre-contact Nisenan exist today. They are members of modern society and some people still practiced Nisenan customs despite the old ways having been largely lost. Nisenan and other modern Native American populations participate in pan-Indian activities and celebrations. Nisenan descendants continue to be active in social movements and organizations that seek to improve the Native American situation in the dominant America culture.

Konkow

The Project area also falls within the ethnographic tribal territory of the Konkow, or Northwestern Maidu, in the Northern Sacramento Valley and surrounding foothills of the Sierra Nevada range. The Maidu, on the basis of cultural and linguistic differences, have been differentiated into three major related divisions: the Northeastern (Mountain Maidu), Northwestern (Konkow), and Southern (Nisenan).

The 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.

The Konkow were observed by early ethnographers to occupy territory immediately adjacent 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, in a climate characterized by a wet winter with occasional fog and freezing temperatures, and dry summer season. The habitat was savannah-like with grasses and oaks, and several village communities were noted: Kewsayoma'a, Yinomma'a, and Totoma'a. Most Konkow in the valley did not venture far from their homes into the neighboring territories.

The village community, the primary settlement type among the Maidu-Konkow, consisted of three to five small villages, each composed of about 35 members. Among the mountain Maidu, village communities were well defined, and based on geography. In contrast, the Konkow were dispersed throughout the valley floor along river canyons, and as a result, village communities were less concentrated or definable. In terms of permanent occupation sites, both groups preferred slightly elevated locations that provided visibility of the surrounding area and were away from the water-laden marshes and meadows. Konkow settlements along the Feather, Yuba, and American river canyons were situated high above the rivers on the ridges, or partway down the canyon side, mainly for defense purposes.

Subsistence and settlement strategies by the Konkow at the time of contact were noted by ethnographers to be similar to other groups in the region. The Konkow followed a yearly gathering cycle. They journeyed away from their winter river dwellings into the mountains during summer for hunting deer meat to dry, and into the valleys during the spring to collect grass seeds and wild rye. Their summer camps had temporary circular brush enclosures with no roof and a fireplace in the center, each of which housed three to four families and was also used for ceremonies.

Ethnographic records collected at contact indicate the Konkow were on peaceful terms with most of the surrounding tribes, but feuds were known to have occurred with the Yana to the north.

Peaceful alliances and reciprocal trade were more common than war and conflict among the Konkow based on ethnographic evidence. Konkow procured salmon, pine nuts, and shell beads from neighboring tribes. They procured abalone shells from the Wintuans, which were used for ear ornaments or necklace pendants. They also traded a form of currency of standard clam shell disk shaped bead or strings of these beads.

Contact between the Konkow 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. An outbreak of malaria in 1833, in concert with 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 declined from 8,000 in 1846 to only 900 in 1910.

In 1855, the U.S. Congress authorized treaties to set aside reservation lands for Native Americans, and as a result, some Konkow were relocated to the Nome Lackee reservation in present-day Tehama Count).

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 Chico Rancheria in Chico (Mechoopda Indians, a Konkow subgroup); the United Maidu Nation and Susanville Rancheria in Susanville; and the Greenville Rancheria in Plumas County.

4.18.2 Tribal Consultation

In addition to the record search, ECORP contacted the California Native American Heritage Commission (NAHC) on May 6, 2019 to request a search of the Sacred Lands File for the APE. The search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources in the project area.

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.

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, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

No known cultural resources or significant archaeological resources have been identified within the Project area. The site has not been identified as either a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe. However, unanticipated, and accidental discovery of California Native American tribal cultural resources are possible during project implementation, especially during excavation, and have the potential to impact unique cultural resources. As such, mitigation measure CUL-1 has been included to reduce the potential for impacts to tribal cultural resources to a less than significant level.

4.18.4 Mitigation Measures

Implement mitigation measure CUL-1.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

Water Service

Water service in the Project area is provided by the City of Gridley. The City's system has a pumping capacity of 6,280 gallons of water per minute (gpm). The City's distribution system consists of almost 40 miles of pipes that carry water from groundwater wells to Gridley's homes and businesses (Gridley 2009). The Gridley Public Works Department staff maintains the City water system from production at the well fields and storage at various reservoir sites through distribution to City water customers.

The average Gridley resident uses about 200 gallons of water per day. During the hottest months in July and August, local residents use 1000 gallons per day. A large portion of this amount is used for outdoor irrigation (Gridley 2019d).

Wastewater

The City provides wastewater collection, treatment, and disposal services within City limits. The City maintains wastewater collection lines, a treatment plant, treatment ponds, percolation ponds, and emergency storage facilities. Wastewater flows through gravity fed lines to the primary force main south of the City and is then pumped five miles along Sheldon and Richards avenues to the east. The force main crosses under the Feather River to the wastewater treatment plant (WWTP), which is located just east of the Feather River. The WWTP was originally built in 1979 and the current permitted capacity of the plant is 1.7 million gallons per day (mgd) of average dry weather flow (ADWF), while the hydraulic capacity of the plant is 2.62 mgd peak wet weather flow (PWWF) (Butte LAFCo 2010).

Storm Drainage

The City and Caltrans operate stormwater collection systems within the Gridley area. Within City limits, an underground stormwater collection system serves areas east and west of State Route 99 (SR 99). Caltrans maintains a collection system along portions of SR 99 in the City. Detention basins meter stormwater flows from developed areas of the City.

Gridley's stormwater collection system discharges to several open drainage ditches located near the perimeter of the city. These sloughs and ditches are maintained by three special districts: Reclamation District No. 833, Reclamation District No. 2056 and Drainage District No. 1. The ditches maintained by these special districts were designed to convey agricultural flows. Although the open ditches had been located outside City limits in the past, annexations have brought the ditches within City limits. The drainage from these special districts eventually flows to the Butte Sink, Sacramento River, Live Oak Slough, and the Feather River (Gridley 2009).

Solid Waste

The Butte Regional Waste Management Authority (BRWMA) regulates waste collection and recycling services in the cities of Biggs and Gridley, and in the unincorporated areas of Butte County. As shown in

Table 4.19-1, the majority of the BRWMA's solid waste is taken to the Neal Road landfill in Butte County. The Neal Road Landfill has a cease operation date of January 1, 2048

Table 4.19-1. Solid Waste Disposal Facilities Used by the Butte Regional Waste Management Authority

Destination Facility	Solid Waste Disposal (tons/year)			Landfill Information		
	2015	2016	2017	Remaining Capacity (cubic yards)	Remaining Capacity Date	Cease Operation Date
Altamont Landfill	32	34	21	65,400,000	12/31/2014	1/1/2025
Anderson Landfill Inc.	6	10	-	7,184,701	3/1/2017	12/1/2023
Forward Landfill Inc.	3	16	-	22,100,000	12/3/2012	1/1/2020
L and D Landfill	7	24	1	4,100,000	5/31/2005	1/1/2023
Neal Road Recycling and Waste Facility	68,201	78,211	88,130	20,874,970	7/1/2009	1/1/2048
North County Landfill and Recycling Center	-	78	1	35,400,000	12/31/2009	12/31/2048
Potrero Hills Landfill	4	-	173	13,872.000	1/1/2006	2/14/2048
Recology Hay Road	-	19	7	30,433,000	7/28/2010	1/1/2077
Recology Ostrom Road LF Inc.	4,620	1,399	9,085	39,223,000	6/1/2007	12/31/2066
Sacramento County Landfill	329	39	204	112,900,000	9/12/2005	1/1/2064
Western Regional Landfill	812	3	12	29,093,819	6/30/2005	1/1/2058
West Central Landfill	-	8	-	22,100,000	12/31/2012	1/1/2020
Yolo County Central Landfill	-	1	2	NA	NA	1/1/2081
Yearly Total	74,006	79,764	97,635			
Average per Resident (lbs/day)	4.4	4.9	5.8			
Average per Employee (lbs/day)	27.2	28.8	33.2			

Source: CalRecycle 2019a, 2019b, and 2019c

Electricity

The City's electric utility purchases and distributes power, maintains its distribution system, trims trees, and maintains and operates the City's street lighting system. The City serves power to most of the city boundary area, except newly annexed areas in the southwest portion of the City. Gridley has owned its electrical utility since 1910. Gridley has one of only 12 city-owned utility systems in Northern California.

Gridley does not directly generate its own power but is a member of the Northern California Power Agency (NCPA) and the Western Area Power Administration (WAPA). NCPA is a joint powers authority empowered to purchase, generate, transmit, distribute, and sell wholesale electrical energy. Members are public or publicly-owned entities, including the City and ten other municipal electric utilities, that

participate in specific projects on an elective basis. WAPA is one of four power marketing administrations within the U.S. Department of Energy.

The City has ownership interests in two generation facilities operated by the NCPA and has a long-term contract for a percentage in WAPA's base resources. The first of the NCPA interests is a two-unit geothermal generation facility in Lake County with a generation capacity of 220 megawatts (mw) of power. The City of Gridley's ownership percentage is approximately 0.34 percent, or 3,200 megawatt-hours (mwh) per year. The second NCPA facility in which the City has an ownership interest is a five-unit combustion turbine peaking project. This system has a capacity of 125 mw. This second system operates at peak usage times across NCPA member communities to insulate members from high prices of spot market power (Butte LAFCo 2010).

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, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

Water

Replacement of existing wastewater pipelines and a lift station would not result in the need for additional water supplies or expanded water facilities. The Project would have no impact in this area.

Wastewater

The Project is the replacement of existing wastewater pipelines and a lift station. The potential environmental impacts associated with the replacement of the pipeline and lift station are discussed throughout this Initial Study. No new or expanded wastewater treatment facilities are required to serve this replacement. The Project would have no impact in this area.

Storm Drainage

Replacement of existing wastewater pipelines and a lift station would not result in the need for additional storm drainage facilities. The Project would have no impact in this area.

Electric Power

Replacement of existing wastewater pipelines and a lift station would not result in the need for additional electricity supplies or expanded electrical facilities. The Project would have no impact in this area.

Natural Gas

Replacement of existing wastewater pipelines and a lift station would not result in the need for additional natural gas supplies or expanded natural gas facilities. The Project would have no impact in this area.

Telecommunications

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

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

Replacement of existing wastewater pipelines and a lift station would not result in the need for additional water supplies or expanded water facilities. 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) 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?	☐	☐	☐	☒

Implementation of the Project would not result in additional wastewater capacity as no additional demand would result for the pipeline replacement. Therefore, the Project would have no impact in this area.

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

No recycling or waste disposal would be required for operation and maintenance of the Proposed Project and therefore would not affect landfill capacity because the amount of construction debris requiring disposal would be minor and would only occur during the construction period (e.g., cardboard, wood scraps, plastic straps). 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
e)	Comply with federal, state, and local statutes and management and reduction regulations related to solid waste?	☐	☐	☒	☐

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

4.19.3 Mitigation Measures

No significant impacts were identified, 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 (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 City lies in an area of low wildfire risk, according to the Butte County Butte County Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan (Gridley 2009). The California Department of Forestry and Fire protection (CAL FIRE) has designated the Project site as not being within an area having a very high wildland fire potential (CAL FIRE 2008).

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?	☐	☐	☐	☒

The Proposed Project is not located in or near a state responsibility area 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	☐	☐	☐	☒

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
project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				

The Proposed Project is not located in or near a state responsibility area 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?	☐	☐	☐	☒

The Proposed Project is not located in or near a state responsibility area 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?	☐	☐	☐	☒

The Proposed Project is not located in or near a state responsibility area 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?	☐	☒	☐	☐

As discussed in *Sections 4.4 Biological Resources* and *4.5 Cultural Resources*, the Proposed Project would have potential impacts to these resources. However, with implementation of mitigation measures proposed in the relevant sections of this Initial Study, these potential impacts would be reduced to a level that is considered less than significant.

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

Implementation of the Proposed Project, in conjunction with other approved or pending projects in the region, has the potential to result in cumulatively considerable impacts to the physical environment. However, with implementation of mitigation measures proposed in the relevant subsections of this Initial Study, these potential impacts would be reduced to a level that is considered less than significant.

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?	☐	☐	☒	☐

The Proposed Project is the replacement of existing wastewater pipelines and a lift station. The Proposed Project would not result in direct and indirect impacts to human beings.

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5.0 COMPLIANCE WITH FEDERAL REGULATIONS

The City is seeking funding for the proposed Project under the CWSRF Program, which is partially funded through the EPA. Because of the federal nexus with the EPA, projects seeking funding through the CWSRF Program are subject to federal laws and regulations (e.g., federal "cross-cutters"). Under the CWSRF Program, SWRCB uses a project's CEQA document along with federal cross-cutting documentation in place of a NEPA document; this document is termed a "CEQA-Plus" document. This section addresses the Project's compliance with federal laws and regulations to satisfy the CEQA-Plus requirements.

5.1 Clean Air Act

General Conformity ensures that the actions taken by federal agencies do not interfere with a state's plans to attain and maintain national standards for air quality.

Established under the Clean Air Act (section 176(c)(4)), the General Conformity rule plays an important role in helping states improve air quality in those areas that do not meet the National Ambient Air Quality Standards (NAAQS). Under the General Conformity rule, federal agencies must work with state and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan. The overall purpose of the General Conformity rule is to ensure that:

- federal activities do not cause or contribute to new violations of NAAQS;
- actions do not worsen existing violations of the NAAQS; and
- attainment of the NAAQS is not delayed.

Predicted annual construction-generated emissions for the Proposed Project are summarized in *Table 5.1-1*. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the Conformity Determination thresholds.

Table 5.1-1. Construction-related Emissions (EPA Conformity Determination Analysis)

Pollutant	Federal Status (Attainment, Nonattainment, Maintenance, or Unclassified)	Nonattainment Rates (i.e., marginal, moderate, serious, severe, or extreme)	Threshold of Significance for Project Air Basin (if applicable – contact Local Air District)	Estimated Construction Emissions (Tons/Year)	Estimated Operation Emissions (Tons/Year)
Ozone (O_3)	Nonattainment	marginal	n/a	n/a	none
Carbon Monoxide (CO)	Unclassified/attainment	maintenance	4.5 tons/yr	0.7	none
Oxides of Nitrogen (NO_x)	Unclassified/attainment	-	4.5 tons/yr	0.8	none
Reactive Organic Gases (ROG)	n/a	See ozone	4.5 tons/yr	0.1	none
Volatile Organic Compounds (VOC)	n/a	See ozone	none	0.1	none
Lead (Pb)	Unclassified/attainment	-	none	0.0	none
$PM_{2.5}$	Unclassified/attainment	-	none	0.0	none
PM_{10}	Unclassified	-	none	0.1	none
Sulfur Dioxide (SO_2)	Unclassified/attainment	-	none	0.0	none

Source: CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs.

Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris

As shown in *Table 5.1-2*, projected emissions resulting from the Project fall below the EPA Conformity Determination thresholds of 100 tons per year for all pollutants. The Project would not generate emissions during operations.

Table 5.1-2. Construction-related Emissions (EPA Conformity Determination Analysis)

Construction	Pollutant (tons per year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Construction[1]	0.1	0.8	0.7	0.0	0.1	0.0
EPA Conformity Determination Thresholds (40 CFR 93.153)[2]	*100*	*100*	*100*	*100*	*100[3]*	*100[3]*
Exceed EPA Conformity Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs.

Notes: 1) Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris.

2) All criteria air pollutant thresholds are based on the region's "Marginal Nonattainment" status for ozone, "Maintenance" status for carbon monoxide, "Attainment" status for sulfur dioxide, "Moderate Nonattainment" status for PM_{10}, and "Moderate Nonattainment" status for $PM_{2.5}$.

3) The region is classified as unclassified/attainment for $PM_{2.5}$ and unclassified for PM_{10} which do not have Federal thresholds. As such, "Moderate Nonattainment" was used for the conformity determination threshold.

5.2 Coastal Barriers Resources Act

The Coastal Barrier Resources Act of 1982 designated various undeveloped coastal barriers for inclusion in the Coastal Barrier Resources System (System). Areas so designated were made ineligible for direct or indirect federal financial assistance that might support development, including flood insurance, except for emergency life-saving activities. Exceptions for certain activities, such as fish and wildlife research, are provided, and National Wildlife Refuges and other, otherwise protected areas are excluded from the System. The System includes relatively undeveloped coastal barriers along the Atlantic and Gulf coasts, as well as the Great Lakes, Puerto Rico, and the Virgin Islands. The Proposed Project is not within the System, as it is in the State of California and the System encompasses areas within the Gulf Coast, Atlantic Ocean, and the Great Lakes but not the Pacific Coast. Therefore, the Coastal Barriers Resources Act does not apply to the Project.

5.3 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) was passed by Congress to encourage coastal states to develop and implement a Coastal Zone Management Plan, or Program (CZMP). The intents of CZMPs are to: protect natural resources; manage development in high hazard areas; give development priority to coastal dependent uses; provide public access for recreation; and coordinate state and federal actions. In 1978, the federal government certified the California Coastal Management Plan, the enforceable policies of which are found in Chapter 3 of the California Coastal Act of 1976, as amended. The Project would be located in the City of Gridley, over 115 miles east of the Pacific coast. None of the Project's components would be located within the coastal zone, and the CZMA does not apply to the Project.

5.4 Endangered Species Act

The Endangered Species Act (ESA) (16 USC 1531 et seq.) and subsequent amendments establish legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA is administered by the USFWS for terrestrial species, and by the National Marine Fisheries Service (NMFS) for marine species and anadromous fish. Under the ESA, the USFWS or NMFS may designate critical habitat for listed species. Section 7 of the ESA requires federal agencies to consult with USFWS or NMFS to ensure that their actions are not likely to jeopardize listed threatened or endangered species, or cause destruction or adverse modification of critical habitat. Section 10 of the ESA requires similar consultation for non-federal applicants. As described in Section 4.4, two listed species are identified from the Project region: valley elderberry longhorn beetle and Swainson's hawk; however, mitigation measures discussed in Section 4.4 would reduce the potential impacts to a less than significant level. Therefore, the Project would not have the potential to violate the ESA.

5.5 Environmental Justice

In 1994, President Clinton issued the Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," to focus federal attention on environmental and human health conditions in minority and low-income communities. EO 12898 promotes nondiscrimination in federal programs that substantially affect human health and the environment, and it provides information access and public participation relating to these matters. This

order requires federal agencies (and state agencies receiving federal funds) to identify and address any disproportionately high or adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations. The Council on Environmental Quality (CEQ) oversees federal compliance with EO 12898. According to the CEQ environmental justice guidelines, minority populations should be identified if:

- A minority population percentage either exceeds 50 percent of the population of the affected area, or
- If the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (e.g., a governing body's jurisdiction, neighborhood census tract, or other similar unit).

Table 5.0-3 shows Year 2017 (most recently published) minority and low-income population percentages for the affected local and regional areas.

Table 5.1-3. Year 2017 Minority and Low-Income Population Percentages for the Affected Local and Regional Areas

Jurisdiction Minority	Population Percentage	Low-Income Population Percentage[1]
City of Gridley	28.6	70.6 (est.)
Butte County	18.1	61.8 (est.)

Source: U.S. Census 2017; HCD 2018

Notes: 1) Based on a Butte County 2018 medium household income of $62,600 for a 4-person household as established by HCD.

As shown, the City of Gridley does contain minority or low-income population percentages slightly higher than the greater regions in which it is located. Potential adverse impacts of the Project are limited to short-term, construction-related nuisance effects. Once completed, the Project would be beneficial to the surrounding residents by replacing sewer pipelines that are near the limit of the design lifetime. Therefore, the Project does not involve any activity that is likely to be of interest to or could have a disproportionate impact upon minority or low-income populations. There are no known Tribal Cultural Resources that are listed in, or are known to be eligible for listing in, the CRHR or local register of historical resources within the proposed Project or the ½ mile surrounding area. Therefore, the Project does not involve any activity that is likely to be of interest to or could have a disproportionate impact upon indigenous populations or tribes.

5.6 Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the contribution of federal programs to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It does not authorize the federal government to regulate the use of private land or lands not under federal jurisdiction, or in any way affect the rights of property owners. Under the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland; however, it cannot be open water or urban built-up land.

The DOC identifies the Project site as Urban and Built-Up Land with a small portion of the site considered to be Prime Farmland by the DOC. Because the Project involves the replacement of underground wastewater facilities, other than the short period during construction, the Project would have no effect on

the ability to use the area identified as Prime Farmland for agricultural purposes. As such, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

5.7 Floodplain Management

EO 13690, "The Federal Flood Risk Management Standard" (January 30, 2015) revises EO 11988, "Floodplain Management" (May 24, 1977), and directs federal agencies to take the appropriate actions to reduce risk to federal investments, specifically to "update their flood-risk reduction standards." The goal of this directive is to improve the resilience of communities and federal assets against the impacts of flooding and recognizes the risks and losses due to climate change and other threats The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps are used to determine if properties are located within Special Flood Hazard Areas. As explained in Section 4.10 (Hydrology and Water Quality), the Project is not located within a 100-year flood hazard area (FEMA 2011) and would not impede or redirect flood water flows. The Project is a wastewater pipeline replacement project and would not include the construction of any habitable structures. Therefore, no impacts related to flood hazards or flood water flows would occur.

