

**DRAFT INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION**

**FRANKLIN COUNTY WATER DISTRICT
WASTEWATER COLLECTION AND
TREATMENT SYSTEM
IMPROVEMENTS**

FEBRUARY 2020



Summary Form for Electronic Document Submittal

Form F

Lead agencies may include 15 hardcopies of this document when submitting electronic copies of Environmental Impact Reports, Negative Declarations, Mitigated Negative Declarations, or Notices of Preparation to the State Clearinghouse (SCH). The SCH also accepts other summaries, such as EIR Executive Summaries prepared pursuant to CEQA Guidelines Section 15123. Please include one copy of the Notice of Completion Form (NOC) with your submission and attach the summary to each electronic copy of the document.

SCH #: _____

Project Title: Franklin County Water District Wastewater Collection and Treatment System Improvements

Lead Agency: Franklin County Water District

Contact Name: Brenda Wey

Email: N/A Phone Number: 209-723-1353

Project Location: Merced, CA 95348 - Merced County

City

County

Project Description (Proposed actions, location, and/or consequences).

The Franklin County Water District (District) proposes sewer line and wastewater treatment plant improvements that will bring the District's aging infrastructure to its permitted State standard and prevent potential unsanitary conditions (Project). Portions of the District's sewer collection system are severely deteriorated and in need of replacement or rehabilitation. The proposed Project area includes other segments of the District's wastewater collection system as a contingency in the event that additional sewer pipe segments are found to be in need of repair. Proposed improvements to the sewer line consist of a combination of spot repairs, the Traditional construction method of dig and replace, and the Trenchless method of cured-in-place pipe (CIPP). Proposed improvements to the sewer line consist of the rehabilitation and replacement of sewer mains, as well as upgrades to the existing wastewater treatment facility (WWTF) to add an extended aeration activated sludge facility, and the construction of additional evaporation/percolation ponds.

Identify the project's significant or potentially significant effects and briefly describe any proposed mitigation measures that would reduce or avoid that effect.

In order to avoid significant or potentially significant impacts occurring to biological, cultural, geological, or hydrological resources the following mitigation measures will be taken.
 BIO-1: Pre-activity surveys for sensitive species, BIO-2: Pre-activity surveys for San Joaquin Kit Fox, American Badger, and Swainson's hawk (and other listed species of special status) BIO-3: Avoidance of burrows for San Joaquin Kit Fox, American Badger, and Swainson's hawk (and other listed species of special status), BIO-4: Avoidance and minimization measures for San Joaquin Kit Fox, American Badger, and Swainson's Hawk (and other listed species of special status), BIO-5: Pre-activity nesting bird surveys, BIO-6: Pre-activity surveys for Swainson's Hawk nests, BIO-7: Swainson's Hawk nest avoidance, CUL-1: WEAP prior to Project ground disturbance, CUL-2: Upon discovery of human remains, excavation or disturbance of the area will cease and the County Coroner/Sheriff's Office will be contacted, GEO-1: prior to ground disturbance, an Erosion Control Plan will be prepared, GEO-2: the District will provide for a Project-specific paleontological resource impact mitigation program (PRIMP) prior to ground disturbance, HYD-1: prior to construction, the Franklin CWD will submit an approved copy of: (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board, HYD-2: The Franklin CWD shall limit grading to the minimum area necessary for construction and operation of the Project. Final grading plans shall include BMPs to limit on-site and off-site erosion.

If applicable, describe any of the project's areas of controversy known to the Lead Agency, including issues raised by agencies and the public.

There are no known areas of controversy.

Provide a list of the responsible or trustee agencies for the project.

SJVAPCD
United States Dept. of Fish and Wildlife
California Dept. of Fish and Wildlife Region #4
Regional WQCB #5F
City of Merced
County of Merced

**NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
FOR WASTEWATER COLLECTION AND TREATMENT SYSTEM IMPROVEMENTS**

NOTICE IS HEREBY GIVEN that the Franklin County Water District is circulating for public review an Initial Study/Mitigated Negative Declaration (IS/MND) in accordance with the California Environmental Quality Act (CEQA) for the proposed Wastewater Collection and Treatment System Improvements.

PROJECT LOCATION: Located in and around the unincorporated Community of Franklin-Beachwood.

PROJECT DESCRIPTION: The Franklin County Water District (District) proposes sewer line and wastewater treatment plant improvements that will bring the District's aging infrastructure to its permitted State standard and prevent potential unsanitary conditions (Project). Portions of the District's sewer collection system are severely deteriorated and in need of replacement or rehabilitation. The proposed Project area includes other segments of the District's wastewater collection system as a contingency in the event that additional sewer pipe segments are found to be in need of repair.

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Construction is anticipated to begin in January 2022 and would take approximately one year, finishing in January 2023.

PUBLIC REVIEW: Franklin County Water District is making the proposed IS/MND available to interested agencies and members of the public for review and comment. A 30-day public review period will begin on February 14, 2020 and end at 5 PM on March 16, 2020.

DOCUMENT AVAILABILITY: The IS/MND and separately bound appendices is available for review during regular business hours at the Franklin County Water District Office, 2115 Drake Ave in Merced, CA 95384. Written comments may be submitted to Brenda Wey at the above address prior to the end of the public review period.

A meeting of the Franklin County Water District Board of Directors will be held to consider the approval of the Draft Mitigated Negative Declaration at the District Office (see address above) at 5:30 PM, March 26, 2020 or as soon thereafter as may be heard.

For additional information, please call Brenda Wey, General Manager at (209) 723-1535.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: _____

Lead Agency: _____ Contact Person: _____

Mailing Address: _____ Phone: _____

City: _____ Zip: _____ County: _____

Project Location: County: _____ City/Nearest Community: _____

Cross Streets: _____ Zip Code: _____

Longitude/Latitude (degrees, minutes and seconds): _____° _____' _____" N / _____° _____' _____" W Total Acres: _____

Assessor's Parcel No.: _____ Section: _____ Twp.: _____ Range: _____ Base: _____

Within 2 Miles: State Hwy #: _____ Waterways: _____

Airports: _____ Railways: _____ Schools: _____

Section Cont'd: 16, 22, 23

Document Type:

CEQA: <input type="checkbox"/> NOP	<input type="checkbox"/> Draft EIR	NEPA: <input type="checkbox"/> NOI	Other: <input type="checkbox"/> Joint Document
<input type="checkbox"/> Early Cons	<input type="checkbox"/> Supplement/Subsequent EIR	<input type="checkbox"/> EA	<input type="checkbox"/> Final Document
<input type="checkbox"/> Neg Dec	(Prior SCH No.) _____	<input type="checkbox"/> Draft EIS	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Mit Neg Dec	Other: _____	<input type="checkbox"/> FONSI	_____

Local Action Type:

<input type="checkbox"/> General Plan Update	<input type="checkbox"/> Specific Plan	<input type="checkbox"/> Rezone	<input type="checkbox"/> Annexation
<input type="checkbox"/> General Plan Amendment	<input type="checkbox"/> Master Plan	<input type="checkbox"/> Prezone	<input type="checkbox"/> Redevelopment
<input type="checkbox"/> General Plan Element	<input type="checkbox"/> Planned Unit Development	<input type="checkbox"/> Use Permit	<input type="checkbox"/> Coastal Permit
<input type="checkbox"/> Community Plan	<input type="checkbox"/> Site Plan	<input type="checkbox"/> Land Division (Subdivision, etc.)	<input type="checkbox"/> Other: _____