5.8 National Historic Preservation Act

The NHPA of 1966, as amended sets forth the responsibilities that federal agencies must meet in regard to cultural resources, especially in regard to Section 106 as set forth in the regulations (36 CFR Part 800). Federal agencies must conduct the necessary studies and consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may be affected to determine if they are eligible for the NRHP (that is, whether identified resources constitute historic properties), and assess whether such historic properties would be adversely affected. Historic properties are resources listed on or eligible for listing on the NRHP (36 CFR 800.16[l][1]). A property may be listed in the NRHP if it meets criteria provided in the NRHP regulations (36 CFR 60.4). Typically, such properties must also be 50 years or older (36 CFR 60.4[d]). The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, or association and: (A) That are associated with events that have made a significant contribution to the broad patterns of our history; or (B) That are associated with the lives of persons significant in our past; or (C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or That have yielded, or may be likely to yield, information important in prehistory or history. Section 106 defines an adverse effect as an effect that alters, directly or indirectly, the qualities that make a resource eligible for listing in the NRHP (36 CFR 800.5[a][1]). Consideration must be given to the property's location, design, setting, materials, workmanship, feeling, and association, to the extent that these qualities contribute to the integrity and significance of the resource. Adverse effects may be direct and reasonably foreseeable or may be more remote in time or distance (36 CFR 8010.5[a][1]).

As discussed in Section 4.5 (Cultural Resources), the Cultural Resources Inventory and Evaluation Report completed by ECORP Consulting (2019b), analyzed the APE based on the provisions for the treatment of

cultural resources contained within Section 106 of the NHPA. A record search was conducted in order to determine the potential for the Project to adversely affect cultural resources eligible for listing on the NRHP. As part of this process, the horizontal APE consists of all areas where activities associated with the Project are proposed and in the case of the current project, equals the Project Area subject to environmental review under NEPA. This includes areas proposed for pipe replacement, back-up generator installation, lift station, vegetation removal, trenching, stockpiling, staging, paving, and other elements described in the official Project description. The horizontal APE represents the survey coverage area. It measures approximately 0.53 mile or 2,800 linear feet.

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 includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the project, depending on how deep the existing wastewater pipes are currently located. This study assumes trenching will not exceed 10 feet below surface. A review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE is described also 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. For the current project, the above-surface vertical APE is not expected to extend past the current street surface, as there are no plans to build anything above-ground.

The record search found that three previous cultural resources investigations have been conducted within ½ mile of the property, covering approximately 15 percent of the total area surrounding the property within the record search radius (Table 1). These studies failed to reveal the presence of pre-contact or historic-era resources. The previous studies were conducted between 1993 and 2002 and vary in size from nine acres to 106 acres. The results of the records search indicate that only 10 percent of the property has been previously surveyed for cultural resources, and therefore, a pedestrian survey of the APE was warranted. The records search also determined that no previously recorded pre-contact and historic-era cultural resources are located within ½ mile of the Project Area.

As a result of the field survey completed for the Cultural Resources Inventory and Evaluation Report, two resources were recorded inside the Project Area: GWW-001, a segment of historic-period Little Avenue, and GWW-002, a segment of a historic-period water conveyance canal. Resources GWW-001 (segment of Little Avenue) and GWW-002 (canal segment) were evaluated as not eligible for the NRHP or CRHR. Therefore, neither of these are considered Historical Resources as defined by Historic Properties under Section 106 of the NHPA.

5.9 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (Public Law 104-267) passed in 1976 and was amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297) and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act in 2007. The MSA, as amended, governs marine fisheries management in U.S. federal waters out to 200 nautical miles from shore and encourages "long-term biological and economic sustainability of our nation's marine fisheries." The goals of the MSA are to prevent overfishing, to rebuild overfished stocks, to increase long-term economic and

social benefits, and to ensure a safe and sustainable supply of seafood. The act is in place to protect our natural resources, to maximize the possible use of these resources, and to make sure the use of marine resources is done in a safe manner. Amendments to the 1996 MSA require the identification of Essential Fish Habitat (EFH) for federally managed species and the implementation of measures to conserve and enhance this habitat. Any project requiring federal authorization is required to complete and submit an EFH Assessment with the application and either show that no significant impacts to the essential habitat of managed species are expected or identify mitigations to reduce those impacts. Under the MSA, Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 USC § 1802(10)). The EFH provisions of the MSA offer resource managers a means to heighten consideration of fish habitat in resource management. Pursuant to section 305(b)(2), federal agencies shall consult with the NMFS regarding any action they authorize, fund, or undertake that might adversely affect EFH. The proposed Project is over 115 miles inland and would not affect any fisheries or EFH. The MSA does not apply to the Project.

5.10 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., licensed hunting of waterfowl or upland game species). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species. As described in Section 4.4 (Biological Resources), birds protected under the MBTA could nest within roadside trees and within landscape vegetation adjacent to the site. Mitigation measure **BIO-2**- Nesting Bird Work Window requires that ground-disturbing and vegetation-disturbing work be completed during the non-nesting season to avoid impacts to nesting birds. If this is determined to be infeasible, mitigation measure **BIO-3**- Nesting Bird Pre-construction Surveys requires a pre-construction survey by a qualified biologist in all areas to be disturbed by project construction no more than 14 days in advance of activities. Active bird nests identified during the survey effort shall be avoided until such time that the qualified biologist has determined that the nest(s) is vacant. Depending on the location of the active nest(s) the qualified biologist may establish a no-work buffer around the active nest. Implementation of mitigation measures **BIO-2** and **BIO-3** would ensure the Project does not violate the MBTA.

5.11 Protection of Wetlands

The purpose of EO 11990 (May 24, 1977) is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." To meet these objectives, EO 11990 requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. EO 11990 applies to: Acquisition, management, and disposition of federal lands and facilities construction and improvement projects which are undertaken, financed, or assisted by federal agencies; and federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities. As described in Section 4.4 (Biological Resources), the Proposed Project is in an urbanized environment and does not contain federally protected wetland habitats as defined by Section 404 of the Clean Water Act. Although the pipeline would be constructed to cross under a BWD

irrigation canal, potential impact to the canal will be avoided by using a horizontal directional drill to cross under the canal and therefore not affect the canal. Additionally, As shown in *Figure 5* identified as RD-01 and RD-02, potential wetlands and aquatic habitat associated with Project site ditch features could be impacted by Project activities. The Project will involve disturbance to the roadside ditch for the installation of a box culvert and generator pad. Depending on the nature of these and other activities, regulatory agency permits may be necessary to allow such impacts. To mitigate potential impacts to these resources, mitigation measures **BIO-4** and **BIO-5** have been included in this IS/MND. Implementation of mitigation measures **BIO-4 and BIO-5** would reduce this potential impact to a less than significant level.

5.12 Safe Drinking Water Act, Sole Source Aquifer Protection

The Safe Drinking Water Act of 1974 (SDWA) was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. The SDWA authorizes EPA to establish minimum standards to protect tap water and requires all owners or operators of public water systems to comply with these primary (health-related) standards. Under the SDWA, EPA also establishes minimum standards for state programs to protect underground sources of drinking water from endangerment by underground injection of fluids. The proposed Project would be located in the City of Gridley within Butte County, California. Designated sole source aquifers in California are located in Fresno County, Scotts Valley, and on the California/Mexico border, none of which would be in the vicinity of the Proposed Project (EPA 2019). Therefore, the SDWA does not apply to the Project.

5.13 Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC Section 1271 et seq.) establishes a National Wild and Scenic Rivers System for the protection of rivers with important scenic, recreational, fish and wildlife, and other values. Rivers are classified as wild, scenic, or recreational. The Act designates specific rivers for inclusion in the System and prescribes the methods and standards by which additional rivers may be added. There are no wild and scenic rivers within the vicinity of the Proposed Project. The nearest designated wild and scenic river in the National Wild and Scenic Rivers System is the Middle Fork of the Feather River, located more than 30 miles east of the City (NWSRS n.d.). Therefore, no portion of the Project is located within or near a designated wild and scenic river.

6.0 ALTERNATIVES

While an alternatives analyses is not generally required for IS/MNDs, the SWRCB's CWSRF Program requires an environmental alternative analysis for projects that have a Negative Declaration, Mitigated Negative Declaration. As such, this alternatives analysis is based on the requirements for EIRs established in CEQA Guidelines Section 15126.

The alternatives analysis consists of the following components: an overview of CEQA requirements for alternatives analysis, descriptions of the alternatives evaluated, a comparison between the anticipated environmental effects of the alternatives and those of the Proposed Project, and identification of an environmentally superior alternative.

6.1 Introduction

CEQA Requirements For Alternatives

CEQA Guidelines Section 15126 requires that a reasonable range of alternatives to a proposed project that can attain most of the basic project objectives but has the potential to reduce or eliminate significant adverse impacts of the proposed project and may be feasibly accomplished in a successful manner, considering the economic, environmental, social, and technological factors involved. An alternatives analysis must evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6(a), (d) and (e)). If certain alternatives are found to be infeasible, the analysis must explain the reasons and facts supporting that conclusion.

Section 15126.6(d) also requires that, if an alternative would cause one or more significant effects in addition to those caused by a proposed project, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. One of the alternatives analyzed must be the "No Project" alternative (CEQA Guidelines Section 15126.6(e)). The analysis must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

CEQA Guidelines Section 15126.6(e)(2) requires that the alternatives analysis identify the environmentally superior alternative. If that alternative is the No Project Alternative, the analysis shall also identify an environmentally superior alternative among the other alternatives. The environmentally superior alternative is discussed in Section 6.3.

Development of Project Alternatives

This section discusses the reasoning for selecting and rejecting alternatives. This section also summarizes the assumptions identified for the alternatives. The range of alternatives included for analysis in an EIR is governed by the "rule of reason." The primary objective is formulating potential alternatives and choosing which ones to analyze to ensure that the selection and discussion of alternatives fosters informed decision-making and informed public participation. This is accomplished by providing sufficient information to enable readers to reach conclusions themselves about such alternatives. This approach avoids assessing an unmanageable number of alternatives or analyzing alternatives that differ too little to

provide additional meaningful insights about their environmental effects. The alternatives addressed in an EIR are selected in consideration of one or more of the following factors:

- The extent to which the alternative would avoid or reduce any of the identified significant effects of the project and yet would accomplish most of the basic objectives of the project.
- The feasibility of the alternative, taking into account site suitability and surrounding existing land uses, and consistency with applicable public plans, policies, and regulations.
- The appropriateness of the alternative in contributing to a reasonable range of alternatives necessary to permit a reasoned choice.

The alternatives analyzed in this IS/MND were ultimately chosen based on each alternative's ability to feasibly attain the basic project objectives while avoiding or reducing one or more of the project's significant effects. The analysis provides readers with adequate information to compare the effectiveness of identified mitigation or significant adverse impacts and to enable readers to make decisions about the project. CEQA requires EIRs to address a reasonable range of reasonable alternatives, but not all potential alternatives.

Project Objectives

As noted above, the IS/MND includes a reasonable range of alternatives to the Project that would feasibly attain the basic Project objectives while avoiding or reducing one or more of the Project's significant effects (CEQA Guidelines Section 15126.6(a)). In identifying the range of alternatives for analysis, the Project objectives are identified below:

1) Replacement of existing wastewater pipeline lift station and add a back-up generator for the lift station.
2) Improve the existing ability of the City to convey wastewater in an area with failing infrastructure.
3) Improve the wastewater conveyance on Little Avenue in a cost effective manner with minimal disruption of service.

6.2 Alternatives Descriptions and Analysis

Alternatives Considered but Rejected as Infeasible

Alternate Site Alternative

An alternative with new wastewater conveyance facilities on an alternate site was considered but rejected for a number of reasons: an alternative location would not be sufficient in conveyance of wastewater from the affected properties, an alternative location would increase the potential for environmental impacts over the existing site as the new location would be in an area of undisturbed land, and a new location would increase the cost of implementation as new additional connection to the existing infrastructure would be necessary.

Description of Alternatives

Alternative 1: No Project

CEQA Guidelines Section 15126.6(e)(1) states that a No Project Alternative must be analyzed. Alternative 1 evaluates the environmental impacts if the Project site were to remain in its current state as an existing deteriorating wastewater pipeline. No construction would occur with this alternative and the pipeline will most likely fail at some point.

Alternative 2: Partial Pipeline Replacement Alternative

Alternative 2 would only include the replacement of the pipeline, lift station and the installation of the backup generator in Little Avenue and the semi-private driveway and not improve any pipelines to the east of the irrigation canal. The existing 4-inch and 6-inch forced main wastewater pipeline will be replaced with a 10-inch pipeline until it reaches the irrigation canal. From the irrigation canal east to the termination point would remain as a 4-inch forced main with this alternative. The length of the Alternative 2 project site would be approximately 2,300 feet as opposed to the 2,872 feet for the Proposed Project. The period of construction would be reduced because of the shorter length and no horizontal drilling under the canal would be required. Alternative 2 would remove any potential impacts to the canal and the private land east of the canal.

Analysis of Alternatives

The Project alternatives are evaluated in less detail than those of the Proposed Project, and the impacts are described in terms of difference in outcome compared with implementing the Proposed Project. *Table 6.0-1* at the end of this section provides an at-a-glance comparison of the environmental benefits and impacts of each alternative. *Table 6.0-2* compares the alternatives to the basic project objectives.

Alternative 1: No Project

Under the No Project, future development of the Proposed Project would not occur, and the wastewater infrastructure of the Project site would remain as it currently exists.

Aesthetics and Scenic Resources

The Proposed Project would not result in any significant impacts to aesthetics and scenic resources.

Alternative 1 would not result in the development of any new wastewater facilities on the site. The site would remain in its current condition and therefore Alternative 1 would not impact views of scenic resources nor substantially degrade the existing visual character or quality of the site. Also, Alternative 1 would not introduce new sources of light and glare which would affect daytime or nighttime views in the area.

Impacts to aesthetics from the Proposed Project were determined as a part of the IS/MND analysis to be less than significant with no mitigation measures necessary. However, Alternative 1 would not alter the existing aesthetics and scenic resources in any way. Therefore, Alternative 1 is considered superior to the Proposed Project with regard to impacts to aesthetics and scenic resources.

Agriculture and Forestry Resources

As discussed in Section 4.2, while a portion of the Proposed Project is located on land identified as Prime Farmland, the Project would not result in impacts to agricultural resources. The Project will cross through private land east of the irrigation canal. This area is identified as Prime Farmland by the DOC. However, the construction of the Project would not remove the ability to use the as farmland, if so desired in the future, as once construction is complete, the area will return to its pre-construction condition.

No construction would occur in Alternative 1 and any issues related to agricultural resources would remain as they currently exist and would not expand. However, although the Proposed Project would have a less than significant impact to agricultural resources, the Proposed Project would involve short-term construction in the Prime Farmland area and the use of this area during that time would be limited. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to agricultural resources.

Air Quality

As discussed in Section 4.3, the Project would generate air emissions during construction but would not exceed applicable air quality thresholds, not result in TAC impacts, and not conflict with regional air quality management planning.

Alternative 1 would not exceed any air quality thresholds as the site would remain in its existing condition and therefore no impact to air quality would occur. As such, the impacts to air quality under this alternative are less than the Proposed Project.

Biological Resources

As discussed in Section 4.4, the Proposed Project would result in potential impacts to special status species and wetlands. However, as defined in the IS/MND, mitigation measures **BIO-1** through **BIO-5** would reduce these potential impacts to a less than significant level. As no new construction or other uses are proposed with Alternative 1, this alternative would not result in impacts to biological resources beyond those currently existing. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to biological resources as the impacts to these resources would be greater with the Proposed Project than with Alternative 1.

Cultural Resources

As discussed in Section 4.5, the Proposed Project would result in potential impacts to unknown/undiscovered historical, and archaeological cultural resources. However, mitigation measure **CUL-1** would reduce these potential impacts to a less than significant level. As no new construction is proposed with Alternative 1, this alternative would not result in impacts to cultural resources. As such, the impacts to cultural resources under this alternative are less than the Proposed Project and Alternative 1 is considered superior to the Proposed Project with regard to impacts to cultural resources.

Energy

As discussed in Section 4.6, the only significant use of energy for the Proposed Project would be the equipment-fuel necessary for Project construction. It was determined 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. However, as Alternative 1 would not result in any change to existing conditions, it would not increase energy use beyond what is currently being used. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to energy.

Geology and Soils

As discussed in Section 4., the Proposed Project would result in potential impacts to unknown paleontological resources. However, as defined in the Section 4.7, mitigation measure **GEO-1** would reduce this potential impact to a less than significant level. As no new infrastructure or other uses are proposed with Alternative 1, this alternative would not result in the potential for geological, soil, or paleontological impacts. As such, the potential impacts to paleontological resources under this alternative are less than the Proposed Project and Alternative 1 Alternative 1 is considered superior to the Proposed Project with regard to impacts to geology, soils and paleontological resources.

Greenhouse Gases and Climate Change

As discussed in Section 4.8, the Proposed Project's GHG emissions were determined to be less than significant as no GHG thresholds have been established for the BCAQMD and the Project would not produce large amounts of GHG emissions.

Alternative 1 would have no change in existing conditions and therefore no increase of GHG emissions would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts from GHG and climate change.

Hazards and Hazardous Materials

As discussed in Section 4.9, the Proposed Project determined that the Project would not result in any impact from hazardous materials.

Alternative 1 is in the same location as the Proposed Project. As such, this alternative would have the same result regarding hazardous materials sites and hazards from the site. However, the Proposed Project would involve construction that could potentially expose people or the environment to hazardous materials such as an accidental hazardous material release. While, this potential is considered remote, this potential would be nonexistent with Alternative 1 as no construction would occur. As such, Alternative 1 is considered superior to the Proposed Project with regard to impacts from hazardous materials.

Hydrology and Water Quality

The Proposed Project would have a less than significant impact to hydrology and water quality.

Alternative 1 would not result in any the construction. Alternative 1 would be the continuation of a use that currently exists and would not impact hydrology and water quality beyond those already existing. As

such, Alternative 1 is considered superior to the Proposed Project with regard to impacts to hydrology and water quality.

Land Use

As with the Proposed Project, development of Alternative 1 would not result in the physical division of an established community or conflict with a habitat conservation plan or natural community conservation plan. As with the Proposed Project, Alternative 1 would not result in any changes to the zoning for the Project site and therefore would not have any potential conflicts with existing City of Gridley land use policies or regulations. As such, impacts on land use would be the same for Alternative 1 as those anticipated under the Proposed Project.

Mineral Resources

The analysis presented in Section 4.12 determined that there were no impacts to mineral resources from development of the Proposed Project. Alternative 1 would have a similar impact.

Noise

The Proposed Project will create noise during construction of the new facilities. However, 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 pm and 6:00 am 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. Therefore, noise generated during construction activities, as long as conducted within the permitted hours, would not exceed City noise standards. During the operational phase, the Project would not generate noise audible to sensitive receptors.

Because Alternative 1 would not result in changes to the existing conditions of the site, no noise impacts would occur. Overall, Alternative 1 would have less of an impact related to noise than the Proposed Project.

Population and Housing

As discussed in Section 4.14, the Proposed Project would not result in an increase in permanent population or new housing to the area and the impact is considered less than significant.

No additional development of the site would occur under Alternative 1. As such, Alternative 1 would not result in population growth. Neither the Proposed Project nor Alternative 1 would remove housing or displace persons. As such, Alternative 1 would have the same impacts to population and housing as the Proposed Project.

Public Services

Section 4.15 discussed the impacts that the proposed Project would have to Public Services. This analysis determined that implementation of the Proposed Project would result in no impacts to law enforcement, fire protection, schools, and parks and recreation.

Alternative 1 would have no increase in development. The demand for public services would be the same as it exists currently. Alternative 1 would have the same result as the Proposed Project regarding public services.

Recreation

The analysis presented in Section 4.16 determined that the Proposed Project would have no impact on local recreation facilities and would not cause deterioration or the need for expanded or new facilities.

Alternative 1 would have no increase in population in the City. The demand for recreational facilities would be the same as it exists currently. As such, continuation of the existing use for Alternative 1 would have no impact to recreation. Alternative 1 would result in the same level of impact when compared to the Proposed Project regarding recreation.

Transportation and Circulation

As discussed in Section 4.17, the Proposed Project would have a less than significant impact to transportation and circulation and result in only a short-term minimal increase in traffic during construction.

Alternative 1 would result in no increases in traffic nor increases in the demand for public transit or bicycle/pedestrian facilities. As such, Alternative 1 would have less impact and considered superior when compared to the Proposed Project regarding transportation and circulation.