Development Type:

<input type="checkbox"/> Residential: Units _____ Acres _____	<input type="checkbox"/> Transportation: Type _____
<input type="checkbox"/> Office: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Mining: Mineral _____
<input type="checkbox"/> Commercial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Power: Type _____ MW _____
<input type="checkbox"/> Industrial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Waste Treatment: Type _____ MGD _____
<input type="checkbox"/> Educational: _____	<input type="checkbox"/> Hazardous Waste: Type _____
<input type="checkbox"/> Recreational: _____	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Water Facilities: Type _____ MGD _____	

Project Issues Discussed in Document:

<input type="checkbox"/> Aesthetic/Visual	<input type="checkbox"/> Fiscal	<input type="checkbox"/> Recreation/Parks	<input type="checkbox"/> Vegetation
<input type="checkbox"/> Agricultural Land	<input type="checkbox"/> Flood Plain/Flooding	<input type="checkbox"/> Schools/Universities	<input type="checkbox"/> Water Quality
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Forest Land/Fire Hazard	<input type="checkbox"/> Septic Systems	<input type="checkbox"/> Water Supply/Groundwater
<input type="checkbox"/> Archeological/Historical	<input type="checkbox"/> Geologic/Seismic	<input type="checkbox"/> Sewer Capacity	<input type="checkbox"/> Wetland/Riparian
<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Minerals	<input type="checkbox"/> Soil Erosion/Compaction/Grading	<input type="checkbox"/> Growth Inducement
<input type="checkbox"/> Coastal Zone	<input type="checkbox"/> Noise	<input type="checkbox"/> Solid Waste	<input type="checkbox"/> Land Use
<input type="checkbox"/> Drainage/Absorption	<input type="checkbox"/> Population/Housing Balance	<input type="checkbox"/> Toxic/Hazardous	<input type="checkbox"/> Cumulative Effects
<input type="checkbox"/> Economic/Jobs	<input type="checkbox"/> Public Services/Facilities	<input type="checkbox"/> Traffic/Circulation	<input type="checkbox"/> Other: _____

Present Land Use/Zoning/General Plan Designation:

Project Description: (please use a separate page if necessary)

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".
If you have already sent your document to the agency please denote that with an "S".

<input type="checkbox"/> Air Resources Board	<input type="checkbox"/> Office of Historic Preservation
<input type="checkbox"/> Boating & Waterways, Department of	<input type="checkbox"/> Office of Public School Construction
<input type="checkbox"/> California Emergency Management Agency	<input type="checkbox"/> Parks & Recreation, Department of
<input type="checkbox"/> California Highway Patrol	<input type="checkbox"/> Pesticide Regulation, Department of
<input type="checkbox"/> Caltrans District # _____	<input type="checkbox"/> Public Utilities Commission
<input type="checkbox"/> Caltrans Division of Aeronautics	<input type="checkbox"/> Regional WQCB # _____
<input type="checkbox"/> Caltrans Planning	<input type="checkbox"/> Resources Agency
<input type="checkbox"/> Central Valley Flood Protection Board	<input type="checkbox"/> Resources Recycling and Recovery, Department of
<input type="checkbox"/> Coachella Valley Mtns. Conservancy	<input type="checkbox"/> S.F. Bay Conservation & Development Comm.
<input type="checkbox"/> Coastal Commission	<input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
<input type="checkbox"/> Colorado River Board	<input type="checkbox"/> San Joaquin River Conservancy
<input type="checkbox"/> Conservation, Department of	<input type="checkbox"/> Santa Monica Mtns. Conservancy
<input type="checkbox"/> Corrections, Department of	<input type="checkbox"/> State Lands Commission
<input type="checkbox"/> Delta Protection Commission	<input type="checkbox"/> SWRCB: Clean Water Grants
<input type="checkbox"/> Education, Department of	<input type="checkbox"/> SWRCB: Water Quality
<input type="checkbox"/> Energy Commission	<input type="checkbox"/> SWRCB: Water Rights
<input type="checkbox"/> Fish & Game Region # _____	<input type="checkbox"/> Tahoe Regional Planning Agency
<input type="checkbox"/> Food & Agriculture, Department of	<input type="checkbox"/> Toxic Substances Control, Department of
<input type="checkbox"/> Forestry and Fire Protection, Department of	<input type="checkbox"/> Water Resources, Department of
<input type="checkbox"/> General Services, Department of	
<input type="checkbox"/> Health Services, Department of	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Housing & Community Development	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency)

Starting Date _____ Ending Date _____

Lead Agency (Complete if applicable):

Consulting Firm: _____	Applicant: _____
Address: _____	Address: _____
City/State/Zip: _____	City/State/Zip: _____
Contact: _____	Phone: _____
Phone: _____	

Signature of Lead Agency Representative: _____ /s/ Brenda Wey Date: _____

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

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The District owns and operates a districtwide sanitary sewer collection system that currently services approximately 1,706 connections, primarily residential. The system is comprised of approximately 78,309 linear feet of 6-, 8-, 10-, and 12-inch diameter clay and plastic PVC pipelines, 174 manholes, and 36 cleanouts. Portions of the District sewer collection system are severely deteriorated and in need of replacement or rehabilitation.

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Construction is anticipated to begin in January 2022 and would take approximately one year, finishing in January 2023.

State Clearinghouse (SCH)
Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044
OVERNIGHT COURIER

California Air Resources Board
SCH DISTRIBUTION

California Department of Transportation
SCH DISTRIBUTION

California Department of
Toxic Substances Control
SCH DISTRIBUTION

California Department of Fish and Wildlife
SCH DISTRIBUTION

Native American Heritage Commission
SCH DISTRIBUTION

Merced County Association of Governments
369 West 18th Street
Merced, CA 95340

Central Valley RWQCB
SCH DISTRIBUTION

State Water Resources Control Board
Water Quality
SCH DISTRIBUTION

San Joaquin Valley
Air Pollution Control District
Central Region
1990 E. Gettysburg Avenue
Fresno, CA 93726

California Department of Water Resources
SCH DISTRIBUTION

City of Merced
Engineering Department
678 West 18th Street
Merced, CA 95340

Merced County Planning Department
678 West 18th Street
Merced, CA 95340

North Valley Yokut Tribe
Katherine Perez, Chairperson
P.O. Box 717
Linden, CA 95236

Merced County Public Works
Department
1776 Grogan Avenue
Merced, CA 95341

Merced County Library
Merced County
2222 M Street
Merced, CA 95340

Southern Sierra Miwuk Nation
William Leonard, Chairperson
P.O. Box 186
Mariposa, CA 95338

Geologic Energy Management Division
4800 Stockdale Highway, #417
Bakersfield, CA 93309

US Fish and Wildlife Service
2800 Cottage Way, W-2606
Sacramento, CA 95825

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA 95632

Dumna Wo-Wah Tribe
Robert Ledger Sr., Chairperson
2216 East Hammond Street
Fresno, CA 93602

**DRAFT INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION**

**FRANKLIN COUNTY WATER DISTRICT
WASTEWATER COLLECTION AND TREATMENT
SYSTEM IMPROVEMENTS**

Prepared for:

Franklin County Water District
2115 Drake Avenue
Merced, CA 95348
Contact Person: Brenda Wey, District Manager
Phone: (209) 723-1353

Consultant:



2816 Park Avenue
Merced, CA 95348
Contact: Desmond Johnston, AICP
Phone: (209) 723-2066
Fax: (559) 733-7821

NOTICE OF PUBLIC HEARING AND INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

PLEASE BE ADVISED that the Franklin County Water District (District) Board of Directors will consider adopting the Mitigated Negative Declaration at a meeting of the Board tentatively to be held on March 26, 2020, or as soon thereafter as may be possible. The meeting will be held at 5:30 p.m. in the Franklin County Water District office at 2115 Drake Avenue, Merced, CA 95348.

Project Name

Franklin County Water District Wastewater System Improvements

Project Location

The unincorporated Community of Franklin–Beachwood in Merced County.

Project Description

The Franklin County Water District (District) proposes sewer line and wastewater treatment plant improvements that will bring aging infrastructure up to the standard of the District's existing State permit and prevent potential unsanitary conditions (Project). Portions of the District's sewer collection system are severely deteriorated and in need of replacement or rehabilitation. The proposed Project area includes other segments of the District's wastewater collection system as a contingency in the event that additional sewer pipe segments are found to need repair moving forward.

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The document and documents referenced in the Initial Study/Mitigated Negative Declaration are available for review at the Franklin County Water District office at 2115 Drake Avenue, Merced, CA 95348.

As mandated by the California Environmental Quality Act (CEQA), the public review period for this document is 30 days (CEQA Section 15073[b]). The public review period began on February 14, 2020 and ends on March 16, 2020. For further information, please contact Desmond Johnston at (209) 723-2066.

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ac	Acre
ADWF	Average Daily Wastewater Flow
afy	Acre-Foot per
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
ATCM	Airborne Toxic Control Measure
BAU	Business-As-Usual
BMPs	Best Management Practices
CAA	Clean Air Act
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH ₄	Methane
CIPP	Cured-in-Place Pipe
CNDDB	California Natural Diversity Database
CO ₂	Carbon dioxide
CRECs	Controlled Recognized Environmental Concerns
CWA	Clean Water Act
dB	Decibels
DNL	Day-Night Average Level
DOC	Department of Conservation
DOGGR	Department of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substance Control
EIR	Environmental Impact Report
EOADP	Extreme Ozone Attainment Demonstration Plan
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESAs	Environmentally Sensitive Areas
FEMA	Federal Emergency Management Agency
FCWD	Franklin County Water District
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
g	Acceleration of Gravity
GAMAQI	Guide to Assessing and Mitigating Air Quality Impacts
GHGs	Greenhouse Gases
HAPs	Hazardous Air Pollutants
HCFCs	Halogenated Fluorocarbons
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
HREC	Historical Recognized Environmental Concerns
HVAC	Heating, Ventilation, and Air Conditioning
IS	Initial Study

IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MDB&M	Mount Diablo Base and Meridian
MGD	Million Gallons per Day
MM	Mitigation Measure
MND	Mitigated Negative Declaration
MTCO _{2e}	Metric Tons Carbon Dioxide Equivalent
N ₂ O	Nitrous Oxide
NAHC	Native American Heritage Commission
NO _x	Oxide of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSR	New Source Review
O ₃	Ozone
OCPs	Organochlorine Pesticides
PEA	Preliminary Environmental Assessment
PFCs	Perfluorinated Carbons
PM _{2.5}	Particulate Matter Less than 2.5 Microns
PM ₁₀	Particulate Matter Less than 10 Microns
PRC	Public Resources Code
ROG	Reactive Organic Gases
RSLs	Residential Screening Levels
RTIF	Regional Traffic Impact Fee
RWQCB	Regional Water Quality Control Board
SEI	Soils Engineering, Inc.
SF ₆	Sulfur Hexafluoride
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SPAL	Small Project Analysis Level
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VMT	Vehicle Miles Traveled
WSA	Water Supply Assessment
OCPs	Organochlorine Pesticides

MITIGATED NEGATIVE DECLARATION

As Lead Agency under the California Environmental Quality Act (CEQA), the Franklin County Water District (District) reviewed the Project described below to determine whether it could have a significant effect on the environment because of its development. In accordance with CEQA Guidelines Section 15382, “[s]ignificant effect on the environment” means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Project Name

Franklin County Water District Wastewater Collection and Treatment System Improvements

Project Location

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Construction is anticipated to begin in January 2022 and would take approximately one year, finishing in January 2023.

Mailing Address and Phone Number of Contact Person

Franklin County Water District
2115 Drake Avenue
Merced, CA 95348
Contact Person: Brenda Wey, District Manager
Phone: (209) 723-1353

Findings

As Lead Agency, the District finds that the Project will not have a significant effect on the environment. The Environmental Checklist (CEQA Guidelines Appendix G) or Initial Study (IS) (see *Section 3-Environmental Checklist*) identified one or more potentially significant effects on the environment, but revisions to the Project have been made before the release of this Mitigated Negative Declaration (MND) or mitigation measures would be implemented that reduce all potentially significant impacts to less-than-significant levels. The Lead Agency further finds that there is no substantial evidence that this Project would have a significant effect on the environment.

Mitigation Measures Included in the Project to Avoid Potentially Significant Effects

MM BIO-1 Within 14 days of the start of Project activities at the WWTF and adjacent grassland habitat, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of this species. The surveys shall cover the ponds plus surround upland habitat within 50 feet of the ponds. Pedestrian surveys achieving 100 percent visual coverage shall be conducted. If a western pond turtle is found on-site, the qualified biologist may relocate the animal downstream more than 500 feet from the Project disturbance footprint.

MM BIO-2 Within 14 days of the start of Project activities in any specific area, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of the San Joaquin kit fox, American badger, Swainson's Hawk, and other species of special status mentioned. The surveys should cover the Project site plus a 500-foot buffer.

Pedestrian surveys achieving 100 percent visual coverage should be conducted. Multiple surveys are anticipated to be needed, which would be phased with construction of the Project. If no evidence of these species is detected, no further action is required.

MM BIO-3 If dens/burrows that could support any of these species are discovered during the pre-activity surveys conducted under MM BIO-2, the avoidance buffers outlined below shall be established. No work shall occur within these buffers unless the biologist approves and monitors the activity.

San Joaquin Kit Fox

- Potential Den—50 feet
- Atypical Den—50 feet (includes pipes and other man-made structures)
- Known Den—100 Feet
- Natal/Pupping Den—500 feet

American Badger Dens (occupied)

- Natal Den (February 1–July 1)—250 feet
- Non-Natal Den—50 feet

Burrowing Owl (active burrows)

- April 1–October 15—500 feet
- October 16–March 31—100 feet

MM BIO-4 The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix F; USFWS 2011) and apply to all three species.

- Project-related vehicles shall observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on county roads and State and federal highways. Nighttime construction speed limits shall be 10-mph.
- Off-road traffic outside of designated Project areas shall be prohibited.
- All Project activities shall occur during daylight hours.
- To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed.
- Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work.

- In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS shall be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox or burrowing owl is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox or owl has escaped.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No firearms shall be allowed on the Project site.
- No pets, such as dogs or cats, shall be permitted on the Project site.
- Use of rodenticides and herbicides in Project areas shall be restricted.
- A representative shall be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or burrowing owl or who finds a dead, injured or entrapped kit fox, tricolored blackbird, song sparrow, or burrowing owl. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the Service.
- An employee education program shall be developed and presented to Project personnel. The program shall consist of a brief presentation by persons knowledgeable in kit fox, tricolored blackbird, song sparrow, and burrowing owl, biology, and the legislative protections in place. The program shall include the following: a description of each species natural history and habitat needs; a report of the occurrence of each species in the Project area; an explanation of the status of each species and its protections under federal and State laws; and a list of measures being taken to reduce impacts to each species during project construction and implementation. A fact sheet conveying this information shall be prepared for distribution to the previously referenced people and anyone else who may enter the Project site.
- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW and USFWS immediately in the case of a dead, injured or entrapped listed animal.