Tribal Resources

As discussed in Section 4.18, the Proposed Project would result in potential impacts to unknown/undiscovered tribal resources. However, as defined in the IS/MND, mitigation measure **CUL-1** would reduce these potential impacts to a less than significant level. As no new construction is proposed with Alternative 1, this alternative would not result in impacts to cultural resources. As such, the impacts to cultural resources under this alternative are less than the Proposed Project and Alternative 1 is considered superior to the Proposed Project with regard to impacts to cultural resources.

Utilities

The Proposed Project would result in less than significant or no impacts to water, wastewater, stormwater drainage, and solid waste capacity and facilities. Alternative 1 would have no change over existing conditions. The demand for utilities would be the same as it exists currently. However, Alternative 1 would have the potential to result in impacts to the City's wastewater conveyance system as the pipeline on Little Avenue would continue to deteriorate and result in the City's inability to provide wastewater service in this area. As such, Alternative 1 would result in a greater impact when compared to the Proposed Project regarding utilities.

Wildfire

The Proposed Project site is not located in an area at risk of wildfire. The Project would have no impact in this area. As Alternative 1 is located on the same site as the Proposed Project, Alternative 1 would result in the same level of impact when compared to the Proposed Project regarding wildfires.

Alternative 2: Partial Pipeline Replacement Alternative

Alternative 2 would only include the replacement of the pipeline, lift station, and the installation of the back-up generator in Little Avenue and the semi-private driveway and not improve any pipelines to the east of the irrigation canal. The existing 4-inch and 6-inch forced main wastewater pipeline will be replaced with a 10-inch pipeline until it reaches the irrigation canal. From the irrigation canal east to the termination point would remain as a 4-inch forced main with this alternative. The length of the Alternative 2 project site would be approximately 2,300 feet as opposed to the 2,872 feet for the Proposed Project. The period of construction would be reduced because of the shorter length and no horizontal drilling under the canal would be required. Alternative 2 would remove any potential impacts to the canal and the private land east of the canal. However, this alternative may actually worsen the existing condition by creating a bottleneck and result in an overflow of the line.

Aesthetics and Scenic Resources

Section 4.1 completed for the Proposed Project determined that the Project would not result in any significant impacts to aesthetics and scenic resources.

Alternative 2 would result in temporary construction on Little Avenue. However, as with the Proposed Project, would not impact views of scenic resources nor substantially degrade the existing visual character or quality of the site. Also, Alternative 2 would not introduce new sources of light and glare which would affect daytime or nighttime views in the area. Therefore, Alternative 2 is considered similar to the Proposed Project with regard to impacts to aesthetics and scenic resources.

Agriculture and Forestry Resources

As discussed in Section 4.2, while a portion of the Proposed Project is located on land identified as Prime Farmland, the Project would not result in impacts to agricultural resources. The Project will cross through private land east of the irrigation canal. This area is identified as Prime Farmland by the DOC. However, the construction of the Project would not remove the ability to use the as farmland, if so desired in the future, as once construction is complete, the area will return to its pre-construction condition.

Alternative 2 would not result in construction on land identified as Prime Farmland and as such would have no impact in this area. However, although the Proposed Project would have a less than significant impact to agricultural resources, the Proposed Project would involve short-term construction in the Prime Farmland area and the use of this area during that time would be limited. As such, Alternative 2 is considered superior to the Proposed Project with regard to impacts to agricultural resources.

Air Quality

As discussed in Section 4.3, the Project would generate air emissions during construction but would not exceed applicable air quality thresholds, not result in TAC impacts, and not conflict with regional air quality management planning.

Because Alternative 2 would have a shorter construction period as a result of less pipeline replacement needed, similar to the Proposed Project, it would also not exceed any air quality thresholds and therefore a less than significant impact to air quality would occur. Because of less construction required for

Alternative 2 than the proposed Project, the impacts to air quality under this alternative are less than the Proposed Project.

Biological Resources

The Proposed Project would result in potential impacts to special status species and wetlands. However, as defined in the IS/MND, mitigation measures **BIO-1** through **BIO-5** would reduce these potential impacts to a less than significant level. Alternative 2 would also result in construction of at least a portion of the pipeline in the same area as the Proposed Project. As such, Alternative 2 would have similar impacts to biological resources and require mitigation.

Cultural Resources

The Proposed Project would result in potential impacts to unknown/undiscovered historical, archaeological resources. However, mitigation measure **CUL-1** would reduce these potential impacts to a less than significant level. As trenching would be required with Alternative 2, this alternative would also result in potential impacts to unknown cultural resources and require mitigation. As such, the impacts to cultural resources under this alternative are the same as the Proposed Project.

Energy

As discussed in Section 4.6, the only significant use of energy for the Proposed Project would be the equipment-fuel necessary for Project construction. It was determined 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. Alternative 2 is a smaller project with a shorter construction time that the Proposed Project. As a result, Alternative 2 would less energy use. However, an impact to energy would be if would the project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. It was determined that the Proposed Project would not. Alternative 2 would have the same result. As such, Alternate 2 is similar to the Proposed Project in the use of energy.

Geology and Soils

The Proposed Project would result in potential impacts to unknown paleontological resources. However, as defined in the Section 4.7, mitigation measure **GEO-1** would reduce this potential impact to a less than significant level. Trenching and ground penetration would also be required with Alternative 2 to install the pipelines and lift station. Therefore, similar to the Proposed Project, this alternative would also result in potential impacts to unknown paleontological resources and require mitigation. As such, the impacts to paleontological resources under this alternative are the same as the Proposed Project.

Greenhouse Gases and Climate Change

The Proposed Project's GHG emissions were determined to be less than significant as no GHG thresholds have been established for the BCAQMD and the Project would not produce large amounts of GHG emissions.

Alternative 2 would have less construction than the Proposed Project, GHG emissions from construction would be less. Alternative 2 would have the same operational GHG emissions as the Project. As such, Alternative 2 is considered superior to the Proposed Project with regard to impacts from GHG and climate change.

Hazards and Hazardous Materials

As discussed in Section 4.9, the Proposed Project determined that the Project would not result in any impact from hazardous materials.

Alternative 2 is in the same location as the Proposed Project. While Alternative 2 would have a smaller pipeline replacement area and construction period than the Proposed Project, the potential for the release of a hazardous material is the same, that of remote. As such, this alternative would have the same result regarding hazardous materials sites and hazards from the site. As such, Alternative 2 is considered the same as the Proposed Project with regard to impacts from hazardous materials.

Hydrology and Water Quality

The Proposed Project would have a less than significant impact to hydrology and water quality.

Alternative 2 would be smaller than one acre in area and therefore not require a SWPPP for the protection of water quality. However, Alternative 2 would be required to implement a Water Pollution Control Plan, with minimum BMPs during construction, which will have the same effect as a SWPPP.

As such, Alternative 2 is considered to be the same as the Proposed Project with regard to impacts to hydrology and water quality.

Land Use

As with the Proposed Project, development of Alternative 2 would not result in the physical division of an established community or conflict with a habitat conservation plan or natural community conservation plan. As with the Proposed Project, Alternative 2 would not result in any changes to the zoning for the Project site and therefore would not have any potential conflicts with existing City of Gridley land use policies or regulations. As such, impacts on land use would be the same for Alternative 2 as those anticipated under the Proposed Project.

Mineral Resources

The Initial Study determined that there were no impacts to mineral resources from development of the Proposed Project. Alternative 2 would have a similar impact.

Noise

The Proposed Project will create noise during construction of the new facilities. However, as discussed previously, noise generated during construction activities, as long as conducted within the permitted hours, would not exceed City noise standards. During the operational phase, the Project would not generate noise audible to sensitive receptors.

Alternative 2 would also be subject to Chapter 9.40, *Noise Regulation*, of the City's Municipal Code which prohibits any person from operating any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 7:00 pm and 6:00 am on weekdays and Saturdays, and anytime on Sundays. As with the Proposed Project, Alternative 2 would not have any operational noise audible to sensitive receptors. As such, Alternative 2 would have a similar result regarding noise when compared to the Proposed Project.

Population and Housing

The Proposed Project would not result in an increase in permanent population or new housing to the area and the impact is considered less than significant.

No additional development of the site would occur under Alternative 2. As such, Alternative 2 would not result in population growth. Neither the Proposed Project nor Alternative 2 would remove housing or displace persons. As such, Alternative 2 would have the same impacts to population and housing as the Proposed Project.

Public Services

Section 4.15 discussed the impacts that the proposed Project would have to Public Services. This analysis determined that implementation of the Proposed Project would result in no impacts to law enforcement, fire protection, schools, and parks and recreation.

Alternative 2 would have no increase in development. The demand for public services would be the same as it exists currently. As such, Alternative 2 would have no impact to public services. Alternative 2 would have the same result as the Proposed Project regarding public services.

Recreation

The Section 4.16 determined that the Proposed Project would have no impact on local recreation facilities and would not cause deterioration or the need for expanded or new facilities.

Alternative 2 would have no increase in population in the City. The demand for recreational facilities would be the same as it exists currently. Alternative 2 would result in the same level of impact when compared to the Proposed Project regarding recreation.

Transportation and Circulation

As discussed in Section 4.17, the Proposed Project would have a less than significant impact to transportation and circulation and result in only a short-term minimal increase in traffic during construction.

Alternative 2 would result in similar increases in traffic during construction as the Proposed Project, although, this will occur over a shorter time period. As such, Alternative 2 would have less impact when compared to the Proposed Project regarding transportation and circulation.

Tribal Resources

As discussed in Section 4.18, the Proposed Project would result in potential impacts to unknown/undiscovered tribal resources. However, as defined in the Initial Study, mitigation measure **CUL-1** would reduce these potential impacts to a less than significant level. As trenching would be required with Alternative 2, this alternative would also result in potential impacts to unknown tribal resources and require mitigation. As such, the impacts to tribal resources under this alternative are the same as the Proposed Project.

Utilities

The Proposed Project would result in less than significant or no impacts to water, wastewater, stormwater drainage, and solid waste capacity and facilities. Alternative 2 would have no change over existing conditions for water, stormwater drainage, and solid waste. However, the reduction in size from the replaced 10-inch pipeline to the non-replaced 4-inch pipeline may result in a constriction. This may in turn result in a backup of the system, an overflow into the surrounding sewer drains, and the inability for the public to use their sewer systems. As such, Alternative 2 would result in a greater impact when compared to the Proposed Project regarding utilities.

Wildfire

The Proposed Project site is not located in an area at risk of wildfire. The Project would have no impact in this area. As Alternative 2 is located on the same site as the Proposed Project, Alternative 2 would result in the same level of impact when compared to the Proposed Project regarding wildfires.

6.3 Environmentally Superior Alternative

Table 6.0-1 summarizes the potential impacts of the alternatives evaluated in this section, as compared with the potential impacts of the Proposed Project. *Table 6.0-2* identifies how well an alternative meets the Project objectives. Based on the evaluation contained in Section 6.2, Alternative 1 would have fewer adverse environmental impacts than the Proposed Project and was determined to have the fewest adverse impacts on the physical environment. However, CEQA requires that when the environmentally superior is the No Project Alternative, another alternative must be identified as the environmentally superior alternative [CEQA Guidelines section 15126.6(e)(2)].

The Proposed Project has three objectives. *Table 6.0-2* illustrates a comparison of the alternatives to the basic project objectives. As shown in this table, Alternative 1 does not meet any of the Project objectives and Alternative 2 does not meet two of the three Project objectives.

The Proposed Project's potential impacts to the physical environment could be mitigated to a less than significant level impacts. While Alternative 1 and 2 would have less or equal impact to the environment for the majority issue areas when compared to the Proposed Project, the impact to utilities would be greater. This and because Alternative 1 and 2 do not meet any or the majority of the objectives for the Project, and the Project's impacts could be mitigated to a less than significant level, the environmentally superior alternative would be the Proposed Project.

Table 6.0-1. Alternatives Impacts Comparison

Environmental Issue Area	Proposed Project Impact Finding (Mitigated)	Alternatives	
		1	2
Aesthetics and Visual Resources	Less Than Significant	-	=
Agriculture and Forestry Resources	Less Than Significant	-	-
Air Quality	Less Than Significant	-	-
Biological Resources	Less Than Significant	-	=
Cultural Resources	Less Than Significant	-	=
Energy	Less Than Significant	-	=
Geology and Soils	Less Than Significant	-	=
Greenhouse Gases and Climate Change	Less Than Significant	-	-
Hazards and Hazardous Materials	Less Than Significant	-	=
Hydrology and Water Quality	Less Than Significant	-	=
Land Use	Less Than Significant	=	=
Mineral Resources	Less Than Significant	=	=
Noise	Less Than Significant	-	=
Population and Housing	Less Than Significant	=	=
Public Services	Less Than Significant	=	=
Recreation	Less Than Significant	=	=
Transportation	Less Than Significant	-	-
Tribal Cultural Resources	Less Than Significant	-	=
Utilities	Less Than Significant	+	+
Wildfire	Less Than Significant	=	=
Overall Determination		-	-

- Impacts less than those of the proposed project
+Impacts greater than those of the proposed project
= Impacts similar to those of the proposed project, or no better or worse

Table 6.0-2. Comparison of Alternatives by Project Objectives

Objective	Alternatives	
	1	2
Replacement of existing wastewater pipeline lift station and add a backup generation for the lift station.	-	=
Improve the existing ability of the City to convey wastewater in an area with failing infrastructure.	-	-
Improve the wastewater conveyance on Little Avenue in a cost effective manner with minimal disruption of service.	-	-

= Meets project objective
- Does not meet project objective

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8.0 BIBLIOGRAPHY

[AOU]. 2016. Checklist of North American Birds, Seventh edition with Seventh Supplement.

[BCAG] Butte County Association of Governments. 2018. 2017/18 – Traffic Counts. http://www.bcag.org/Planning/Socio-Economic-Data/Traffic-Counts/index.html

[BCAQMD] Butte County Air Quality Management District. 2014. *CEQA Air Quality Handbook*.

Baldwin, B.G., G.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Eds. 2012. The Jepson Manual; Vascular Plants of California, Second Edition. Berkeley, CA, University of California Press.

Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A Cook, R.C. Dowler, C. Jones, D.J Schmidly, F.B. Stangl, Jr., R.A. Van Den Bussche, B. Wursig. 2014. Revised Checklist of North American Mammals North of Mexico. Museum of Texas Tech University.

[BRCP] Butte Regional Conservation Plan. 2019. Project Phases. http://www.buttehcp.com/Project-Phases/index.html

Butte County. 2004. Butte County Groundwater Management Plan. September 2004. https://www.buttecounty.net/waterresourceconservation/groundwatermanagementplan.

_____. 2017: Draft Update Butte County Airport Land Use Compatibility Plan https://www.buttecounty.net/dds/Meetings/ALUC/ALUC2017.

[Butte LAFCo] Butte Local Agency Formation Commission. 2010. City of Gridley Municipal Service Review and Sphere of Influence Plan. Adopted December 2, 2010. http://buttelafco.org/resources/municipal-service-reviews-and-sphere-influence-plans.

[CAL FIRE] California Department of Forestry and Fire Protection. 2008. Fire Hazard Severity Zones in LRA. Adopted May 28. 2008. http://frap.fire.ca.gov/webdata/maps/butte/fhszl_map.4.pdf

[CalRecycle] California Department of Resources Recycling and Recovery. 2019a. Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Destination/DisposalByFacility.

_____. 2019b. SWIS Facility/Site Search. https://www2.calrecycle.ca.gov/SWFacilities/Directory/.

_____. 2019c. Jurisdiction Diversion/Disposal Rate Summary. https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006.

[Caltrans] California Department of Transportation. 2019. California Scenic Highway Mapping System. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

[Caltrans] California Department of Transportation. 2002. Transportation Related Earthborne Vibrations.

———. 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*.

———. 2012. *IS/EA Annotated Outline*. http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm.

[CAPCOA] California Air Pollution Control Officers Association. 2013. Health Effects. http://www.capcoa.org/health-effects/.

[CARB] California Air Resources Board. 2005. Air Quality and Land Use Handbook

———. 2008. Climate Change Scoping Plan Appendices (Appendix F).

———. 2013. Facts about California's Sustainable Communities Plans. https://www.arb.ca.gov/cc/sb375/sacog_fact_sheet.pdf.

———. 2014. EMFAC2014 Emissions Model. https://ww3.arb.ca.gov/msei/categories.htm.

———. 2017a. State and Federal Area Designation Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

———. 2017b. California Greenhouse Gas Emission Inventory 2017 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm.

———. 2018. Air Quality Data Statistics. http://www.arb.ca.gov/adam/index.html.

[CEC] California Energy Commission. 2006. Refining Estimates of Water-Related Energy Use in California. https://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF.

CGS (California Department of Conservation, California Geological Survey). 2019. Data Viewer. https://maps.conservation.ca.gov/geologichazards/#dataviewer.

_____. 2010a. Regional Geologic Hazards and Mapping Program - Table 4 Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010. http://www.conservation.ca.gov/cgs/rghm/ap/Pages/affected.aspx.

_____. 2002. California Geomorphic Provinces. http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/note_36/Documents/note_36.pdf.

_____. 2016. Geologic Map of the California. https://cadoc.maps.arcgis.com/home/item.html?id=9eba56d981df4f839769ce9a2adc01f4.

Climate Registry. 2016. General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/.

[DOC] California Department of Conservation, Division of Land Resource Protection. 2016. Butte County Williamson Act FY 2015/2016. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa. Accessed: April 17, 2019.

_____. 2019. Important Farmland Finder. Available at: http://maps.conservation.ca.gov/ciff/ciff.html. Accessed: April 17, 2019.

[DOF] California Department of Finance. 2019. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019 with 2010 Census Benchmark. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

[DMR] Division of Mine Reclamation, California Department of Conservation. 2019. Mines Online. http://maps.conservation.ca.gov/mol/index.html.

[DTSC] California Department of Toxic Substances Control. 2019. Hazardous Waste and Substance Site List http://www.envirostor.dtsc.ca.gov/public/. Accessed April 17, 2019.

[DWR] California Department of Water Resources. 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.

_____. 2007. Draft Environmental Impact Report Oroville Facilities Relicensing—FERC Project No. 2100.

_____. No Date. Yolo Bypass and its Sources. https://water.ca.gov/LegacyFiles/newsroom/docs/WeirsBypassesFloodTermsRiverSystems.pdf

_____. 2019. Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/.

[ECDMS] California Energy Consumption Data Management System. 2018.

Website: Electricity Consumption by Entity. http://www.ecdms.energy.ca.gov/.

[ECORP] ECORP Consulting, Inc. 2019a. Little Avenue Lift Station and Forced Main Replacement Project, Air Quality & Greenhouse Gas Assessment. June 2019.

_____. 2019b. Biological Resources Assessment Gridley Wastewater Project. June 2019

_____. 2019c. Cultural Resources Inventory and Evaluation Report, Little Avenue Pump Station and Force Main Project. June 2019.

_____. 2019d. Little Avenue Lift Station and Forced Main Replacement Project, Noise Impact Assessment. June 2019.

Engineering Toolbox. No date. Illuminance – Recommend Light Levels. http://www.engineeringtoolbox.com/light-level-rooms-d_708.html.

[EPA] United States Environmental Protection Agency. 2016a. *Climate Change – Greenhouse Gas Emissions: Carbon Dioxide*. http://www.epa.gov/climatechange/emissions/co2.html.

———. 2016b. *Methane*. https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

———. 2016c. *Nitrous Oxide*. https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

_____. 2019. Sole Source Aquifers. https://epamaps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b.

EPA (US Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. https://nepis.epa.gov/Exe/ZyNET.exe/9101NN3I.TXT?ZyActionD=ZyDocument&Client=EPA&Index=Prior+to+1976&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C70thru75%5CTxt%5C00000024%5C9101NN3I.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.

[FEMA] Federal Emergency Management Agency, 2011. FIRM Flood Insurance Rate Map. Map No. 06007C1125E. Effective Date June January 6, 2011.

[FHWA] Federal Highway Administration. 2006. *Roadway Construction Noise Model*.

———. 2011. *Effective Noise Control During Nighttime Construction*. http://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm.

[FTA] Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*.

Gridley, City of. 2009. 2030 General Plan. Adopted December 4, 2009. http://gridley.ca.us/documents-forms/.

_____. 2009. Noise Element. December 2009. http://gridley.ca.us/public/uploads/pdfs/General_Plan-_Noise_Element.pdf.

_____. 2011. Bicycle Plan. January 2011. http://gridley.ca.us/documents-forms/.

_____. 2017 City of Gridley Code of Ordinances. Passed 8/21/2017. http://www.amlegal.com/codes/client/gridley_ca/.

_____. 2019a. Gridley-Biggs Police Department web site. http://gridley.ca.us/government-and-departments/departments/police-department/.

_____. 2019b. Gridley Fire Department web site. http://gridley.ca.us/government-and-departments/departments/fire-department/.

_____. 2019c. Recreation Services web site. http://gridley.ca.us/government-and-departments/departments/recreation-services/.

_____. 2019d. Water Facts. http://gridley.ca.us/public/uploads/pdfs/Water_Facts.pdf.

[GUSD] Gridley Unified School District. 2019. Schools. http://www.gusd.org/Schools/index.html.

[HCD] California Department of Housing and Community Development. 2018. Income Limits. http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/inc2k18.pdf.

[IPCC] Intergovernmental Panel on Climate Change. 2013. Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth

Assessment Report of the Intergovernmental Panel on Climate Change. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

———. 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. http://www.ipcc.ch/.

[NRCS] Natural Resources Conservation Service. 2019. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.

[NWSRS] National Wild and Scenic River System. No date. National Wild and Scenic Rivers Story Map. https://www.rivers.gov/index.php.

SCAQMD (South Coast Air Quality Management District). 1992. 1992 Federal Attainment Plan for Carbon Monoxide.

[SRWP] Sacramento River Watershed Program. 2010. Sacramento River Watersheds. http://www.sacriver.org/aboutwatershed/roadmap/watersheds.

[SSAR] 2019. Scientific and Standard English Names of Amphibians and Reptiles of North American North of Mexico, With Comments Regarding Confidence in our Understanding. Eighth Edition. Committee on Standard English and Scientific Names.

[SVAQEEP] Sacramento Valley Air Quality Engineering and Enforcement Professionals. 2015. Northern Sacramento Valley Planning Area: 2015, Triennial Air Quality Attainment Plan.

[SWRCB] State Water Resources Control Board. 2019. Geotracker. Accessed April 17, 2019. http://geotracker.waterboards.ca.gov.

[UCMP] University of California Museum of Paleontology. 2019. UCMP Locality Search – Butte County. https://ucmpdb.berkeley.edu/loc.html

[USGS] U.S. Geological Survey. 2018. Areas of Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html. Accessed December 21, 2018.

Weatherspark. 2019. Average Weather in Gridley, California, United States. https://weatherspark.com/y/1179/Average-Weather-in-Gridley-California-United-States-Year-Round.

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Appendices

Appendix A

Air Quality and GHG Report

Little Avenue Lift Station & Forced Main Replacement Project

Air Quality & Greenhouse Gas Assessment

Gridley, California

Prepared For:
City of Gridley
685 Kentucky Street
Gridley, California 95948
June 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, construction monitoring, and compliance reporting.

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1.0 INTRODUCTION

This report documents the results of an assessment of both air quality and greenhouse gas emissions (GHG) completed for the Little Avenue Lift Station and Forced Main Replacement Project (Project), which includes the installation of a 2,872-linear foot forced main wastewater pipeline and a lift station, the relocation of one control box, and the installation of a backup generator. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the Butte County Air Quality Management District (BCAQMD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project area is located in the City of Gridley along Little Avenue between Oregon Street on the west and Vermont Street on the east. From Vermont Street, the Project area continues east along a private road, under a water conveyance canal, and into an open field in the southern part of the City of Gridley (see **Figure 1**). The majority of Proposed Project is located within the Little Avenue right-of-way (ROW). However, approximately 670 feet is proposed to occur within the City's utility easement on private land and a section that crosses under an irrigation canal. The Project is located in the northern half of Section 1 of Township 17 North, Range 2 East, (Mount Diablo Base and Meridian). The approximate center of the site is located at latitude 39º21'20" N and longitude 41º121'56" W. Adjacent uses include single family homes and industrial uses to the north, agricultural land to the east, rural residential homes and agricultural uses to the south, and single-family homes and agricultural uses to the west.

The Proposed Project is the replacement of approximately 2,872 linear feet of 4-inch and 6-inch forced main wastewater pipeline with a 10-inch pipeline, one lift station, relocation of one control box, and the installation of a backup generator. The Project would abandon in place portions of the pipeline while removing other portions. Most of the construction would occur within the existing Little Avenue ROW, except for approximately 670 feet which would occur within the City's utility easement on private land and the section crossing under an irrigation canal. The replacement of the pipeline under an irrigation canal would be completed using horizontal direction drilling with fusible PVC pipe. Installation would be completed mostly by open trenching, with one section of directional drilling beneath an irrigation canal.

On average, there would be 10 employees at the Project site while construction activities are occurring. Construction is anticipated to start in May of 2021 and take approximately 100 days to complete.

Installation would be completed mostly by open trenching. The trenches are anticipated to be 5-feet deep and 3-feet wide. All trenches would be backfilled with existing native soils or a combination of new AB, AC, and pipe bedding material. For the area where trenching is required in the street travel way, the asphalt and fill material would be repaired per City standards. Approximately 800 cubic yards of import and 800 cubic yards of export soil material would be required to complete the Project. This includes export of excavation from pipe zone and road way material in trench zone and the import of new pipe bedding material. Most of the trench material would be reused in the backfill of the trench.

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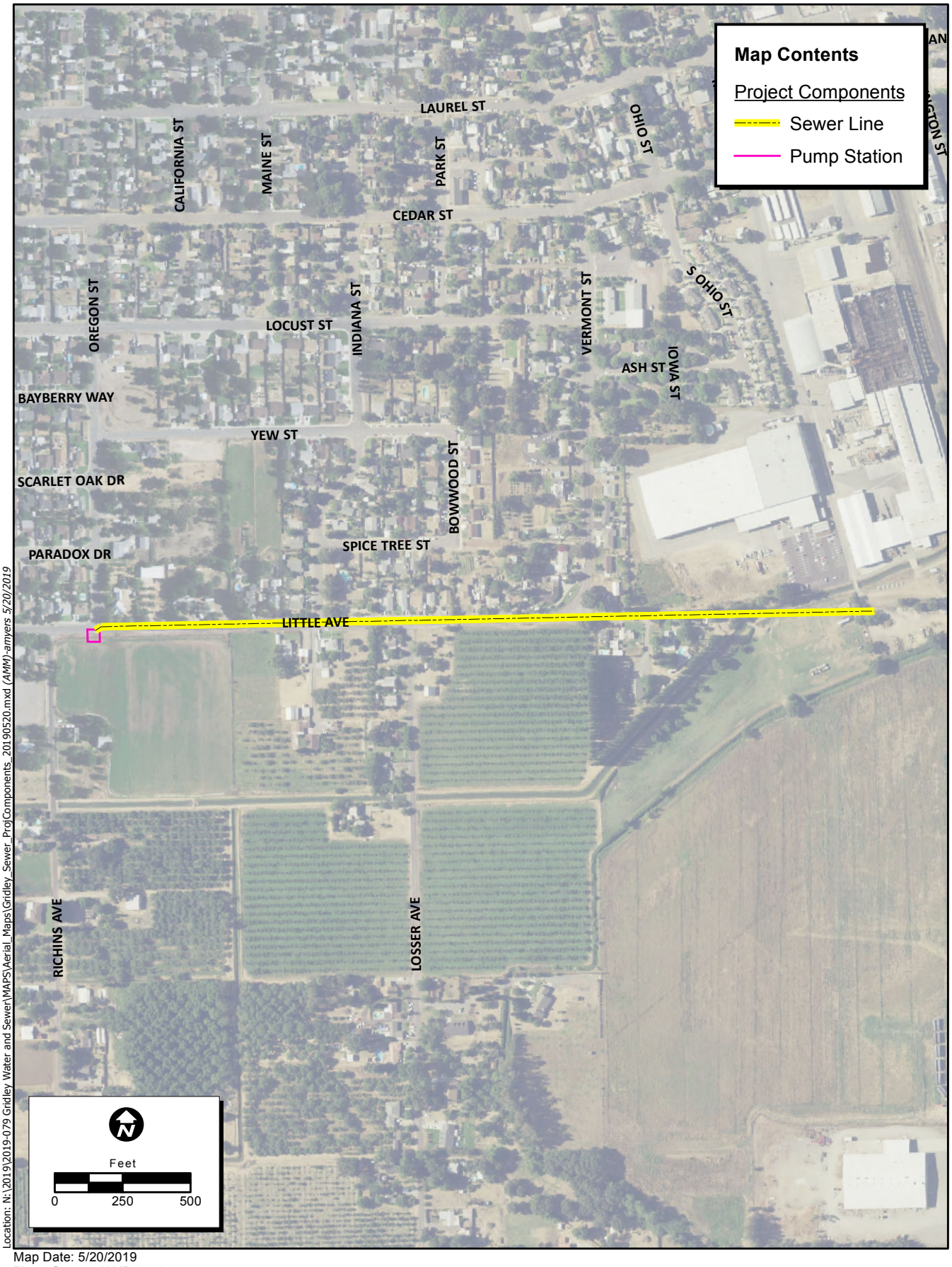

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Map Date: 5/20/2019
Photo Source: NAIP 2016

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Figure 1. Project Elements

2019-079.02 Gridley Wastewater Project

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2.0 AIR QUALITY

2.1 Air Quality 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 Northern Sacramento Valley Air Basin (NSVAB), which encompasses the Project site, pursuant to the regulatory authority of the Butte County Air Quality Management District (BCAQMD).

Northern Sacramento Valley Air Basin

The Proposed Project is 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, 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 (SVAQEEP 2015).

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 the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are 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.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in **Table 2-1**.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects		
Pollutant	**Major Man-Made Sources**	**Human Health & Welfare Effects**
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (NOx) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: CAPCOA 2013

Toxic Air Contaminants

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

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. The Yuba City – Almond Street air quality monitoring station, located approximately 15 miles south of the development site, monitors ambient concentrations of O_3, PM_{10}, and $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the development area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$, and PM_{10} since 2015 for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2015	2016	2017
O_3 (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 1-hour concentration (ppm)	0.080	0.075	0.085
Max 8-hour concentration (ppm) (state/federal)	0.074 / 0.074	0.065 / 0.065	0.074 / 0.073
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	1 / 1	0 / 0	2 / 2
PM_{10} (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	67.2 / 68.2	51.7 / 51.4	145.5 / 145.0
Number of days above 24-hour standard (state/federal)	6.0 / 0.0	1.0 / 0.0	19.3 / 0.0
$PM_{2.5}$ (Yuba City – Almond Street Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	36.1 / 36.1	40.1 / 40.1	47.2 / 45.0
Number of days above federal 24-hour standard	1.1	1.0	2.4

Source: CARB 2018
$\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
** = Insufficient data available*

The U.S. Environment Protection Agency (EPA) and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the NSVAB is included in **Table 2-3.**

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2017a).

Table 2-3. Attainment Status of Criteria Pollutants in the Butte County portion of the NSVAB

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

Source: CARB 2017a

In 1994, the air districts in the NSVAB, which includes the BCAQMD, prepared an air quality attainment plan for O_3. Updated every three years since adoption, the current *2015 Air Quality Attainment Plan* includes forecast reactive organic gas (ROG) and nitrogen oxide (NO_x) emissions (ozone precursors) for the entire NSVAB through the year 2020. The *2015 Air Quality Attainment Plan* provides local guidance for air basins to achieve attainment of the California ambient air quality O_3 standard.

2.2 Regulatory Framework

Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide is an air pollutant covered by the CAA; however, no NAAQS have been established for carbon dioxide.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults

can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The EPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. **Table 2-3** lists the federal attainment status of the Butte County portion of the NSVAB for the criteria pollutants.

State

California Clean Air Act

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

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, 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.

2.3 Air Quality Emissions Impact Assessment

Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

BCAQMD Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (BCAQMD) may be relied upon to make the above 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 2-4.**

Table 2-4. BCAQMD Regional Significance Thresholds

Air Pollutant	Construction Activities		Operations
	Pounds per Day	Tons per Year	Pound per Day
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

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.

Methodology

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the BCAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using information provided by the Project proponent, such as the anticipated duration of construction, the anticipated amount of demolition debris to be hauled off site, and the amount of soil material that would need to be hauled off site.

Impact Analysis

PROJECT CONSTRUCTION-GENERATED CRITERIA AIR QUALITY EMISSIONS

Construction Significance Analysis

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive particulate matter emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. As previously described, construction is anticipated to last 100 days. Emissions modeling accounts for the demolition and hauling of 187 tons of debris that would be generated when trenching within the paved ROW, as well as the export of 800 cubic yards of soil material generated during excavation in the proposed trench zone. Emissions modeling also accounts for the import of 800 cubic yards of new pipe bedding material. See **Attachment A** for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in **Table 2-5**. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the BCAQMD's thresholds of significance.

Table 2-5. Construction-Related Emissions

Construction Year	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Pounds per Day						
Project Construction	2.36	22.52	20.33	0.03	1.47	1.09
BCAQMD Daily Significance Threshold	*137*	*137*	-	-	*80*	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Tons per Year						
Project Construction	0.1	0.8	0.7	0.0	0.1	0.0
BCAQMD Annual Significance Threshold	*4.5*	*4.5*	-	-	-	-
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

*Source: CalEEMod version 2016.3.2. Refer to **Attachment A** for Model Data Outputs.*

Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of ashpalt debris.

As shown in **Table 2-5**, emissions generated during Project construction would not exceed the BCAQMD's regional thresholds of significance.

PROJECT OPERATIONS CRITERIA AIR QUALITY EMISSIONS

Operational Significance Analysis

Operational emissions impacts are long-term air emissions impacts that are associated with any changes in permanent use of the Project site by on-site stationary and off-site mobile sources that substantially increase emissions. The Project proposes improvements to the underground sewer infrastructure and by its very nature, would not generate quantifiable air quality emissions from Project operations. The Project would not change the permanent use of the Project site or contribute to on or off-site emissions. While the Project does propose the use of a back-up generator for use during emergency power outages, its use would be rare, intermittent and short-term, resulting in a negligible amount of pollutant emissions. The Project does not propose any buildings and therefore no permanent source or stationary source emissions. Once the Project is completed, there would be no resultant increase in automobile trips to the

area because the pipeline would not require daily visits. No long-term operational emission impacts would occur as a result of the Project.

EPA CONFORMITY DETERMINATION ANALYSIS

General Conformity ensures that the actions taken by federal agencies do not interfere with a state's plans to attain and maintain national standards for air quality.

Established under the Clean Air Act (section 176(c)(4)), the General Conformity rule plays an important role in helping states improve air quality in those areas that do not meet the National Ambient Air Quality Standards (NAAQS). Under the General Conformity rule, federal agencies must work with state and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan. The overall purpose of the General Conformity rule is to ensure that:

- federal activities do not cause or contribute to new violations of NAAQS;
- actions do not worsen existing violations of the NAAQS; and
- attainment of the NAAQS is not delayed.

Predicted annual construction-generated emissions for the Proposed Project are summarized in **Table 2-6**. 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 Conformity Determination thresholds.

Table 2-6. Construction-related Emissions (EPA Conformity Determination Analysis)

Construction	Pollutant (tons per year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Construction	0.1	0.8	0.7	0.0	0.1	0.0
EPA Conformity Determination Thresholds (40 CFR 93.153)	*100*	*100*	*100*	*100*	*100*	*100*
Exceed EPA Conformity Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

*Source: CalEEMod version 2016.3.2. Refer to **Attachment A** for Model Data Outputs.*

Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris

All criteria air pollutant thresholds are based on the region's "Marginal Nonattainment" status for ozone, "Maintenance" status for carbon monoxide, "Attainment" status for sulfur dioxide, "Moderate Nonattainment" status for PM_{10}, and "Moderate Nonattainment" status for $PM_{2.5}$.

As shown in **Table 2-6**, projected emissions resulting from the Project fall below the EPA Conformity Determination thresholds. The Project would not generate emissions during operations.

CONFLICT WITH THE 2015 AIR QUALITY ATTAINMENT PLAN

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously stated, the Butte County portion of the NSVAB is classified nonattainment for the federal O_3 standard.

The *2015 Air Quality Attainment Plan* 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 (such as monitoring, modeling, permitting, etc.), 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 *2015 Air Quality Attainment Plan* includes forecast ROG and NO_X emissions (O_3 precursors) for the entire NSVAB through the year 2020. The plan also includes control strategies necessary to attain the California O_3 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.

Implementation of the Project would result in long-term emissions from area and mobile emission sources, which could conflict with air quality planning in the *2015 Air Quality Attainment Plan*. The consistency of the Proposed Project with the *2015 Air Quality Attainment Plan* is determined by its consistency with air pollutant emission projections in the plan. The *2015 Air Quality Attainment Plan* addresses growth by projecting the growth in emissions based on different indicators. For example, population forecasts adopted by local governments are used to forecast population-related emissions. Through the planning process, emission growth is offset by basin-wide controls on stationary, area, and transportation sources of air pollution. In other words, the plans and control measures in the *Air Quality Attainment Plan* are based on information derived from projected growth in order to predict future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections for the City of Gridley are based on the City of Gridley General Plan. As such, projects in the City that propose development consistent with the growth anticipated by the City General Plan would be consistent with the *Air Quality Attainment Plan*.

The Proposed Project does not conflict with any of the land use assumptions in the City General Plan. Specifically, the Project does not propose to amend the General Plan, 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 *2015 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 will not require daily visits.

EXPOSURE OF SENSITIVE RECEPTORS TO TOXIC AIR CONTAMINANTS

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 include adjacent single-family homes.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of diesel particulate matter (DPM) from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; application of architectural coatings; and other miscellaneous activities. For construction activity, DPM is the primary TAC of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by the CARB in 1998. The potential cancer risk from the inhalation of DPM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Accordingly, DPM is the focus of this discussion.

Based on the emission modeling conducted, the maximum construction-related annual emissions of $PM_{2.5}$ exhaust, considered a surrogate for DPM, would be 0.99 pounds per day (see **Attachment A**). ($PM_{2.5}$ is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$), according to CARB. Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles.) Furthermore, even during the most intense month of construction, emissions of DPM would be generated from different locations on the linear Project site, rather than a single location, because different types of construction activities (e.g., demolition, site preparation, paving) would not occur at the same place at the same time.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-, 30-, or 9-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the Proposed Project. Consequently, an important consideration is the fact that construction of the Proposed Project is anticipated to last approximately 100 days (±3 months), which is far less than the minimum duration of exposure from which

to calculate health risk (9 years), and that on a day-to-day basis construction activity generally spans eight hours as opposed to throughout the entire day.

Therefore, considering the relatively low mass of DPM emissions that would be generated during even the most intense season of construction and the relatively short duration of construction activities (100 days) required to implement the Project, construction-related TAC emissions would not expose sensitive receptors to substantial amounts of air toxics.

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. Therefore, the Project would not be a source of TACs and there would be no impact as a result of the Project during operations. While the Project does propose the use of a back-up generator for use during emergency power outages, a potential source of DPM emissions, its use would be rare, intermittent and short-term, resulting in a negligible amount of TAC emissions.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Project vicinity have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The analysis prepared for CO attainment in the South Coast Air Quality Management District *1992 Federal Attainment Plan for Carbon Monoxide* (1992 CO Plan) in Los Angeles County can be used to demonstrate the potential for CO exceedances. The South Coast Air Quality Management District CO hot spot analysis was conducted for four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. The Los Angeles County

Metropolitan Transportation Authority evaluated the level of service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be level of service (LOS) E at peak morning traffic and LOS F at peak afternoon traffic (LOS E and F are the two least efficient traffic LOS ratings). Even with the inefficient LOS and volume of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992).

The Project is not anticipated to generate any trips. Because the Proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, there is no likelihood of the Project traffic exceeding CO values.

ODORS

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

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

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

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

Implementation of the Proposed Project would not result in the introduction of any new processes that are considered to have a high odor-generation potential.

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3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

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

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (IPCC 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, 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 CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 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 CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases	
Greenhouse Gas	**Description**
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1] EPA 2016a, [2] EPA 2016b, [3] EPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it 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.

Sources of Greenhouse Gas Emissions

In June 2017, CARB released the 2017 edition of the California GHG inventory covering calendar year 2015 emissions. In 2015, California emitted 440.4 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2015, accounting for approximately 37 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector (including both in-state and out-of-state sources) (19 percent) (CARB 2017b).

Emissions of CO_2 are by-products of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing carbon dioxide from the atmosphere.

3.2 Regulatory Framework

State

Executive Order S-3-05

Executive Order (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 executive order 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.

While dated, this executive order remains relevant because a more recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. While the California Supreme Court ruled that the San Diego Association of Governments did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal, the decision also recognized that the goal of a 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions 80 percent below 1990 levels by the year 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill 32 (Health and Safety Code §38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires 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). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible State implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the State implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by Senate Bill 32 (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.

Executive Order B-30-15

On April 20, 2015 Governor Brown signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

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 Section 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. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

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

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California.

In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 RPS.

3.3 Greenhouse Gas Emissions Impact Assessment

Thresholds of Significance

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

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

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

The BCAQMD does not promulgate thresholds for GHG emissions; therefore, the analysis will rely on a multi-tiered approach to analyzing GHG. First, Project GHG emissions will be compared with the thresholds established in Tehama County. As with Butte County and the Project site, Tehama County is located within the NSVAB and therefore mass emission thresholds of significance developed in that county are appropriate. Furthermore, 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.