- The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the USFWS.

MM BIO-5 If Project activities must occur during the nesting season (February 15 to August 31), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). The surveys shall be phased with construction of the Project. If no active nests are found, no further action is required; however, nests may become active at any time throughout the summer, including when construction activities are occurring. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 350 feet may be required, as determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist. The biologist shall have the ability to stop construction if nesting adults show sign of distress.

MM BIO-6 If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFW 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods. The survey will be conducted in accordance with the methodology outlined in existing protocols and shall be phased with construction of the Project.

If no Swainson's hawk nests are found, no further action is required.

MM BIO-7 If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist will complete an assessment of the potential for current construction activities to impact the nest. The assessment will consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Minimally, construction activities shall not occur within 100 feet of an active nest and may require monitoring if within 500 feet of an active nest. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the

nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.

MM CUL-1 Prior to the start of any ground disturbing activities, the qualified archaeologist shall conduct a Cultural Resources Awareness Training program for all construction personnel working on the project. The training shall be provided to all Project personnel who may be present during ground disturbing activities. The Applicant shall incorporate into the construction contract(s) for the Project a provision that if a potentially significant historical or archaeological resource is encountered during subsurface construction activities (i.e., trenching, grading), all construction activities within a 50-foot radius of the identified potential resource shall cease until a qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation (DPR) forms. The archaeologist shall determine whether the discovery requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under CEQA, the archaeologist shall recommend a feasible protocol, which may include avoidance, preservation in place or other appropriate measure, as outlined in Public Resources Code Section 21083.2.

MM CUL-2 If human remains are discovered during construction or operational activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed: There shall be no further excavation or disturbance of the area where the human remains were found until the County Coroner/Sheriff's Office is contacted. Duly authorized representatives of the Coroner shall be permitted onto the Project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Section 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to recommence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any death. If the Coroner determines the remains are Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

MM GEO-1 Prior to ground disturbance, an Erosion Control Plan for construction activities will be prepared that describes the Best Management Practices (BMPs) that will be incorporated to reduce the potential for soil erosion and loss of topsoil. The BMPs could include soil stabilizers and silt fencing as well as other measures.

MM GEO-2: The District and/or its contractors shall provide for a Project-specific paleontological resource impact mitigation program (PRIMP) prior ground disturbance associated with the Project. The PRIMP shall be developed by a professional paleontologist (Project Paleontologist, Principal Investigator) who meets SVP (2010) qualifications standards. The PRIMP will specify the steps to be taken to mitigate impacts to paleontological

resources. For instance, Worker's Environmental Awareness Program (WEAP) training shall be prepared and presented in-person to all field personnel prior to the start of Project-related earth-moving activities. The PRIMP will specify whether construction monitoring is required, and, if so, the frequency of required monitoring (i.e., full-time, spot-check, etc.). The PRIMP also will provide details about bulk-sediment screening, fossil collection, analysis, and preparation for permanent curation at an approved repository. Lastly, the PRIMP will describe the different reporting standards to be used for negative or positive findings during construction activities.

MM HYD-1 Prior to construction, the Franklin CWD shall submit an approved copy of: (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended BMPs for the construction phase may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil properly;
- Protecting existing storm drain inlets and stabilizing disturbed areas;
- Implementing erosion controls;
- Properly managing construction materials; and
- Managing waste, aggressively controlling litter, and implementing sediment controls.

MM HYD-2 The Franklin CWD shall limit grading to the minimum area necessary for construction and operation of the Project. Final grading plans shall include BMPs to limit on-site and off-site erosion.

SECTION 1 - INTRODUCTION

1.1 - Overview

The Franklin County Water District (District) proposes wastewater infrastructure improvements that will address aging infrastructure and prevent unsanitary conditions for the Franklin–Beachwood Community and surrounding area.

1.2 - California Environmental Quality Act

The District is the Lead Agency for this Project pursuant to the CEQA Guidelines (Public Resources Code Section 15000 et seq.). The Environmental Checklist (CEQA Guidelines Appendix G) or Initial Study (IS) (see *Section 3–Initial Study*) provides analysis that examines the potential environmental effects of the construction and operation of the Project. Section 15063 of the CEQA Guidelines requires the Lead Agency to prepare an IS to determine whether a discretionary project will have a significant effect on the environment. A Mitigated Negative Declaration (MND) is appropriate when an IS has been prepared and a determination can be made that no significant environmental effects will occur because revisions to the Project have been made or mitigation measures will be implemented that reduce all potentially significant impacts to less-than-significant levels. The content of an MND is the same as a Negative Declaration, with the addition of identified mitigation measures and a Mitigation Monitoring and Reporting Program (MMRP) (see *Section 6–Mitigation Monitoring and Reporting Program*).

Based on the IS, the Lead Agency has determined that the environmental review for the proposed application can be completed with an MND.

1.3 - Impact Terminology

The following terminology is used to describe the level of significance of impacts.

- A finding of “no impact” is appropriate if the analysis concludes that the Project would not affect a topic area in any way.
- An impact is considered “less than significant” if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered “less than significant with mitigation incorporated” if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments that have been agreed to by the applicant.
- An impact is considered “potentially significant” if the analysis concludes that it could have a substantial adverse effect on the environment.

1.4 - Document Organization and Contents

The content and format of this IS/MND is designed to meet the requirements of CEQA. The report contains the following sections:

- *Section 1–Introduction:* This section provides an overview of CEQA requirements, intended uses of the IS/MND, document organization, and a list of regulations that have been incorporated by reference.
- *Section 2–Project Description:* This section describes the Project and provides data on the site's location.
- *Section 3–Initial Study:* This section contains the evaluation of 18 different environmental resource factors contained in Appendix G of the CEQA Guidelines (updated December 2019). Each environmental resource factor is analyzed to determine whether the proposed Project would have an impact. One of four findings is made which include: no impact, less-than-significant impact, less than significant with mitigation, or significant and unavoidable. If the evaluation results in a finding of significant and unavoidable for any of the 20 environmental resource factors, then an Environmental Impact Report will be required.
- *Section 4–List of Preparers:* This section identifies the individuals who prepared the IS/MND.
- *Section 5–Bibliography:* This section contains a full list of references that were used in the preparation of this IS/MND.
- *Section 6–Mitigation Monitoring and Reporting Program:* This section contains the Mitigation Monitoring and Reporting Program.

1.5 - Incorporated by Reference

The following documents and/or regulations are incorporated into this IS/MND by reference:

- 1983 Franklin–Beachwood Community Specific Plan;
- 2030 Merced County General Plan Draft and Final Environmental Impact Report;
- 2030 Merced County General Plan; and
- Franklin County Water District Wastewater Collection and Treatment System Improvements, Draft Preliminary Engineering Report, April 2019

SECTION 2 - PROJECT DESCRIPTION

2.1 - Introduction

The Franklin County Water District (District) is proposing to identify and repair aging wastewater infrastructure that serves the residents of the unincorporated Community of Franklin–Beachwood in Merced County, California. Figure 2-1 is a map of the regional location of the Project.