Methodology

GHG impacts were assessed in accordance with methodologies recommended by CARB. Where quantification was required, GHG emissions were modeled using CalEEMod, version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were calculated using information provided by the Project proponent, such as the anticipated duration of construction, the anticipated amount of demolition debris to be hauled off site, and the amount of soil material that would need to be hauled off site.

Impact Analysis

CONTRIBUTION OF GREENHOUSE GAS EMISSIONS

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. As previously described, construction is anticipated to last 100 days. Emissions modeling accounts for the demolition and hauling of 187 tons of debris that would be generated when trenching within the paved ROW, as well as the export of 800 cubic yards of soil material generated during excavation in the

proposed trench zone. Emissions modeling also accounts for the import of 800 cubic yards of new pipe bedding material. See **Attachment B** for more information regarding the construction assumptions, including construction equipment and duration used in this analysis.

Table 3-2 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons / Year)
Project Construction	119
GHG Significance Threshold	*900*
Exceed Threshold	**No**

*Source: CalEEMod version 2016.3.2. Refer to **Attachment B** for Model Data Outputs.*

Notes: Emissions estimates account for the disturbance of 0.7 acre of land, import of 800 cubic yards of soil material, export of 800 cubic yards of soil material, and demolition and hauling of 187 tons of asphalt debris.

As shown in **Table 3-2**, Project construction would result in the generation of approximately 119 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. GHG emissions would remain below the annual significance threshold during Project construction.

Operations

In terms of operational GHG emissions, the Proposed Project involves the installation of a 2,872-linear foot forced main wastewater pipeline and a lift station, the relocation of one control box, and the installation of a backup generator. The Proposed Project would not include the provision of new permanent stationary or mobile sources of emissions, and therefore, by its very nature, would not generate quantifiable GHG emissions from Project operations. The Project does not propose any buildings and therefore no permanent source or stationary source emissions. Once the Project is completed, there would be no resultant increase in automobile trips to the area because the pipeline would not require daily visits. While the Project does propose the use of a back-up generator for use during emergency power outages, its use would be rare, intermittent and short-term, resulting in a negligible amount of pollutant emissions. The Project also involves the installation of a lift station, an indirect source of GHG emissions due to the use of electricity. However, the quantity of pumped wastewater would not increase beyond existing conditions as a result of the Project. Therefore, any increase of generated GHG emissions would be negligible.

CONFLICT WITH ANY APPLICABLE PLAN, POLICY, OR REGULATION OF AN AGENCY ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES

The City of Gridley does not promulgate an adopted GHG-reduction plan. However, State policies and standards adopted for the purpose of reducing GHG emissions include Executive Order (EO) S-3-05, AB 32, and SB 375. The quantitative goal of these regulations is to reduce GHG emissions to 1990 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Statewide plans and regulations (such as GHG emissions standards for vehicles, the Low Carbon Fuel Standard, Cap-and-Trade, and renewable energy) are being implemented at the statewide level, and compliance at a project level is not addressed. Therefore, the Proposed Project does not conflict with these plans and regulations. New construction associated with the Proposed Project would be executed in compliance with the requirements of these regulations, thereby supporting and not conflicting with these regulations. Further, as identified above, Project-generated GHG emissions would not surpass GHG significance thresholds, which were prepared to comply with California GHG reduction goals. The Proposed Project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases.

4.0 REFERENCES

BCAQMD (Butte County Air Quality Management District). 2014. *CEQA Air Quality Handbook*.

CAPCOA (California Air Pollution Control Officers Association). 2013. Health Effects. http://www.capcoa.org/health-effects/.

CARB (California Air Resources Board). *2005. Air Quality and Land Use Handbook*

———. 2008. *Climate Change Scoping Plan Appendices* (Appendix F).

———. 2013. *Facts about California's Sustainable Communities Plans.* https://www.arb.ca.gov/cc/sb375/sacog_fact_sheet.pdf

———. 2018. Air Quality Data Statistics. http://www.arb.ca.gov/adam/index.html.

———. 2017a. State and Federal Area Designation Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

———. 2017b. *California Greenhouse Gas Emission Inventory 2017 Edition*. https://www.arb.ca.gov/cc/inventory/data/data.htm.

EPA (US Environmental Protection Agency). 2016a. *Climate Change – Greenhouse Gas Emissions: Carbon Dioxide*. http://www.epa.gov/climatechange/emissions/co2.html.

———. 2016b. *Methane*. https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

———. 2016c. *Nitrous Oxide*. https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

IPCC (Intergovernmental Panel on Climate Change). 2013. *Carbon and Other Biogeochemical Cycles.* In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

———. 2014. *Climate Change 2014 Synthesis Report: Approved Summary for Policymakers.* http://www.ipcc.ch/.

SCAQMD (South Coast Air Quality Management District). 1992. *1992 Federal Attainment Plan for Carbon Monoxide.*

SVAQEEP (Sacramento Valley Air Quality Engineering and Enforcement Professionals) 2015. *Northern Sacramento Valley Planning Area: 2015, Triennial Air Quality Attainment Plan*.

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutants

Little Avenue Wastewater Replacement Project

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	28.72	1000sqft	0.66	28,720.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project implementation assumed to occur in 100 days

Grading - 800 cubic yards exported and 800 cubic yards imported. Mass site grading would not occur

Demolition - Roadway demolition

Trips and VMT - 10 construction workers maximum

Little Avenue Wastewater Replacement Project - Butte County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	50.00
tblConstructionPhase	NumDays	5.00	69.00
tblConstructionPhase	NumDays	1.00	100.00
tblConstructionPhase	PhaseEndDate	6/13/2019	7/9/2021
tblConstructionPhase	PhaseEndDate	11/12/2019	9/17/2021
tblConstructionPhase	PhaseEndDate	6/14/2019	9/17/2021
tblConstructionPhase	PhaseStartDate	5/31/2019	5/1/2021
tblConstructionPhase	PhaseStartDate	11/6/2019	6/15/2021
tblConstructionPhase	PhaseStartDate	6/14/2019	5/1/2021
tblGrading	AcresOfGrading	50.00	0.50
tblGrading	MaterialExported	0.00	800.00
tblGrading	MaterialImported	0.00	800.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3630	22.5262	20.3370	0.0379	0.4150	1.0646	1.4797	0.1003	0.9968	1.0971	0.0000	3,626.3196	3,626.3196	0.8480	0.0000	3,647.5197
Maximum	**2.3630**	**22.5262**	**20.3370**	**0.0379**	**0.4150**	**1.0646**	**1.4797**	**0.1003**	**0.9968**	**1.0971**	**0.0000**	**3,626.3196**	**3,626.3196**	**0.8480**	**0.0000**	**3,647.5197**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3630	22.5262	20.3370	0.0379	0.4150	1.0646	1.4797	0.1003	0.9968	1.0971	0.0000	3,626.3196	3,626.3196	0.8480	0.0000	3,647.5197
Maximum	**2.3630**	**22.5262**	**20.3370**	**0.0379**	**0.4150**	**1.0646**	**1.4797**	**0.1003**	**0.9968**	**1.0971**	**0.0000**	**3,626.3196**	**3,626.3196**	**0.8480**	**0.0000**	**3,647.5197**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0159	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0159**	**3.0000e-005**	**2.9400e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.2900e-003**	**6.2900e-003**	**2.0000e-005**	**0.0000**	**6.7000e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0159	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0159**	**3.0000e-005**	**2.9400e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.2900e-003**	**6.2900e-003**	**2.0000e-005**	**0.0000**	**6.7000e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	7/9/2021	5	50	
2	Site Preparation	Site Preparation	5/1/2021	9/17/2021	5	100	
3	Paving	Paving	6/15/2021	9/17/2021	5	69	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.66

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	19.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	10.00	0.00	200.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	10.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0801	0.0000	0.0801	0.0121	0.0000	0.0121			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0801**	**0.4073**	**0.4875**	**0.0121**	**0.3886**	**0.4007**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8300e-003	0.0970	0.0133	3.1000e-004	6.6600e-003	3.6000e-004	7.0200e-003	1.8300e-003	3.4000e-004	2.1700e-003		32.4797	32.4797	2.2700e-003		32.5365
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0652**	**0.1395**	**0.5358**	**1.3100e-003**	**0.1020**	**1.0800e-003**	**0.1031**	**0.0271**	**1.0100e-003**	**0.0281**		**131.6576**	**131.6576**	**6.7800e-003**		**131.8270**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0801	0.0000	0.0801	0.0121	0.0000	0.0121			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0801**	**0.4073**	**0.4875**	**0.0121**	**0.3886**	**0.4007**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8300e-003	0.0970	0.0133	3.1000e-004	6.6600e-003	3.6000e-004	7.0200e-003	1.8300e-003	3.4000e-004	2.1700e-003		32.4797	32.4797	2.2700e-003		32.5365
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0652**	**0.1395**	**0.5358**	**1.3100e-003**	**0.1020**	**1.0800e-003**	**0.1031**	**0.0271**	**1.0100e-003**	**0.0281**		**131.6576**	**131.6576**	**6.7800e-003**		**131.8270**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1100e-003	0.0000	7.1100e-003	8.5000e-004	0.0000	8.5000e-004			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**7.1100e-003**	**0.2995**	**0.3066**	**8.5000e-004**	**0.2755**	**0.2764**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0149	0.5104	0.0698	1.6300e-003	0.0350	1.8900e-003	0.0369	9.6100e-003	1.8100e-003	0.0114		170.9459	170.9459	0.0120		171.2448
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0773**	**0.5529**	**0.5923**	**2.6300e-003**	**0.1304**	**2.6100e-003**	**0.1330**	**0.0349**	**2.4800e-003**	**0.0374**		**270.1238**	**270.1238**	**0.0165**		**270.5353**

3.3 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1100e-003	0.0000	7.1100e-003	8.5000e-004	0.0000	8.5000e-004			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**7.1100e-003**	**0.2995**	**0.3066**	**8.5000e-004**	**0.2755**	**0.2764**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0149	0.5104	0.0698	1.6300e-003	0.0350	1.8900e-003	0.0369	9.6100e-003	1.8100e-003	0.0114		170.9459	170.9459	0.0120		171.2448
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0773**	**0.5529**	**0.5923**	**2.6300e-003**	**0.1304**	**2.6100e-003**	**0.1330**	**0.0349**	**2.4800e-003**	**0.0374**		**270.1238**	**270.1238**	**0.0165**		**270.5353**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286		1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7214**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**		**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0624**	**0.0426**	**0.5225**	**1.0000e-003**	**0.0954**	**7.2000e-004**	**0.0961**	**0.0253**	**6.7000e-004**	**0.0260**		**99.1778**	**99.1778**	**4.5100e-003**		**99.2905**

3.4 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286	0.0000	1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7214**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**	**0.0000**	**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0624	0.0426	0.5225	1.0000e-003	0.0954	7.2000e-004	0.0961	0.0253	6.7000e-004	0.0260		99.1778	99.1778	4.5100e-003		99.2905
Total	**0.0624**	**0.0426**	**0.5225**	**1.0000e-003**	**0.0954**	**7.2000e-004**	**0.0961**	**0.0253**	**6.7000e-004**	**0.0260**		**99.1778**	**99.1778**	**4.5100e-003**		**99.2905**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.514547	0.034230	0.180067	0.120126	0.034848	0.006594	0.018358	0.079646	0.001635	0.001462	0.005861	0.001268	0.001358

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0159	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003
Unmitigated	0.0159	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.4700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-004	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003
Total	**0.0159**	**3.0000e-005**	**2.9400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.2900e-003**	**6.2900e-003**	**2.0000e-005**		**6.7000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.4700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-004	3.0000e-005	2.9400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.2900e-003	6.2900e-003	2.0000e-005		6.7000e-003
Total	**0.0159**	**3.0000e-005**	**2.9400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.2900e-003**	**6.2900e-003**	**2.0000e-005**		**6.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

CalEEMod Output Files – Greenhouse Gas Emissions

Little Avenue Wastewater Replacement Project

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	28.72	1000sqft	0.66	28,720.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project implementation assumed to occur in 100 days

Grading - 800 cubic yards exported and 800 cubic yards imported. Mass site grading would not occur

Demolition - Roadway demolition

Trips and VMT - 10 construction workers maximum

Stationary Sources - Emergency Generators and Fire Pumps -

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	50.00
tblConstructionPhase	NumDays	5.00	69.00
tblConstructionPhase	NumDays	1.00	100.00
tblConstructionPhase	PhaseEndDate	6/13/2019	7/9/2021
tblConstructionPhase	PhaseEndDate	11/12/2019	9/17/2021
tblConstructionPhase	PhaseEndDate	6/14/2019	9/17/2021
tblConstructionPhase	PhaseStartDate	5/31/2019	5/1/2021
tblConstructionPhase	PhaseStartDate	11/6/2019	6/15/2021
tblConstructionPhase	PhaseStartDate	6/14/2019	5/1/2021
tblGrading	AcresOfGrading	50.00	0.50
tblGrading	MaterialExported	0.00	800.00
tblGrading	MaterialImported	0.00	800.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	84.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	24.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0835	0.8379	0.6873	1.3600e-003	0.0142	0.0375	0.0517	3.5200e-003	0.0350	0.0385	0.0000	118.4601	118.4601	0.0291	0.0000	119.1885
Maximum	**0.0835**	**0.8379**	**0.6873**	**1.3600e-003**	**0.0142**	**0.0375**	**0.0517**	**3.5200e-003**	**0.0350**	**0.0385**	**0.0000**	**118.4601**	**118.4601**	**0.0291**	**0.0000**	**119.1885**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0835	0.8379	0.6873	1.3600e-003	0.0142	0.0375	0.0517	3.5200e-003	0.0350	0.0385	0.0000	118.4599	118.4599	0.0291	0.0000	119.1883
Maximum	**0.0835**	**0.8379**	**0.6873**	**1.3600e-003**	**0.0142**	**0.0375**	**0.0517**	**3.5200e-003**	**0.0350**	**0.0385**	**0.0000**	**118.4599**	**118.4599**	**0.0291**	**0.0000**	**119.1883**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
8	2-28-2021	5-30-2021	0.1858	0.1858
9	5-31-2021	8-30-2021	0.6241	0.6241
10	8-31-2021	9-30-2021	0.1069	0.1069
		Highest	0.6241	0.6241

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8800e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	1.6500e-003	5.3900e-003	6.0000e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.7677	0.7677	1.1000e-004	0.0000	0.7704
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5300e-003**	**5.3900e-003**	**6.2600e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.7682**	**0.7682**	**1.1000e-004**	**0.0000**	**0.7709**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8800e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	1.6500e-003	5.3900e-003	6.0000e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.7677	0.7677	1.1000e-004	0.0000	0.7704
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5300e-003**	**5.3900e-003**	**6.2600e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.7682**	**0.7682**	**1.1000e-004**	**0.0000**	**0.7709**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2021	7/9/2021	5	50	
2	Site Preparation	Site Preparation	5/1/2021	9/17/2021	5	100	
3	Paving	Paving	6/15/2021	9/17/2021	5	69	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.66

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	19.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	10.00	0.00	200.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	10.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-003	0.0000	2.0000e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1813	0.1892	3.0000e-004		0.0102	0.0102		9.7100e-003	9.7100e-003	0.0000	26.0234	26.0234	4.8500e-003	0.0000	26.1446
Total	**0.0199**	**0.1813**	**0.1892**	**3.0000e-004**	**2.0000e-003**	**0.0102**	**0.0122**	**3.0000e-004**	**9.7100e-003**	**0.0100**	**0.0000**	**26.0234**	**26.0234**	**4.8500e-003**	**0.0000**	**26.1446**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4900e-003	3.5000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7293	0.7293	5.0000e-005	0.0000	0.7306
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.1700e-003	0.0110	2.0000e-005	2.2800e-003	2.0000e-005	2.3000e-003	6.1000e-004	2.0000e-005	6.2000e-004	0.0000	2.0256	2.0256	9.0000e-005	0.0000	2.0279
Total	**1.4100e-003**	**3.6600e-003**	**0.0113**	**3.0000e-005**	**2.4400e-003**	**3.0000e-005**	**2.4700e-003**	**6.5000e-004**	**3.0000e-005**	**6.7000e-004**	**0.0000**	**2.7549**	**2.7549**	**1.4000e-004**	**0.0000**	**2.7585**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-003	0.0000	2.0000e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1813	0.1892	3.0000e-004		0.0102	0.0102		9.7100e-003	9.7100e-003	0.0000	26.0233	26.0233	4.8500e-003	0.0000	26.1446
Total	**0.0199**	**0.1813**	**0.1892**	**3.0000e-004**	**2.0000e-003**	**0.0102**	**0.0122**	**3.0000e-004**	**9.7100e-003**	**0.0100**	**0.0000**	**26.0233**	**26.0233**	**4.8500e-003**	**0.0000**	**26.1446**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4900e-003	3.5000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7293	0.7293	5.0000e-005	0.0000	0.7306
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	1.1700e-003	0.0110	2.0000e-005	2.2800e-003	2.0000e-005	2.3000e-003	6.1000e-004	2.0000e-005	6.2000e-004	0.0000	2.0256	2.0256	9.0000e-005	0.0000	2.0279
Total	**1.4100e-003**	**3.6600e-003**	**0.0113**	**3.0000e-005**	**2.4400e-003**	**3.0000e-005**	**2.4700e-003**	**6.5000e-004**	**3.0000e-005**	**6.7000e-004**	**0.0000**	**2.7549**	**2.7549**	**1.4000e-004**	**0.0000**	**2.7585**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6000e-004	0.0000	3.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.3910	0.2014	4.9000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	42.7549	42.7549	0.0138	0.0000	43.1006
Total	**0.0320**	**0.3910**	**0.2014**	**4.9000e-004**	**3.6000e-004**	**0.0150**	**0.0153**	**4.0000e-005**	**0.0138**	**0.0138**	**0.0000**	**42.7549**	**42.7549**	**0.0138**	**0.0000**	**43.1006**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0262	3.7100e-003	8.0000e-005	1.6900e-003	1.0000e-004	1.7800e-003	4.6000e-004	9.0000e-005	5.6000e-004	0.0000	7.6763	7.6763	5.7000e-004	0.0000	7.6906
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6800e-003	2.3400e-003	0.0219	4.0000e-005	4.5700e-003	4.0000e-005	4.6000e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	4.0512	4.0512	1.8000e-004	0.0000	4.0557
Total	**3.4400e-003**	**0.0286**	**0.0256**	**1.2000e-004**	**6.2600e-003**	**1.4000e-004**	**6.3800e-003**	**1.6800e-003**	**1.2000e-004**	**1.8100e-003**	**0.0000**	**11.7276**	**11.7276**	**7.5000e-004**	**0.0000**	**11.7464**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6000e-004	0.0000	3.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.3910	0.2014	4.9000e-004		0.0150	0.0150		0.0138	0.0138	0.0000	42.7549	42.7549	0.0138	0.0000	43.1005
Total	**0.0320**	**0.3910**	**0.2014**	**4.9000e-004**	**3.6000e-004**	**0.0150**	**0.0153**	**4.0000e-005**	**0.0138**	**0.0138**	**0.0000**	**42.7549**	**42.7549**	**0.0138**	**0.0000**	**43.1005**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0262	3.7100e-003	8.0000e-005	1.6900e-003	1.0000e-004	1.7800e-003	4.6000e-004	9.0000e-005	5.6000e-004	0.0000	7.6763	7.6763	5.7000e-004	0.0000	7.6906
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6800e-003	2.3400e-003	0.0219	4.0000e-005	4.5700e-003	4.0000e-005	4.6000e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	4.0512	4.0512	1.8000e-004	0.0000	4.0557
Total	**3.4400e-003**	**0.0286**	**0.0256**	**1.2000e-004**	**6.2600e-003**	**1.4000e-004**	**6.3800e-003**	**1.6800e-003**	**1.2000e-004**	**1.8100e-003**	**0.0000**	**11.7276**	**11.7276**	**7.5000e-004**	**0.0000**	**11.7464**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0249	0.2318	0.2446	3.9000e-004		0.0122	0.0122		0.0113	0.0113	0.0000	32.4040	32.4040	9.4400e-003	0.0000	32.6400
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0249**	**0.2318**	**0.2446**	**3.9000e-004**		**0.0122**	**0.0122**		**0.0113**	**0.0113**	**0.0000**	**32.4040**	**32.4040**	**9.4400e-003**	**0.0000**	**32.6400**

3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8500e-003	1.6100e-003	0.0151	3.0000e-005	3.1500e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.7954	2.7954	1.2000e-004	0.0000	2.7985
Total	**1.8500e-003**	**1.6100e-003**	**0.0151**	**3.0000e-005**	**3.1500e-003**	**2.0000e-005**	**3.1800e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.7954**	**2.7954**	**1.2000e-004**	**0.0000**	**2.7985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0249	0.2318	0.2446	3.9000e-004		0.0122	0.0122		0.0113	0.0113	0.0000	32.4040	32.4040	9.4400e-003	0.0000	32.6399
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0249**	**0.2318**	**0.2446**	**3.9000e-004**		**0.0122**	**0.0122**		**0.0113**	**0.0113**	**0.0000**	**32.4040**	**32.4040**	**9.4400e-003**	**0.0000**	**32.6399**

3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8500e-003	1.6100e-003	0.0151	3.0000e-005	3.1500e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.7954	2.7954	1.2000e-004	0.0000	2.7985
Total	**1.8500e-003**	**1.6100e-003**	**0.0151**	**3.0000e-005**	**3.1500e-003**	**2.0000e-005**	**3.1800e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.7954**	**2.7954**	**1.2000e-004**	**0.0000**	**2.7985**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.514547	0.034230	0.180067	0.120126	0.034848	0.006594	0.018358	0.079646	0.001635	0.001462	0.005861	0.001268	0.001358

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8800e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004
Unmitigated	2.8800e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004
Total	**2.8800e-003**	**0.0000**	**2.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.1000e-004**	**5.1000e-004**	**0.0000**	**0.0000**	**5.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.1000e-004	5.1000e-004	0.0000	0.0000	5.5000e-004
Total	**2.8800e-003**	**0.0000**	**2.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.1000e-004**	**5.1000e-004**	**0.0000**	**0.0000**	**5.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	24	84	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (75 - 100 HP)	1.6500e-003	5.3900e-003	6.0000e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.7677	0.7677	1.1000e-004	0.0000	0.7704
Total	**1.6500e-003**	**5.3900e-003**	**6.0000e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.7677**	**0.7677**	**1.1000e-004**	**0.0000**	**0.7704**

11.0 Vegetation

Appendix B

Biological Resources Assessment

Biological Resources Assessment

Gridley Wastewater Project

Butte County, California

Prepared for:

City of Gridley

June 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, and construction monitoring and reporting.

Citation: ECORP Consulting, Inc. 2019. Biological Resources Assessment for the Gridley Wastewater Project, Butte County, California. Prepared for the City of Gridley. June.

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LIST OF ACRONYMS AND ABBREVIATIONS

AOU	American Ornithologist's Union
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
City	City of Gridley
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CWA	Clean Water Act
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
Project	Gridley Wastewater Project
SAA	Streambed Alteration Agreement
SSAR	Study of Amphibians and Reptiles
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USEPA	The U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

ECORP Consulting, Inc. conducted a biological resource assessment for the proposed Gridley Wastewater Project (Project). The Project consists of the installation of a wastewater pipe and pump station in and near an urban roadway in residential development in the City of Gridley (City), Butte County, California (Figure 1. *Project Site and Vicinity*). The biological reconnaissance survey of the Project site was conducted in support of obtaining California Environmental Quality Act clearance and for the purposes of determining the baseline biological conditions and to identify any biological constraints that may affect the Project and its implementation.

1.1 Location and Setting

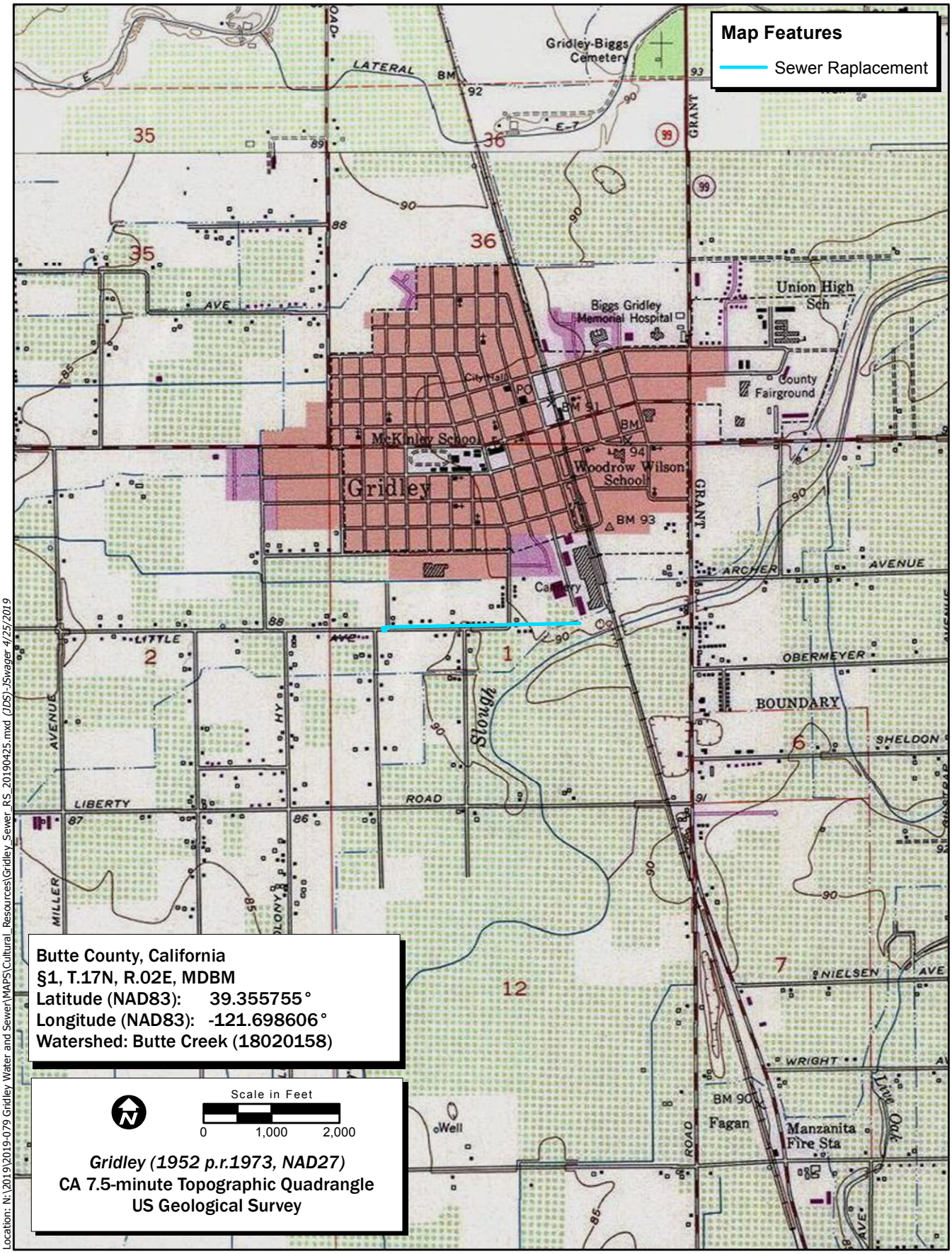
The Project Area consists of approximately 8.8 linear miles of roadways and alleyways throughout Gridley, all located in the northern half of Section 1, Township 17 North, Range 02 East (Mount Diablo Base and Meridian), as depicted on the 1973 Gridley, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1. *Project Site and Vicinity*). The approximate center of the site is located at latitude 39.355755° (NAD83) and longitude -121.698606° (NAD83) within the Butte Creek Watershed (Hydrologic Unit Code #18020158) (Natural Resources Conservation Service [NRCS] et al. 2019). It is located within the rights-of-way of existing city streets and alleyways and does not include private properties or parcels.

1.2 Project Description and Purpose

The proposed Project entails replacing approximately 2,800 linear feet of four- and six-inch forced main wastewater pipeline with a one 10-inch pipeline, installation of a lift station, relocation of a control box, and installation of a backup generator (Figure 2. *Project Elements*). The Project will abandon in-place some portions of the existing pipelines while removing others. Most of the construction will occur within the Little Avenue right-of-way, except for approximately 670 feet, which will occur within the City's utility easement on private land. Additionally, the replacement of the pipeline will entail boring under the irrigation canal. Installation along Little Avenue will be completed by open trenching, with directional drilling used beneath the irrigation canal. The purpose of this study was to determine the baseline biological conditions on the Project site and ensure that the Project development is consistent with the goals and requirements of the local regulatory setting.

2.0 REGULATORY SETTING

This biological reconnaissance survey was conducted to identify potential issues and ensure compliance with relevant state and federal regulations regarding listed, protected, and sensitive species. These regulations are detailed below.



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Map Date: 4/25/2019

iService Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

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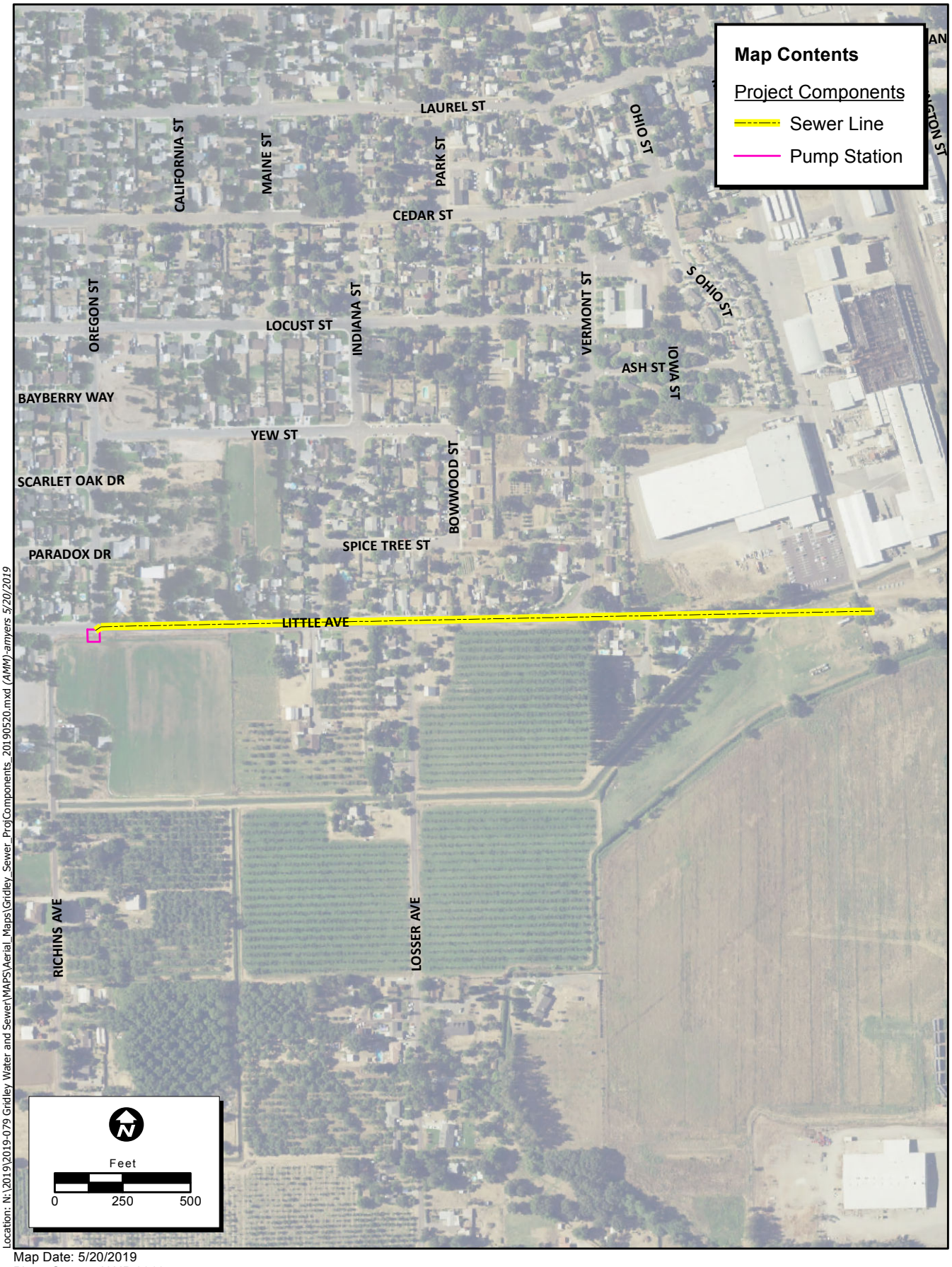
Figure 1. Project Site and Vicinity

2019-079.02 Gridley Sewer Project



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Map Date: 5/20/2019
Photo Source: NAIP 2016

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Figure 2. Project Elements

2019-079.02 Gridley Wastewater Project

2.1 Federal Regulations

2.1.1 The Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of the ESA, federal agencies are required to consult with USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat.

Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

2.1.3 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the United States (U.S.) without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (USEPA) acts as a cooperating agency to set policy,

guidance and criteria for use in evaluation permit applications and also reviews USACE permit applications.

The USACE regulates "fill" or dredging of fill material within its jurisdictional features. "Fill material" means any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a water body. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the State Water Quality Control Board, administered by each of nine California Regional Water Quality Control Boards.

2.2 State and Local Regulations

2.2.1 California Endangered Species Act

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

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

2.2.3 Native Plant Protection Act

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

2.2.4 California Fish and Game Code

Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the Applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the Applicant is the Streambed Alteration Agreement (SAA). Often, projects that require an SAA also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the SAA may overlap.

Migratory and Nesting Birds

The CDFW enforces the protection of nongame native birds in §§ 3503, 3503.5, and 3800 of the California Fish and Game Code. Section 3513 of the California Fish and Game Code prohibits the possession or take of birds listed under the MBTA. These sections mandate the protection of California nongame native birds' nests and also make it unlawful to take these birds. All raptor species are protected from "take" pursuant to California Fish and Game Code § 3503.5 and are also protected at the federal level by the MBTA of 1918.

2.2.5 City of Gridley General Plan

The City of Gridley addresses native and ornamental trees in a general way, and emphasizes that "a complete urban tree canopy that provides a pleasant and attractive streetscape is essential to our community's character and quality of life" (City of Gridley General Plan 2030, page 27). Although Gridley has no native tree ordinance, Design Policy 7.4 states that "to the extent feasible, existing mature trees and shrubs should be preserved and incorporated into the landscaping scheme" (City of Gridley General Plan 2030, page 27).

3.0 METHODS

3.1 Literature Review/Database Queries

ECORP biologists queried the CDFW's California Natural Diversity Data Base (CNDDB; CDFW 2019a) and the California Native Plant Society's (CNPS') Electronic Inventory (CNPS 2019) to determine the special-status plant and wildlife species that have been documented in the vicinity of the Project site. The CNDDB database search was conducted on April 30, 2019. ECORP searched CNDDB and records within the Project boundaries as depicted on USGS 7.5-minute Gridley topographic quadrangle, plus the surrounding eight topographic quadrangles, including West of Biggs, Biggs, Palermo, Pennington, Honcut, Sutter Buttes, Sutter, and Yuba City. The CNDDB and CNPS databases contain records of reported occurrences of federally or state-listed endangered, threatened, proposed endangered or threatened species, California Species of Special Concern (SSC), and/or other special-status species or habitat that may occur within or

in the vicinity of the Project. Additional information was gathered from the following sources and includes, but is not limited to:

NRCS Service *Web Soil Survey* (NRCS 2019);

- *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2019b);
- *Special Animals List* (CDFW 2019c);
- *The Jepson Manual*; *2nd Ed.* (Baldwin et al. 2012);
- *The Manual of California Vegetation*, 2nd Edition (Sawyer et al. 2009); and
- various online websites (e.g., Calflora 2019).

Using this information and observations in the field, a list of special-status plant and animal species that have potential to occur within the Project site was generated. For the purposes of this assessment, special-status species are defined as plants or animals that:

- have been designated as either rare, threatened, or endangered by CDFW, CNPS, or the USFWS, and/or are protected under either the federal or California ESAs;
- are candidate species being considered or proposed for listing under these same acts;
- are fully protected by the California Fish and Game Code, §§ 3511, 4700, 5050, or 5515;
- are of expressed concern to resource and regulatory agencies or local jurisdictions; and/or
- Are covered species under the Multi-Species Habitat Conservation Plan.

Special-status species reported for the region in the literature review or for which suitable habitat occurs on the Site were assessed for their potential to occur within the Project site based on the following guidelines:

Present: The species was observed on-site during a site visit or focused survey.

High: Habitat (including soils and elevation factors) for the species occurs on-site and a known occurrence has been recorded within five miles of the site.

Moderate: Either habitat (including soils and elevation factors) for the species occurs on-site and a known occurrence has been reported in the database, but not within five miles of the site, or a known occurrence occurs within five miles of the site and marginal or limited amounts of habitat occurs on-site.

Low: Limited habitat for the species occurs on-site and a known occurrence has been reported in the database, but not within five miles of the site, or suitable habitat strongly associated with the species occurs on-site, but no records were found in the database search.

Absent: Focused surveys were conducted and the species was not found, or species was found in the database search but habitat (including soils and elevation factors) is not present on-site, or the known geographic range of the species does not include the project area.

Note: Location information on some special-status species may be of questionable accuracy or unavailable. Therefore, for survey purposes, the environmental factors associated with a species' occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence. In addition, just because a record of a species does not exist in the databases does not mean it does not occur. In many cases, records may not be present in the databases because an area has not been surveyed for that particular species.

A desktop review of the NRCS' Web Soil Survey (NRCS 2019) and the corresponding USGS topographic maps was also conducted to determine if there were any blue line streams or drainages that might potentially fall under the jurisdiction of either federal or state agencies were present on the Project site.

3.2 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted on May 2, 2019, by walking parts of the Project site and driving the remainder to determine the vegetation communities and wildlife habitats on the Project site. The biologist documented the plant and animal species present on the Project site, and the Project site was assessed for the potential to provide habitat for special-status plant and wildlife species. Data were recorded on a Global Positioning System unit, field notebooks, and/or maps. Photographs were also taken during the survey to provide visual representation of the various vegetation communities within the Project site. The Project site was also examined to assess its potential to facilitate wildlife movement or function as a movement corridor for wildlife moving throughout the region. In addition, the biologist mapped the vegetation communities present on the Project site.

Plant and wildlife species, including any special-status species that were observed during the survey, were recorded. Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife nomenclature follows Society for the Study of Amphibians and Reptiles (SSAR, 2019), *Check-list of North American Birds* (American Ornithologist's Union [AOU] 2016), and the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

The site was walked to identify and characterize drainage ditches and other aquatic features at and near the project site. Boundaries of potential jurisdictional features were not formally delineated.

4.0 RESULTS

The results of the literature review and site reconnaissance are summarized below.

4.1 Literature Review/Database Queries

4.1.1 Special-Status Plants and Wildlife

The CNDDB and CNPS database searches were conducted on April 30, 2019. These queries reported 18 special-status plant species (Appendix A) and 20 special-status wildlife species (Appendix B) historically in the broad nine-quadrangle search area.

4.1.2 Designated Critical Habitat

The Project site is not located within NMFS- or USFWS-designated critical habitat.

4.1.3 Aquatic Features

The NWI identifies the irrigation canal as a riverine feature (Figure 3. *National Wetland Inventory*). No other aquatic features are mapped as intersecting the project alignment.

4.2 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted on May 2, 2019 by ECORP biologist Eric Stitt. Mr. Stitt has more than 20 years of experience conducting surveys and habitat assessments for special-status plant and wildlife species of Sacramento Valley. Air temperatures during the survey effort ranged from 70˚ to 74˚F. There was no cloud cover, and winds were mild at 1 to 5 mph.

4.2.1 Site Vegetation

The westernmost approximately 500 feet of the project alignment along Little Avenue is abutted to the south by an ephemeral, grass-lined roadside ditch. Small agricultural fields and residential landscaping dominate the land cover for approximately 1,700 feet as the alignment proceeds eastward. The easternmost approximately 700 feet of the alignment crosses industrial and horse properties, the irrigation canal, and terminates in an agricultural field/pasture.