2.2 - Project Location

The District is located approximately one-mile northwest of the City of Merced, north of California State Highway 99. The District service area is bounded by the El Capitan Canal on the east and Highway 99 on the south. The District is located within Sections 10, 14, 15, 16, 22 and 23, Township 7S, Range 15E, Mount Diablo Base and Meridian.

2.3 - Project Objectives

The objective of this Project is repair wastewater system segments that require replacement, and upgrade the WWTF, in order to achieve State-permitted treatment capacity, maintain the level of service for District residents, and avoid unsanitary conditions created by a dilapidated system infrastructure.

2.4 - Site Characteristics

The proposed Project site consists of approximately 78,309 linear feet of sewer mains throughout the District area and approximately 67 acres of existing and future wastewater treatment facilities located on the southeast boundary of the District. The District's service area covers approximately 1.36 square miles, which includes the Community of Franklin–Beachwood and land outside the community.

2.5 - Background and Need for the Project

The District owns and operates the existing WWTF under Waste Discharge Requirements (WDRs) Order No. 89-171. The WWTF is located east of El Capitan Canal, just north of the confluence with Black Rascal Creek, which is tributary to the San Joaquin River. The WWTF consists of a duplex pump lift station, a circular aeration treatment pond, and 12 evaporation/percolation ponds for effluent disposal. The WWTF currently receives approximately 0.38 million gallons per day (MGD) of liquid waste. The disposal capacity of the effluent ponds is approximately 0.4 MGD which is less than the plant's State-permitted capacity, and the capacity of the treatment plant, of 0.6 MGD. The District owns and operates a districtwide sanitary sewer collection system that currently services 1,706 connections, primarily residential. The system is comprised of approximately 78,309 linear feet of 6-, 8-, 10-, and 12-inch diameter clay and plastic PVC pipelines, 174 manholes, and 36 cleanouts.



Portions of the District sewer collection system are severely deteriorated and in need of replacement or rehabilitation. The primary need for a sewer collection system improvement project is due to the significant age of the sewer infrastructure, mainly in the eastern portion of the District. The District's sewer collection system was constructed over 50 years ago and some of the older portions of the system experience frequent blockages and require cleaning or removal of roots. Beyond the required maintenance and repair activities, there has not been any major replacement or rehabilitation of the sewer collection system. The physical condition of some of these sewer lines is believed to be very poor, likely beyond their design life expectancy, and are in need of replacement or rehabilitation.

2.6 - Project Description

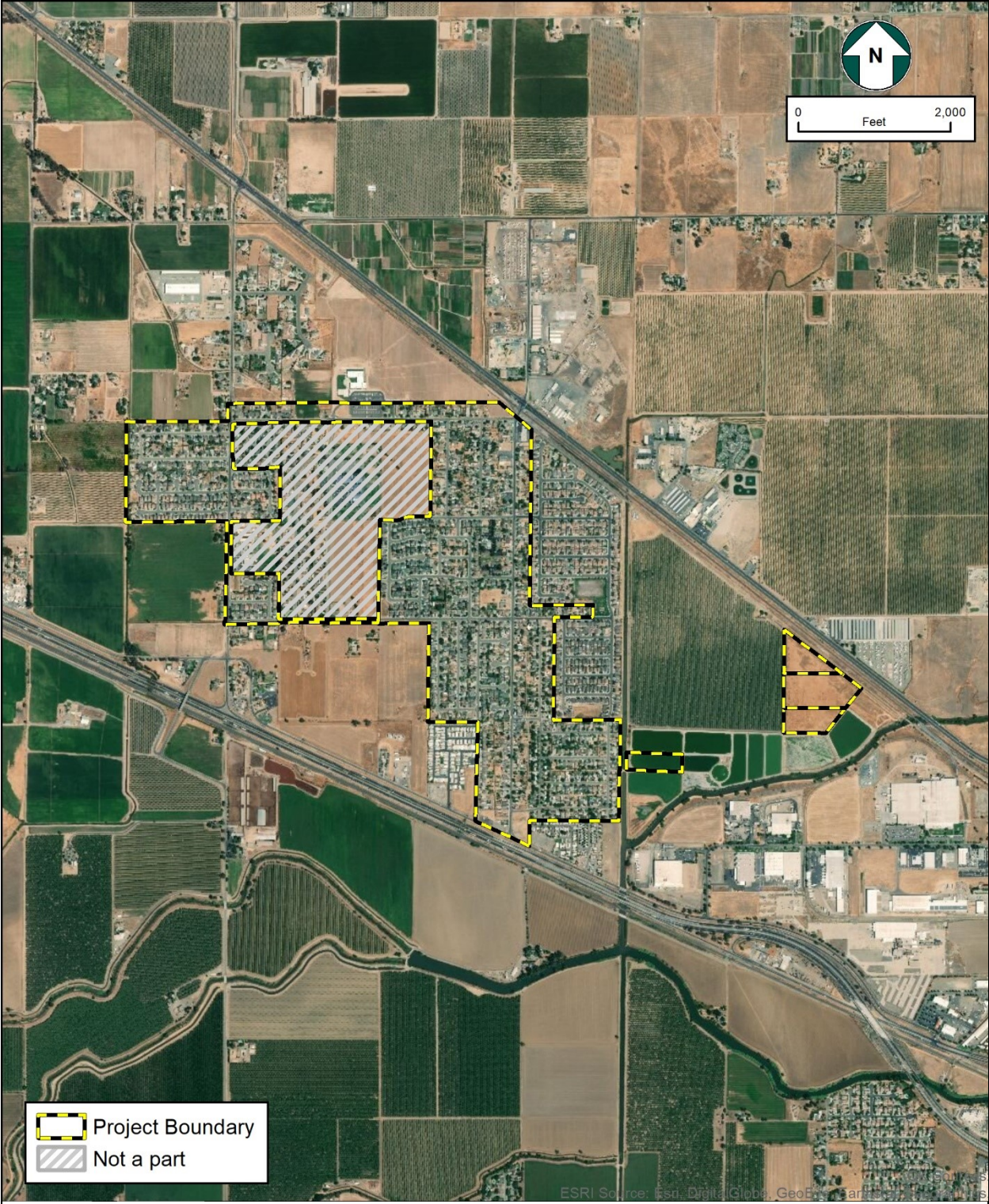
The District would undertake improvements to both the collection system and WWTF that will bring the entire system into conformance and achieve the State-permitted capacity of 0.6 MGD.


The District proposes sewer line and wastewater treatment plant improvements that will bring the District up to the standard that its current Waste Discharge Requirement (WDR) Order allows for by addressing aging infrastructure and preventing potential unsanitary conditions (Project). Portions of the District's sewer collection system are severely deteriorated and in need of replacement or rehabilitation. The proposed Project area includes other segments of the District's wastewater collection system as a contingency in the event that additional sewer pipe segments are found to need repair moving forward, and this area is included in the environmental analysis.

2.6.1 - SEWER LINE IMPROVEMENTS

Proposed improvements to the sewer line consist of a combination of spot repairs, the Traditional construction method of dig and replace, and the Trenchless method of cured-in-place pipe (CIPP). Approximately 9,001 linear feet of sewer mains will either be replaced through the Traditional Method or rehabilitated through the Trenchless Construction Method of CIPP. The Traditional Method will replace 4,632 linear feet of sewer mains, while the Trenchless Method of CIPP will rehabilitate 4,369 linear feet of sewer mains.

Trenchless sewer rehabilitation is recommended where applicable on this Project in order to reduce surface disturbance over traditional dig and replace methods, reduce the number of traffic and pedestrian detours, spare tree removal, decrease construction noise, and reduce air pollution from construction equipment. Additional defects in the sewer collection system will only require spot repairs. These repairs at various locations within the area shown on Figure 2-3 and are presented in detail in the Preliminary Engineering Report on file at the District office.



 **Figure 2-2**
Project Boundary

Staging/laydown areas for materials and equipment will primarily occur within the District facility on the east side of the service area. Temporary staging may occur within the immediate vicinity of pipeline repair locations as needed. Staging for construction of the new percolation pond will occur within the same parcel or with the District's facility.

Logistical problems associated with either method of sewer line construction can include:

- Handling raw sewage by construction crews while replacing sewer mains;
- Disruption to the local streets and temporary detours;
- Reconstruction of trench paving to match roadway standards;
- Access to private properties and businesses during construction;
- Timely backfilling of trenches, sewer line testing and repaving of streets;
- Connection of existing laterals at depths that could vary six-feet or more.
- Coordination for disruption of sewer services with both private and public users.

2.6.2 - WASTEWATER TREATMENT FACILITY IMPROVEMENTS

Existing evaporation/percolation Pond No. 3 is proposed to be decommissioned for the construction of the new extended aeration activated sludge facility. In this proposed preferred project scenario, the existing lift station will remain in place. Approximately 51 linear feet of 12-inch pipe will be required to convey influent wastewater from the lift station to the aerated lagoon reactor. One clarifier will be required to handle the plant's design flow of 0.6 MGD, while the other will be provided for redundancy. Settled sludge will be recirculated back to the aeration basin or wasted to a sludge drying bed. Treated effluent will be conveyed to the facility's evaporation/percolation ponds. Presently, the FCWD WWTF receives an average daily flow of 0.388 MGD; however, the facility's disposal capacity is limited to 0.4 MGD. With the facility's limit being approached, the construction of more evaporation/percolation ponds is necessary to augment the facility's disposal capacity. Construction of new evaporation/percolation ponds will occur in two phases. The first phase of construction, Pond No. 13, will bring the facility's disposal capacity from 0.4 MGD to 0.44 MGD. The other phase of construction, Ponds No. 14 and 15, will increase the disposal capacity from 0.44 MGD to 0.6 MGD; this phase will occur in the future when the capacity of the facility needs to be expanded to accommodate a growing population. Specific detail of engineering components for the upgraded facility can be found in the Preliminary Engineering Report.

Construction is anticipated to begin in January 2022 and would take approximately one year, finishing in January 2023. The required vehicles and equipment that are anticipated for these construction activities include:

- Forklifts
- Tractors/Loaders/Backhoes
- Concrete/Industrial Saws
- Excavators
- Plate compactors

- Bulldozers
- Loaders
- Signal Boards
- Air Compressors Cement and Mortar Mixers
- Cranes
- Generator Sets
- Welders
- Pavers
- Rollers

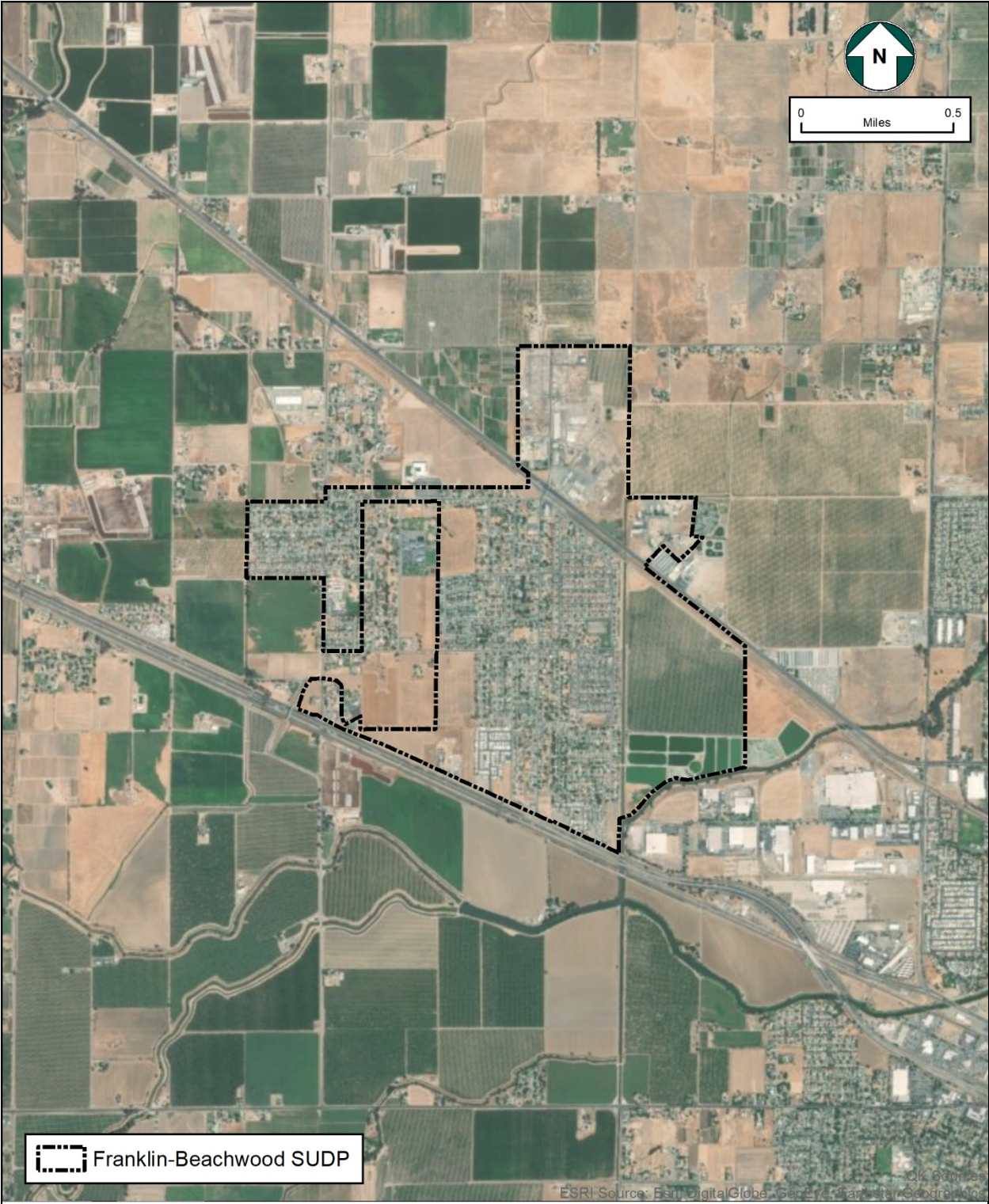
2.7 - Project Environment and Setting

The District is located approximately one-mile northwest of the City of Merced, north of California State Highway 99. The District service area is bounded by the El Capitan Canal on the east and Highway 99 on the south. More specifically, the District is located within Sections 10, 14, 15, 16, 22 and 23, Township 7S, Range 15E, Mount Diablo Base and Meridian.