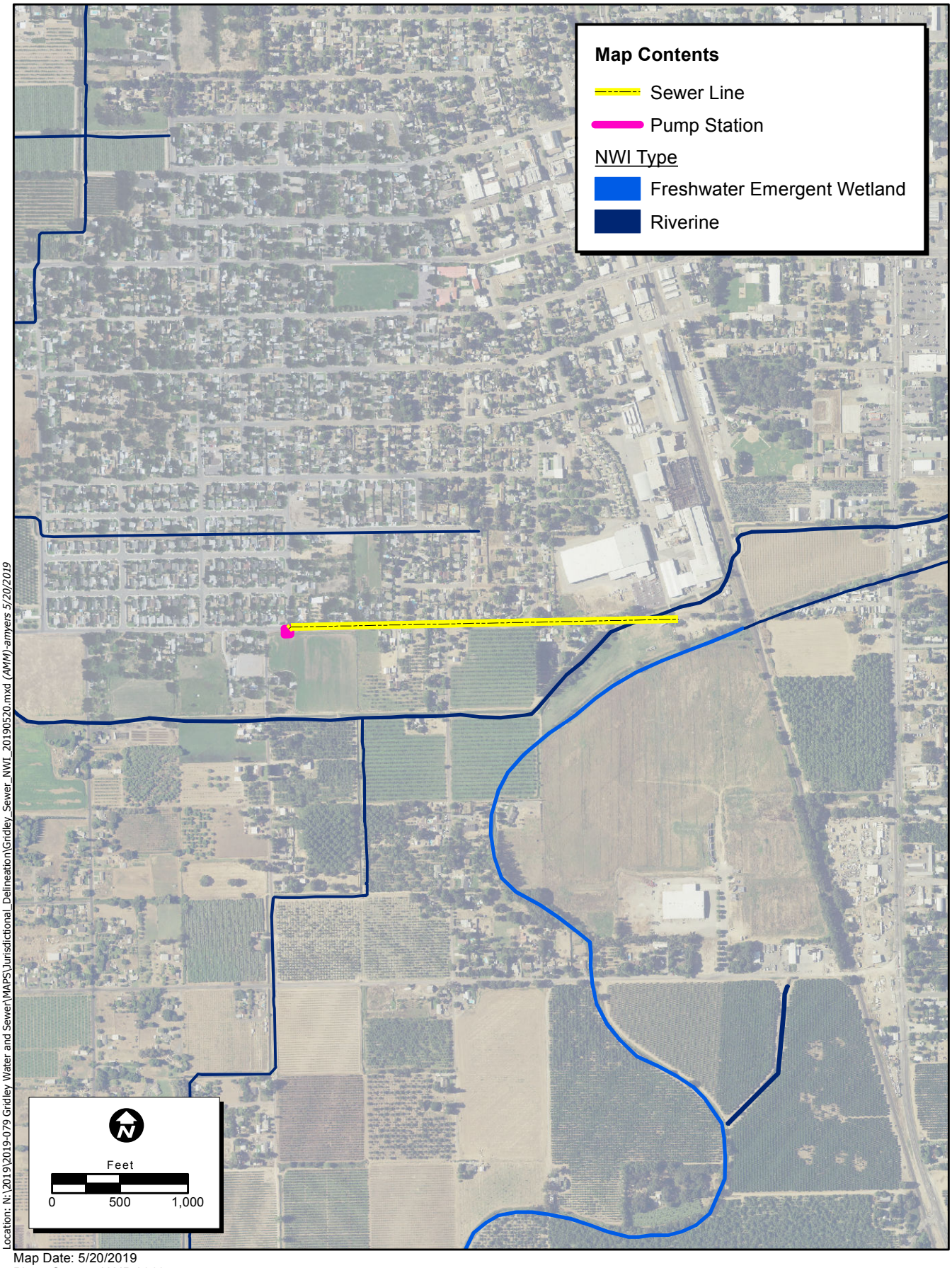
At the time of the field survey, the agricultural field to the south of Little Avenue was dominated by wild oats (*Avena fatua*), soft brome (*Bromus hordeaceus*), filaree (*Erodium botrys*), and ripgut brome (*Bromus diandrus*) occurs offsite south of Little Avenue. The easternmost pasture area was vegetated with nonnative grasses (primarily wild oats and Bermuda grass) and was used to park large trucks.

The roadside ditch adjacent to and south of Little Avenue was dry at the time of the field visit, but featured water plantain (*Alisma* sp.), Bermuda grass (*Cynodon dactylon*), willowherb (*Epilobium* sp.), and cheeseweed (*Malva parviflora*). Another roadside drainage ditch that appears to be tributary to the irrigation canal is located at the southeast corner of Little Avenue and Vermont Street (Figure 4. *Aquatic Resources*).

Trees along Little Avenue include ornamental species (*Populus* sp., *Cedrus* sp., *Ligustrum* sp., *Nerium oleander*, *Prunus* sp.) and a few valley oaks (*Quercus lobata*). Representative photographs of the Project site can be found in Appendix C. A full list of plant species observed is included in Appendix D.

4.2.2 Wildlife

Due to the urban and disturbed nature of the Project site and the fact that it is entirely encompassed by development, the Project site does not provide much habitat for wildlife species. However, wildlife observed during the survey included common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), house sparrow (*passer domesticus*), and mourning dove (*Zenaida macroura*). Appendix E contains a list of all wildlife species identified during the survey.



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Map Date: 5/20/2019
Photo Source: NAIP 2016

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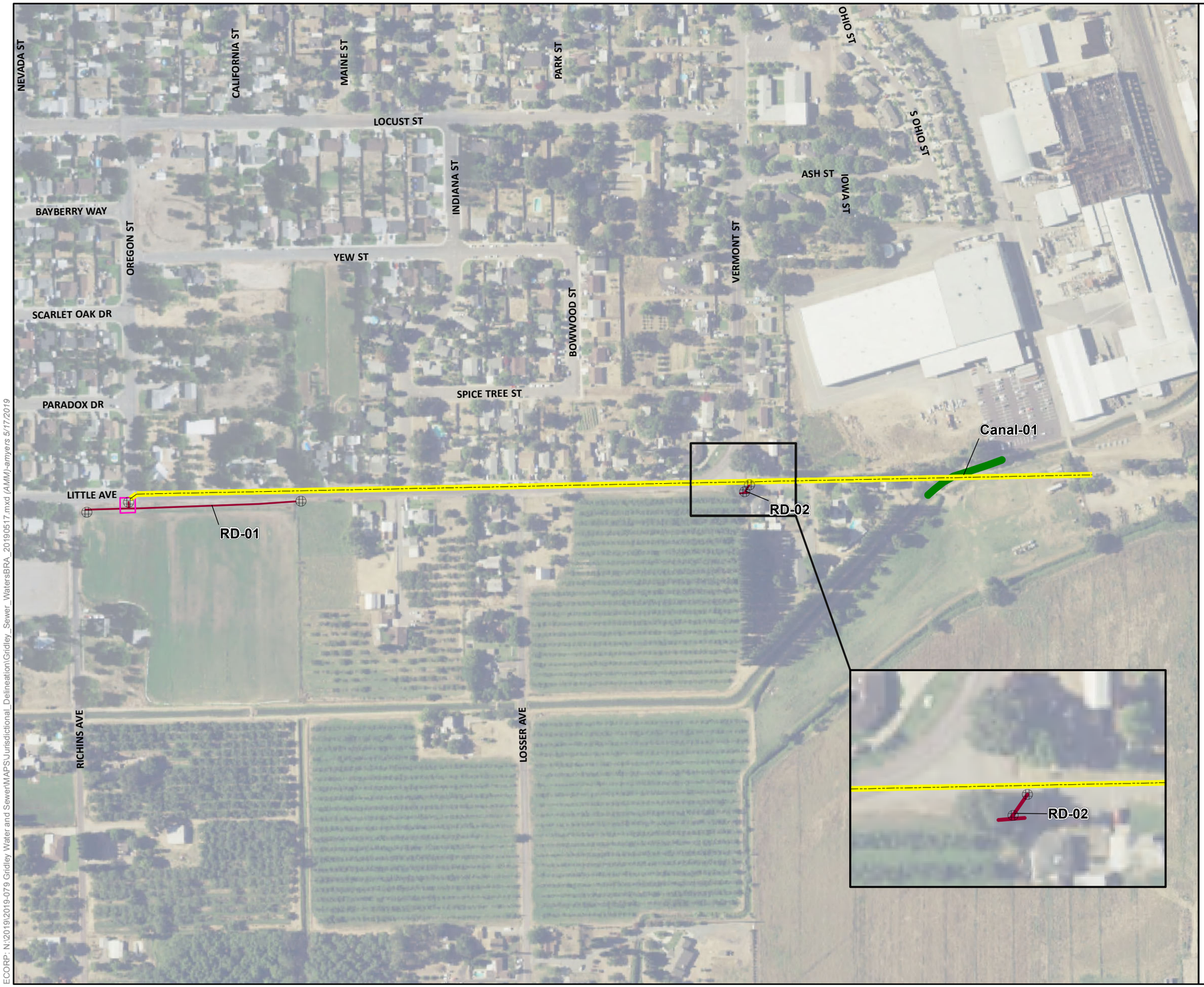
Figure 3. National Wetland Inventory

2019-079.02 Gridley Wastewater Project



Map Features

- Sewer Line
- Pump Station
- Culvert

Aquatic Resources (0.169 acre)

- Canal - 0.120 acre
- Roadside Ditch - 0.049 acre

Base Source:NAIP 2016

ECORP: N:\2019\2019-079 Gridley Water and Sewer\MAPS\Jurisdictional_Delineation\Gridley_Sewer_WatersBRA_20190517.mxd (AMM)-amyers 5/17/2019

Map Date: 5/17/2019

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Scale in Feet
0 300

Figure 4. Aquatic Resources

2019-079.02 Gridley Wastewater Project

4.2.3 Potential for Special-Status Plant and Wildlife Species to Occur at the Project Site

Of the 36 species returned in the database queries for the broad nine-quad area (Appendices A and B), only three species have a reasonable potential to occur at or near the Project site based on current site conditions and habitat characteristics. These are Sanford's arrowhead (*Sagittaria sanfordii*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Swainson's hawk (*Buteo swainsoni*). These are discussed below.

Sanford's Arrowhead

Sanford's arrowhead is a CNPS rank 1B.2 species (rare or endangered in California and elsewhere, moderately threatened in California) that is found in association with shallow freshwater marshes and swamps. It is a perennial rhizomatous herb that blooms from May through November and is known to occur at elevations ranging from sea level to 2,133 feet above MSL. This species was not observed in the roadside ditches during the May 2019 field visit. The ephemeral hydrology within these ditches is likely not suitable for Sanford's arrowhead and freshwater marsh habitat development.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is a small boring beetle listed as threatened under the federal ESA that is an obligate associate of elderberry shrubs (*Sambucus* sp.) for important stages in its life cycle. No elderberry shrubs were observed during the May 2019 reconnaissance survey, but the banks of the irrigation canal were only viewed from afar due to access constraints. As such, small elderberry shrubs could occur within distant bankside vegetation along the canal.

Swainson's Hawk

Swainson's hawk is listed as threatened under California's ESA. Although there are no nearby nesting records, large trees surrounding the Project site may provide potential nesting habitat for this species. Swainson's hawks are seasonal migrants to the Central Valley, and typically nest from March through July.

4.2.4 Potentially Regulated Aquatic Habitats/Features

A formal jurisdictional delineation of aquatic features was not conducted as part of this reconnaissance effort. The irrigation canal and wet portions of the roadside ditch adjacent to Little Avenue could be regulated under the federal CWA, the state Porter Cologne Water Quality Act, and sections of the California Fish and Game Code.

4.2.5 Nesting Birds

Potential nesting habitat for birds protected by the federal MBTA and California Fish and Game Code is present on and adjacent to the Project site within roadside trees and within landscape vegetation. Raptors typically breed between February and August, and songbirds and other passerines generally nest between March and August.

4.2.6 Wildlife Movement Corridors, Linkages, and Significant Ecological Areas

The Project site was assessed for its ability to function as a wildlife corridor. The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include such areas as greenbelts, refuge systems, underpasses, and biogeographic land bridges, for example. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix, which connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. Corridor use and wildlife movement patterns vary greatly among species.

The Project site is very disturbed, densely populated, and surrounded by development on all sides. Therefore, it does not provide movement opportunities for mobile wildlife. The Project site is also relatively isolated from larger, contiguous blocks of native habitat. Therefore, the Project site would not be considered a linkage or corridor between conserved natural habitat areas.

5.0 IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES

Implementation of the following mitigation measures will avoid impacts to potentially regulated resources.

5.1 Impacts to Nesting Birds

Nesting birds could be directly killed or injured as they establish nests in areas to be open-trenched or at bore pit entry/exit locations. Nesting birds (including Swainson's hawk) could also be directly killed or injured if trees are removed or trimmed during the nesting season. To avoid impacts to nesting birds, implement the following mitigation measures:

MM BIO-1: Nesting Bird Work Window. Complete all ground disturbing and vegetation-disturbing work during the nonnesting season to avoid impacts to nesting birds, which generally corresponds to the period September 1 through January 31.

MM BIO-2: Nesting Bird Pre-construction Surveys. If it is not feasible to implement Mitigation Measures BIO-1, a qualified biologist shall survey all areas to be disturbed by project construction no more than 14 days in advance of activities. Active bird nests identified during the survey effort shall be avoided until such time that the qualified biologist has determined that the nest(s) is vacant. Depending on the location of the active nest(s) the qualified biologist may establish a no-work buffer around the active nest.

5.2 Impacts to Valley Elderberry Longhorn Beetle

Elderberry shrubs supporting valley elderberry longhorn beetle may occur in the riparian vegetation near the irrigation canal. To avoid impacts to VELB, implement the following mitigation measure:

MM BIO-3: VELB Avoidance. A qualified biologist shall be consulted to ensure that the directional bore (beneath the irrigation canal) entry and exit pits are located to avoid impacts to elderberry shrubs. Elderberry plants present in the Project area shall be avoided by project activities.

5.3 Impacts to Aquatic Features

Impacts to the irrigation canal will be avoided by using a directional drill to install the new pipeline beneath the canal. Potential wetlands and aquatic habitat associated with Project site ditch features could be impacted by Project activities. Depending on the nature of these activities, regulatory agency permits may be necessary to allow such impacts. To mitigate potential impacts to these resources, implement the following mitigation measures:

MM BIO-4: Avoid Aquatic Features. Project activities shall avoid disturbance to the roadside ditch south of Little Avenue (Appendix C, Photo 1), and to the ditch feature that is tributary to the irrigation canal (Appendix C, Photo 5).

MM BIO-5: Jurisdictional Delineation and Permitting. If it is not feasible to implement MM BIO-4, a qualified biologist should be retained to complete a formal jurisdictional delineation of the two noted ditch features to determine their regulatory statuses and requirements. Depending on the results of this delineation effort, additional permitting efforts may be required prior to completing project activities in and near these ditch features.

6.0 LITERATURE CITED

AOU. 2016. Checklist of North American Birds, Seventh edition with Seventh Supplement.

Baldwin, B.G., G.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Eds. 2012. The Jepson Manual; Vascular Plants of California, Second Edition. Berkeley, CA, University of California Press.

Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A Cook, R.C. Dowler, C. Jones, D.J Schmidly, F.B. Stangl, Jr., R.A. Van Den Bussche, B. Wursig. 2014. Revised Checklist of North American Mammals North of Mexico. Museum of Texas Tech University.

Calflora. 2019. Information on California plants for education, research and conservation. [Web application]. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/. Accessed: Accessed 2019.

CDFG. 1984. California Endangered Species Act. California Fish and Game Code §§ 2050-2085.

CDFW. 2019a. RareFind California Department of Fish and Game Natural Diversity Database (CNDDB). California. Sacramento, CA, California Department of Fish and Wildlife, Biogeographic Data Branch.

_____. 2019b. State and Federally Listed Endangered and Threatened Animals of California. Sacramento (CA): State of California, the Resources Agency, Department of Fish and Wildlife. Accessed: May 2019.

_____. 2019c. Special Animals List. Sacramento (CA): State of California, the Resources Agency, Department of Fish and Game. Available: www.dfg.ca.gov/bdb/pdfs/SPAnimals.pdf. Accessed: May 2019.

City of Gridley 2030 General Plan. Available at: https://ceqanet.opr.ca.gov/2008072007/2

CNPS. 2019. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Rare Plant Program. Sacramento, CA. Website http://www.rareplants.cnps.org. Accessed: May 2019.

NRCS. 2019. "Web Soil Survey" from http://websoilsurvey.nrcs.usda.gov. Accessed: May 2019.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, 2nd ed. California Native Plant Society, Sacramento, CA.

SSAR. 2019. Scientific and Standard English Names of Amphibians and Reptiles of North American North of Mexico, With Comments Regarding Confidence in our Understanding. Eighth Edition. Committee on Standard English and Scientific Names.

USFWS. 1918. Migratory Bird Treaty Act. Section 16 of the U.S. Code (703-712), as amended 1989.

LIST OF APPENDICES

APPENDIX A

Special-Status Plant Species with Potential to Occur in the Project Area

Common Name *Scientific Name*	Status		Potential for Occurrence; Habitat	Survey Period
Ferris' milk-vetch *(Astragalus tener* var. *ferrisiae)*	Fed: CA: CNPS:	none none 1B.1	Absent; found in vernally mesic meadows and seeps and in sub-alkaline flats within valley and foothill grasslands (7'–246').	April–May
Heartscale *(Atriplex cordulata* var. *cordulata)*	Fed: CA: CNPS:	none none 1B.2	Absent; found in alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities (0'–1,837').	April–October
Lesser Saltscale *(Atriplex minuscula)*	Fed: CA: CNPS:	none none 1B.1	Absent; found in alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grassland (49'–656').	May–October
Pink creamsacs *(Castilleja rubicundula* var. *rubicundula)*	Fed: CA: CNPS:	none none 1B.2	Absent; found in serpentinite substrates in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland (66'–2,986').	April–June
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	Fed: CA: CNPS:	none none 1B.2	Absent; often on alkaline soils within chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grassland (0'–1,378').	May–November
Recurved larkspur *(Delphinium recurvatum)*	Fed: CA: CNPS:	none none 1B.2	Absent; found in chenopod scrub, cismontane woodland, and valley and foothill grasslands (10'–2,592').	March–June
Woolly rose–mallow *(Hibiscus lasiocarpos* var. *occidentalis)*	Fed: CA: CNPS:	none none 1B.2	Absent; found in marshes and freshwater swamps (0'–394').	June–September
Ahart's dwarf rush *(Juncus leiospermus* var. *ahartii)*	Fed: CA: CNPS:	none none 1B.2	Absent; found in mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005) (98'–751').	March–May
Slender Orcutt grass *(Orcuttia tenuis)*	Fed: CA: CNPS:	T E 1B.1	Absent; found in vernal pools, often gravelly (115'–5,774').	May–September
California alkali grass (*Puccinellia simplex*)	Fed: CA: CNPS:	none none 1B.2	Absent; found in alkaline, vernally mesic areas in sinks, flats and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools (7'–3,051').	March–May
Sanford's arrowhead *(Sagittaria sanfordii)*	Fed: CA: CNPS:	none none 1B.2	**Low**; found in shallow marshes and freshwater swamps. Potential habitat in ditch along Little Avenue and in tributary to the irrigation canal (0'–2,133').	May–October
Greene's tuctoria *(Tuctoria greenei)*	Fed: CA: CNPS:	E R 1B.1	Absent; found in vernal pools (98'–3,510').	May–July
Brazilian watermeal *(Wolffia brasiliensis)*	Fed: CA: CNPS:	none none 2B.3	Absent; found in assorted shallow freshwater marshes and swamps (66'–328').	April–December

Common Name *Scientific Name*	Status	Potential for Occurrence; Habitat	Survey Period

Federal Designations:
(Federal Endangered Species Act, USFWS)

E: federally listed, endangered
T: federally listed, threatened

State designations:
(California Endangered Species Act, CDFG)
E: state-listed, endangered
T: state-listed, threatened
R: CDFW Rare

CNPS designations:
1B: CRPR/Rare or Endangered in California and elsewhere.
2B: Plants rare, threatened, or endangered in California but more common elsewhere.
0.1: Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2: Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3: Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Source: California Natural Diversity Data Base (CNDDB) California Native Plant Society Electronic Inventory (CNPS); Gridley, West of Biggs, Biggs, Palermo, Pennington, Honcut, Sutter Buttes, Sutter, and Yuba City 7.5-minute topographic quadrangles

Special-Status Wildlife Species with Potential to Occur in the Project Area

Common Name *Scientific Name*	Status		Habitat	Potential for Occurrence
INVERTEBRATES				
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: CA:	T none	Found in seasonally inundated vernal pools and wetlands.	Absent
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: CA:	E none	Found in seasonally inundated vernal pools and wetlands.	Absent
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: CA:	T none	Uses elderberry shrubs (*Sambucus*) as the obligate host for young life stages.	**Low**: A determinate-level survey was not performed for elderberry shrubs, obligate host for VELB. Potential habitat at the irrigation canal crossing.
Fish				
Chinook salmon (Central Valley spring-run ESU) *Oncorhynchus tshawytscha*	Fed: CA:	T T	undammed rivers, streams, creeks	Absent
Steelhead (CA Central Valley ESU) *Oncorhynchus mykiss*	Fed: CA:	T none	undammed rivers, streams, creeks	Absent
AMPHIBIANS				
California tiger salamander *Ambystoma californiense*	Fed: CA:	T T	Uses vernal pools, wetlands and adjacent grassland or oak woodland; needs underground refuge, usually ground squirrel or gopher burrows. Uses vernal pools, ponds, and seasonal wetlands for breeding. Largely terrestrial as adults.	Absent
Western Spadefoot *Spea hammondii*	Fed: CA:	none SSC	A California near-endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley south through San Diego into northern Baja.	Absent

Common Name *Scientific Name*	Status		Habitat	Potential for Occurrence
Foothill Yellow-legged Frog *Rana boylii*	Fed: CA:	none C and T;SSC	Uses sunny to partially-shaded shallow streams and creeks with a rocky or cobble substrate. Needs cobble as egg-laying substrate, and larvae (with adaptations for high velocity water) need at least 15 weeks to reach metamorphosis. Occurs from sea level to 6000 feet.	Absent
REPTILES				
Northwestern Pond Turtle *Actinemys marmorata*	Fed: CA:	none SSC	This turtle requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, creeks, detention basins, and irrigation ditches.	Absent
Giant Garter Snake *Thamnophis gigas*	Fed: CA:	T T	A large, aquatic snake of freshwater ditches, sloughs, and marshes in the Central Valley. Almost extinct from the southern parts of its range. Needs emergent macrophytic vegetation, soil or sit substrates, and upland habitat for refuge from winter floods and summer heat.	Absent
BIRDS				
California black rail *Laterallus jamaicensis coturniculus*	Fed: CA:	BCC T/FP	Uses salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer counties)	Absent
Swainson's hawk (nesting) *Buteo swainsoni*	Fed: CA:	BCC T	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during discing/harvesting, irrigated pastures	**Low**. Although no nesting Swainson's hawks were documented during the reconnaissance, potential nesting habitat is present in large trees surrounding the Project site.