The San Joaquin Valley, approximately 25,000 square miles, is a broad structural trough bordered by the Sierra Nevada Mountains on the east, the Coast Ranges on the west and the Transverse Range on the south. Groundwater occurrence is directly related to the regional geology and soils. Fresh groundwater is principally contained in the unconsolidated continental deposits of the Pliocene to the Holocene age, which extend to depths ranging from less than 100 to more than 3,000 feet.

According to the Custom Soil Resources Report for Merced Area, California, published by the Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the most prevalent soils series in the District's service area are Alamo clay, Atwater loamy sand, Bear Creek loam, Greenfield sandy loam, Greenfield sandy loam, Honcut silt loam, Landlow clay, Landlow silty clay loam, San Joaquin loam, San Joaquin-Alamo complex, and Wyman clay loam.

The climate within District can be classified as a Mediterranean-type climate. Summers are typically hot and dry, while winters are cool with an average precipitation of about 12.3 inches per year. The area is subject to significant variations in annual precipitation. Most of the annual precipitation occurs during the period from November through April.



	<p>Figure 2-3 Franklin–Beachwood Specific Urban Development Plan Area</p>
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SECTION 3 - INITIAL STUDY

3.1 - Environmental Checklist

1. Project Title:

Franklin County Water District System Upgrade

2. Lead Agency Name and Address:

Franklin County Water District
2115 Drake Avenue
Merced, CA 95348

3. Contact Person and Phone Number:

Brenda Wey
(209) 723-1353

4. Project Location:

The unincorporated Community of Franklin–Beachwood in Merced County

5. General Plan Designation and Zoning:

A comprehensive list of Land Use and Zoning Designations can be found in the Merced County General Plan (Merced County, 2013).

6. Description of Project:

Please see Section 2.

7. Surrounding Land Uses and Setting:

Agricultural cultivation and undeveloped land to the west, California State Route 99 to the south, agriculture and scattered residences to the north, and undeveloped land to the east.

8. Other Public Agencies Whose Approval may be Required:

- San Joaquin Valley Air Pollution Control District
- Central Valley Regional Water Quality Control Board
- California State Water Resources Control Board
- California Department of Fish and Wildlife

3.2 - Environmental Factors Potentially Affected

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

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards and Hazardous Materials |
| <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population and Housing | <input type="checkbox"/> Public Services Noise |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

3.3 - Determination

On the basis of this initial evaluation:

- ☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed 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 proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the

earlier analysis as described on attached sheets. An ENVIRONMENT IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

- ☐ I find that although the proposed 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 proposed Project, nothing further is required.

Brenda Wey

Signature

February 16, 2020

Date

Brenda Wey, District Manager

Franklin County Water
District

3.4 - Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a Lead Agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off site as well as on site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the Lead Agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The Lead Agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., General Plans, Zoning Ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
 - a. the significance criteria or threshold, if any, used to evaluate each question; and
 - b. the mitigation measure identified, if any, to reduce the impact to less than significance.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.1 - AESTHETICS

Except as provided in Public Resources Code Section 21099, would the Project:

a.	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

Impact #3.4.1a—Except as provided in Public Resources Code Section 21099, would the Project have a substantial adverse effect on a scenic vista?

The proposed site is located in an area that has been developed for urban and agricultural purposes. The Project consists of excavating and replacing subsurface pipe networks throughout the Community and upgrades to the existing Wastewater Treatment Facility (WWTF). Most of the pipe repairs would occur on roads, so construction activities would occupy roadways and obstruct the typical urban viewshed. However, these obstructions are temporary and intermittent. The upgrades to the WWTF include the construction of three evaporation/percolation ponds with a total area of approximately 23 acres. The WWTF is located along a tributary of Bear Creek, which is classified as a landscape resource in the Merced County General Plan (Merced County, 2013). However, the construction of the evaporation/percolation ponds would occur in phases and be temporary in nature. Furthermore, development of the Project would not block or preclude views to any area containing important or what would be considered visually appealing landforms. Therefore, no scenic vistas will be impacted by construction of this Project. The Project does not lie near

or within a State Designated or Eligible State Scenic Highway (California Department of Transportation, 2011). Further, the Project does not include the removal of trees determined to be scenic or of scenic value, the destruction of rock outcroppings or degradation of any historic building. Therefore, no scenic resources will be affected. The Project will not result in development that is substantially different than surrounding land uses.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.1b—Except as provided in Public Resources Code Section 21099, would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?

See Impact #3.4.1a, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.1c—Except as provided in Public Resources Code Section 21099, in non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

The Project is in an area that is developed for predominantly urban uses. Construction of the Project would result in degradation of the existing visual character of the area, but these impacts would be localized and temporary. The Project's operation would not substantially change or degrade the visual character of the site. Therefore, it would not result in a substantial impact to the visual quality of the area.

See also discussion of Impact #3.4.1a, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.1d—Except as provided in Public Resources Code Section 21099, would the Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Construction of the proposed Project would generally occur during daytime hours, typically from 7:00 a.m. to 6:00 p.m. All lighting would be directed downward and shielded to focus illumination on the desired work areas only and prevent light spillage onto adjacent properties. Because lighting used to illuminate work areas would be shielded, focused downward, and turned off by 6:00 p.m., the potential for lighting to adversely affect any surrounding area is minimal. Increased truck traffic and the transport of construction materials to the Project site would temporarily increase glare conditions during construction. However, this increase in glare would be minimal. Construction activity would focus on specific areas on the sites, and any sources of glare would not be stationary for a prolonged period. Therefore, construction of the proposed Project would not create a new source of substantial glare that would affect daytime views in the area.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.2 - AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with existing zoning for agricultural use or a Williamson Act Contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

Impact #3.4.2a—Would the Project 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 proposed Project includes the construction of three evaporation/percolation ponds with a total area of approximately 17 acres. This land has been designated by the Department of

Conservation Farmland Mapping and Monitoring Program (FMMP) as Farmland of Local Importance (CA Department of Conservation, 2016). However, this land has been issued a zoning designation of M-1 (Light Manufacturing) by the Merced County General Plan (County of Merced, 2013). Therefore, the impacts to agricultural resources from the land use change that would result from the proposed Project have already been analyzed in the preparation of the Merced County General Plan and do not need to be analyzed further. The Project would include the excavation and replacement of subsurface sewer pipes that do not extend beyond the existing road infrastructure in the Community of Franklin–Beachwood and the surrounding area. There exists no Williamson Act Contract in the Project area.

Construction activities will not necessitate the conversion of existing agriculture or areas designated as Prime Farmland to non-agricultural uses. Therefore, there would be no impact to State-designated Farmland as a result of the proposed Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.2b—Would the Project conflict with existing zoning for agricultural use or a Williamson Act Contract?

See Impact #3.4.2a, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.2c—Would the Project 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 Public Resources Code Section 12220 (g) and Section 4526 defines “Forest land” as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. There are no forest lands identified on the Project site or within its vicinity; therefore, there would be no conflict with or impacts to zoning for forest land or

timber land. The Project would not result in the loss or conversion of forest land to a non-forest use.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.2d—Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

See discussion of Impact #3.4.2c, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.2e—Would the Project 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?