Common Name *Scientific Name*	Status		Habitat	Potential for Occurrence
Bald eagle (nesting and wintering) *Haliaeetus leucocephalus*	Fed: CA:	DL/BCC E	Typically breeds in forested areas near large bodies of water in the northern half of California; they nest in trees and rarely on cliffs usually absent of human disturbance; wintering habitat includes forest and woodland communities near waterbodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands	Absent
Bank swallow (nesting) *Riparia riparia*	Fed: CA:	none T	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California.	Absent
Burrowing owl (burrow sites) *Athene cunicularia*	Fed: CA:	BCC SSC	Breeds in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., California ground squirrels). May also use human-made habitats such as agricultural fields, golf courses, cemeteries, roadsides, airports, vacant urban lots, and fairgrounds.	Absent
Greater sandhill crane (nesting and wintering) *Antigone canadensis tabida*	Fed: CA:	None T/FP	In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (corn, wheat, milo, rice, oats, barley), tilled fields, recently planted fields, alfalfa fields, row crops and burned rice fields.	Absent
Northern harrier (nesting) *Circus cyaneus*	Fed: CA:	none SSC	Breeds on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	Absent

Common Name *Scientific Name*	Status		Habitat	Potential for Occurrence
Tricolored blackbird (nesting colony) *Agelaius tricolor*	Fed: CA:	BCC C and SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	Absent
Western Yellow-billed cuckoo *Coccyzus americanus occidentalis*	Fed: CA:	T/BCC E	In northern California, they nest along the upper Sacramento River and the Feather River (Butte, Yuba, Sutter counties). Nests in riparian woodland.	Absent

Federal Designations:
(Federal Endangered Species Act, USFWS)

E: federally listed, endangered
T: federally listed, threatened
DL: federally delisted
BCC Bird of Conservation Concern

State designations:
(California Endangered Species Act, CDFW)

E State-listed, endangered
T: State-listed, threatened
SSC: California Species of Special Concern
FP: Fully Protected species
C: Candidate for state listing

APPENDIX C

Representative Site Photographs

Photo 1: Ditch along south side of Little Avenue, looking east along paved road work area.

Photo 2: Looking west along the north side of Little Avenue into the work area.

Photo 3: View looking east through eastern extent of wastewater pipe work area

Photo 4: View looking east into private property section of project.

Photo 5: View looking east showing tributary ditch feature to Morrison Canal.

Photo 6: View looking west showing tributary to Morrison Canal, north of proposed alignment.

APPENDIX D

Plant List

SCIENTIFIC NAME	COMMON NAME
Quercus lobata	Valley oak
Quercus wizlizeni	Live oak
Zelkova sp.	Zelkova
Vitis sp.	Grapevine
Prunus sp.	Plum/almond
Populus sp.	Poplar
Cedrus sp.	Cedar
Ligustrum sp.	Privet
Nerium oleander	Oleander
Fraxinus sp.	Ash
Washingtonia sp.	Fan palm
Phoenix sp.	Date palm
Cynodon dactylon	Bermuda grass

APPENDIX E

Wildlife List

SCIENTIFIC NAME	COMMON NAME
Columba livia	rock pigeon
Corvus corax	common raven
Haemorhous mexicanus	house finch
Mimus polyglottos	northern mockingbird
Sturnus vulgaris	European starling
Zenaida macroura	mourning dove

Appendix C

Noise Assessment

Little Avenue Lift Station & Forced Main Replacement Project

Noise Impact Assessment

Gridley, California

Prepared For:
City of Gridley
685 Kentucky Street
Gridley, California 95948
June 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, construction monitoring, and compliance reporting.

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ECORP Consulting, Inc.
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1.0 INTRODUCTION

This report documents the results of a noise impact assessment for the Little Avenue Lift Station and Forced Main Replacement Project (Project), which includes the installation of a 2,872-linear foot forced main wastewater pipeline and a lift station, the relocation of one control box, and the installation of a backup generator. This report was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the City of Gridley. The purpose of this report is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

1.1 Project Description and Location

The Project area is located in the City of Gridley along Little Avenue between Oregon Street on the west and Vermont Street on the east. From Vermont Street, the Project area continues east along a private road, under a water conveyance canal, and into an open field in the southern part of the City of Gridley (see Figure 1). The majority of Proposed Project is located within the Little Avenue right-of-way (ROW). However, approximately 670 feet is proposed to occur within the City's utility easement on private land and a section that crosses under an irrigation canal. The Project is located in the northern half of Section 1 of Township 17 North, Range 2 East, (Mount Diablo Base and Meridian). The approximate center of the site is located at latitude 39º21'20" N and longitude 41º121'56" W. Adjacent uses include single family homes and industrial uses to the north, agricultural land to the east, rural residential homes and agricultural uses to the south, and single-family homes and agricultural uses to the west.

The Proposed Project is the replacement of approximately 2,872 linear feet of 4-inch and 6-inch forced main wastewater pipeline with a 10-inch pipeline, one lift station, relocation of one control box, and the installation of a backup generator. The Project would abandon in place portions of the pipeline while removing other portions. Most of the construction would occur within the existing Little Avenue ROW, except for approximately 670 feet which would occur within the City's utility easement on private land and the section crossing under an irrigation canal. The replacement of the pipeline under an irrigation canal would be completed using horizontal direction drilling with fusible PVC pipe. Installation would be completed mostly by open trenching, with one section of directional drilling beneath an irrigation canal.

On average, there would be 10 employees at the Project site while construction activities are occurring. Construction is anticipated to start in May of 2021 and take approximately 100 days to complete.

Installation would be completed mostly by open trenching. The trenches are anticipated to be 5-feet deep and 3-feet wide. All trenches would be backfilled with existing native soils or a combination of new AB, AC, and pipe bedding material. For the area where trenching is required in the street travel way, the asphalt and fill material would be repaired per City standards. Approximately 800 cubic yards of import and 800 cubic yards of export soil material would be required to complete the Project. This includes export of excavation from pipe zone and road way material in trench zone and the import of new pipe bedding material. Most of the trench material would be reused in the backfill of the trench.

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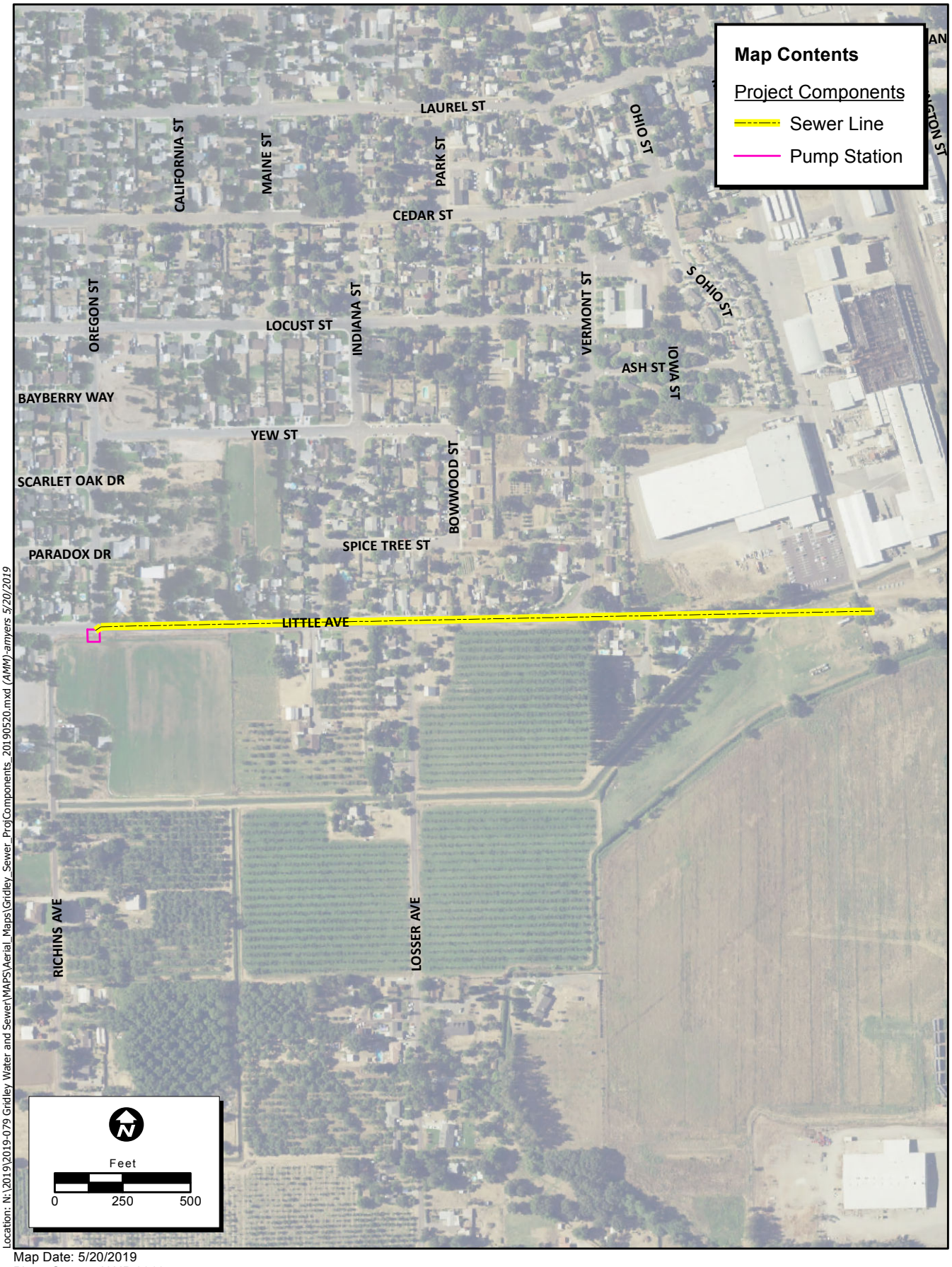

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Map Date: 5/20/2019
Photo Source: NAIP 2016

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Figure 1. Project Elements

2019-079.02 Gridley Wastewater Project

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2.0 NOISE BACKGROUND

2.1 Fundamentals of Sound and Environmental Noise

Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions (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 decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Typical noise levels associated with common noise sources are depicted in **Figure 2**.

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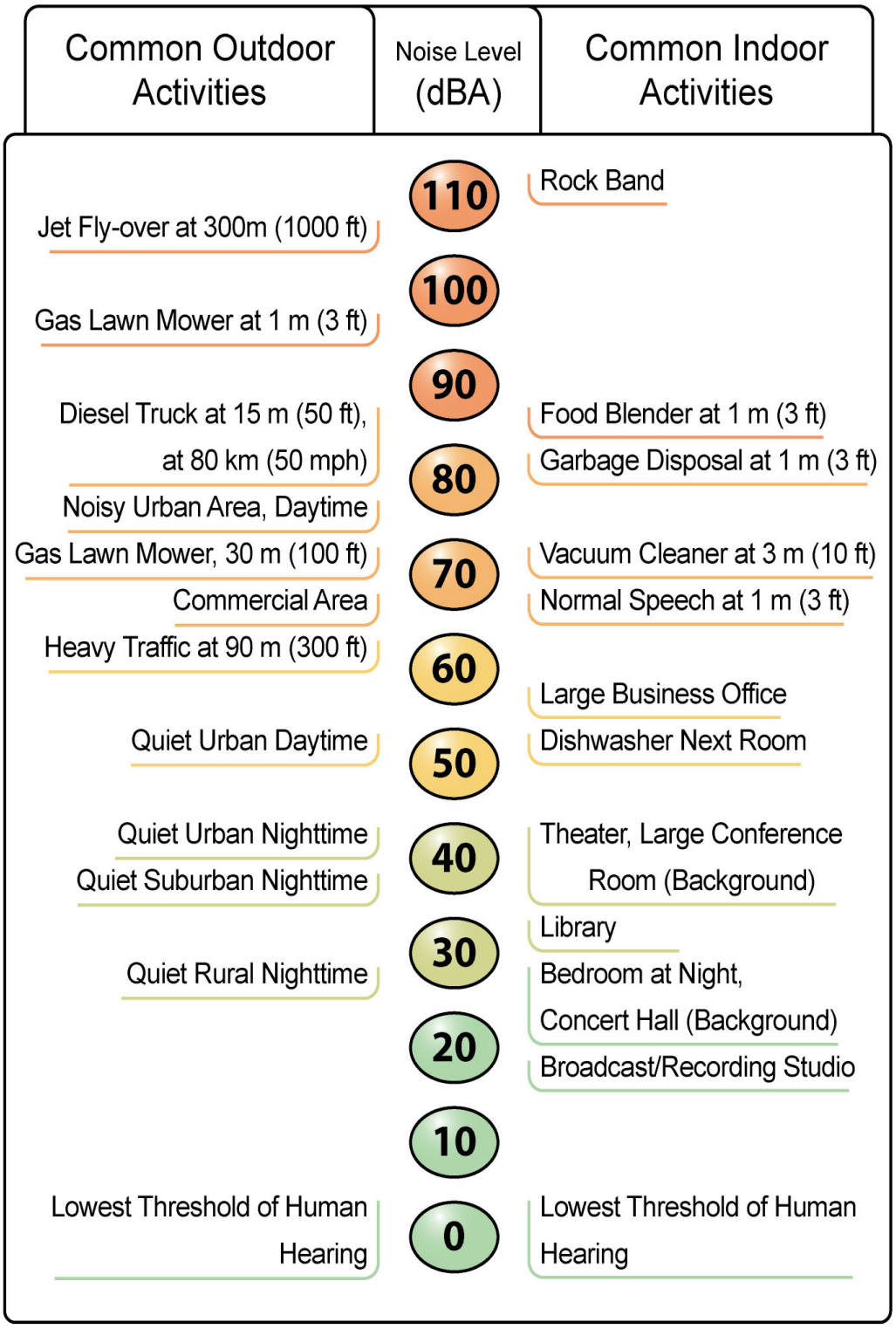

Source: Caltrans 2012

FIGURE 2. COMMON NOISE LEVELS

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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 for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2011). 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 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about 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 35 dBA or greater (WEAL 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 homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

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:

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

- **L_{dn} (Day-Night Average**) 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}.
- **CNEL (Community Noise Equivalent Level)** 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. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.

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 A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

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

Effects of Noise on People

Hearing Loss

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

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

2.2 Fundamentals of Environmental Groundborne Vibration

Vibration Sources and Characteristics

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

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. A PPV descriptor with units of inches per section (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints, for the purposes of this analysis.

Vibration Sources and Characteristics

Table 1 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be

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

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 1. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Human Reaction	Effect on Buildings
0.006–0.019	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2004

2.3 Existing Environmental Noise Setting

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 include adjacent single-family homes.

Existing Ambient Noise Environment

The noise environment in the Proposed Project area in impacted by various noise sources. The primary sources of noise in the Gridley Planning Area include State Route (SR 99) and other roadways, industrial operations, agricultural activities, and railroad operations. 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 two miles from any airport.

3.0 REGULATORY FRAMEWORK

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 promulgate 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.

4.0 IMPACT ASSESSMENT

Thresholds of Significance

Criteria for determining the significance of noise impacts were developed based on information contained in the CEQA Guidelines Appendix G. According to the guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

a) 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.

b) Generation of excessive groundbore vibration or groundborne noise levels.

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.

For purposes of this analysis and where applicable, the City of Gridley noise standards were used for evaluation of Project-related noise impacts.

Methodology

In order to estimate the worst-case construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, predicted construction noise levels were calculated utilizing the Federal Highway Administration's Roadway Construction Model (2006). Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from the Caltrans guidelines set forth above. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby land uses.

Impact Analysis

PROJECT CONSTRUCTION NOISE

Would the Project Result in Short-Term Construction-Generated Noise in Excess of City Standards?

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 on-site 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., building construction, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 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 receptors in the vicinity of the construction site.

Table 2 indicates the anticipated noise levels of construction equipment. The average noise levels presented in **Table 2** are based on the quantity, type, and acoustical use factor for each type of equipment that is anticipated to be used.

Table 2. Maximum Noise Levels Generated by Construction Equipment		
Type of Equipment	**Maximum Noise (L_{max}) at 50 Feet (dBA)**	**Maximum 8-Hour Noise (L_{eq}) at 50 Feet (dBA)**
Boring Machine	83.0	80.0
Crane	80.6	72.6
Dozer	81.7	77.7
Excavator	80.7	76.7
Generator	80.6	77.6
Grader	85.0	81.0
Paver	77.2	74.2
Paving Machine	89.5	82.5
Roller	80.0	73.0
Tractor	84.0	80.0
Dump Truck	76.5	72.5
Concrete Pump Truck	81.4	74.4
Welder	74.0	70.0

Source: Federal Highway Administration, Roadway Construction Noise Model (FHWA-HEP-05-054), dated January 2006.

Nearby noise-sensitive land uses consist of residences directly adjacent to the 0.5-mile long the Project site boundary. As depicted in **Table 2**, noise levels generated by individual pieces of construction equipment typically range from approximately 70.0 dBA L_{eq} to 82.5 dBA L_{eq} at 50 feet, and thus adjacent residential land uses could be exposed to temporary and intermittent noise levels beyond 82.5 dBA L_{eq} with L_{max} events even louder.

The City does not promulgate 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. Furthermore, the City of Gridley is an urban community and construction noise is generally accepted as a reality within the urban environment. Additionally, construction would occur through the Project site and would not be concentrated at one point. Therefore, noise generated during construction activities, as long as conducted within the permitted hours, would not exceed City noise standards.

PROJECT OPERATIONAL NOISE

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of City Standards During Operations?

The Proposed Project involves the construction of an approximately 0.5-mile-long pipeline. 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.

PROJECT GROUNDBORNE VIBRATION

Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would only be 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 (pile drivers are not necessary for the completion of the Project). 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 anticipated Project construction equipment are summarized in **Table 3**.

Table 3. Vibration Source Amplitudes for Construction Equipment

Equipment Type	Peak Particle Velocity at 20 Feet (inches per second)
Large Bulldozer	0.124
Caisson Drilling	0.124
Loaded Trucks	0.106
Rock Breaker	0.115
Jackhammer	0.049
Small Bulldozer/Tractor	0.004

Source: FTA 2018

The City does not promulgate numeric thresholds pertaining to vibration associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans's (2004) recommended standard of 0.2 inches per second peak particle velocity with respect to the prevention of structural damage for older residential buildings is used as a threshold (see **Table 2**). This is also the level at which vibrations may begin to annoy people in buildings.

The nearest structures to the construction site are located within 20 feet of potential construction zones. Based on the vibration levels presented in **Table 3**, ground vibration generated by heavy-duty equipment would not be anticipated to exceed approximately 0.124 inches per second peak particle velocity at 20 feet. Thus, structures at 20 feet distance would not be negatively affected. Since predicted vibration levels at the nearest structures would not exceed recommended criteria.

Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

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 during operations.

AIRPORT NOISE

Would the Project Expose People Residing or Working in the Project Area to Excessive Airport Noise Levels?

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 two miles from any airport. The Proposed Project will not expose people residing or working in the Project area to excess airport noise levels.

CUMULATIVE NOISE IMPACTS

Cumulative Construction Noise

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. Construction noise for the Proposed Project was determined to be less than significant following compliance with the City Municipal Code. Therefore, the Project would not contribute to cumulative impacts during construction.

Cumulative Stationary Source Noise Impacts

As previously described, the Project would not contribute to operational noise levels.

5.0 REFERENCES

Caltrans (California Department of Transportation). 2002. *Transportation Related Earthborne Vibrations*.

———. 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*.

———. 2012. *IS/EA Annotated Outline*. http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm.

EPA (US Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*.

FHWA (Federal Highway Administration). 2006. *Roadway Construction Noise Model*.

———. 2011. *Effective Noise Control During Nighttime Construction*. http://ops.fhwa.dot.gov/wz/workshops/accessible/schexnayder_paper.htm.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*.