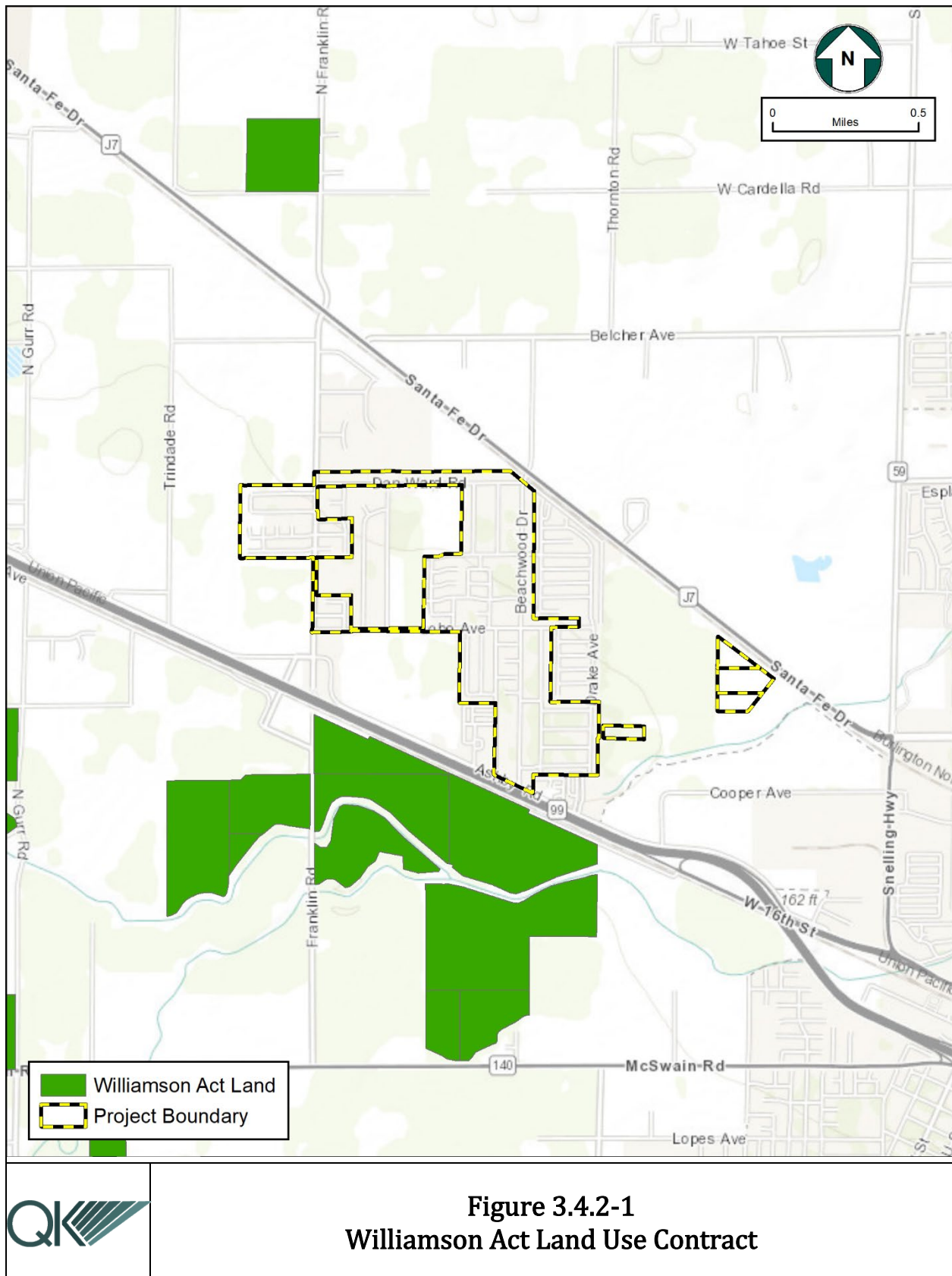
See discussion of Impacts #3.4.2a and #3.4.2c, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.



	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.3 - AIR QUALITY

Where available, the significance criteria established by the applicable Air Quality Management District or Air Pollution Control District may be relied upon to make the following determinations. Would the Project:

a.	Conflict with or obstruct implementation of the applicable Air Quality Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

The following analysis is based primarily on an Air Quality & Greenhouse Gas Impact Assessment (Technologies, 2019) prepared in accordance with the San Joaquin Valley Air Pollution Control District's (SJVAPCDs) instructions which are included in the District's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015) for the Project. In addition to providing an assessment of the Project's impacts to air quality and GHGs, the AQIA includes a detailed description of the regulatory environment as it relates to air quality.

Impact #3.4.3a—Would the Project conflict with or obstruct implementation of the applicable Air Quality Plan?

The primary way of determining consistency with the Air Quality Plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted General Plans to estimate future

average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area General Plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the Project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the Franklin–Beachwood Community and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any Air Quality Plans.

CONTROL MEASURES

The AQAPs contain a number of control measures, including the rules outlined by the SJVAPCD. The control measures in the AQAP are enforceable requirements. The Project would comply with all of the SJVAPCD's applicable rules and regulations. Therefore, the Project complies with this criterion.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.3b—Would the Project 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 Merced County area is non-attainment for federal and State air quality standards for ozone and non-attainment for federal and State standards for PM_{2.5}. Merced County is also non-attainment for State standards for PM₁₀. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM₁₀ Maintenance Plan, and 2012 PM_{2.5} Plan to achieve federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Individual projects contribute cumulatively to a region's non-attainment status and inconsistency with any of the Plans would be considered a cumulatively adverse air quality impact.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or State ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below a certain threshold.

Per CEQA Guidelines §15064(h)(3) a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the

project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an Air Quality Attainment or Maintenance Plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (SJVAPCD, 2015).

Air Quality Plan

As noted above, the SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM₁₀ Maintenance Plan, and 2012 PM_{2.5} Plan to achieve federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Existing and future pollutant emissions computed in the AQP are based on land uses from area General Plans. The AQP details the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the Project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the Franklin–Beachwood Community and is therefore consistent with the population growth and VMT applied in the Plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. As a result, the Project will not conflict with or obstruct implementation of any Air Quality Plans.

Ozone/Particulate Matter

As discussed above, Project emissions would not exceed the project-level significance thresholds for ozone precursors ROG and NO_x or PM₁₀ and PM_{2.5} during construction and operation. The SJVAPCD considers projects that exceed the project-level thresholds of significance as cumulatively significant. The Project's emissions would not combine with other sources in the SJVAB to make a cumulatively considerable contribution to a violation of the ozone standards. Therefore, this impact is less than significant. As such, there would not be a significant contribution to health effects from ozone and particulate matter.

Based on the assessment above, the Project will not 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors) and any impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.3c—Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

The first step in evaluating the potential for impacts to sensitive receptors for TAC's from the Project is to perform a screening level analysis. For Type A projects, one type of screening tool is found in the *CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective*. This handbook includes recommended buffer distances associated with various types of common sources. Since the proposed Project does not correspond with the characteristics of these source categories, a health risk assessment is not needed at this time. Therefore, the Project will not expose sensitive receptors to substantial pollutant concentrations and any impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.3d—Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- Generators—projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate; and
- Receivers—residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The Project seeks to repair and improve existing wastewater system segments that require replacement in order to maintain the level of service for District residents and avoid unsanitary conditions created by possible system infrastructure, and to achieve the level of treatment currently permitted by the State. The Project does not consist of the siting of 'new' wastewater treatment facilities, but rather the improvement of existing facility and facility

components. As a result, the Project will not result in other emissions adversely affecting a substantial number of people.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.4 - BIOLOGICAL RESOURCES

Would the Project:

a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The information in this section is summarized from a Biological Assessment Report prepared for the Project. This technical report can be found in Appendix C.

The analysis below was developed based on a review of existing literature and databases and site visits conducted on December 6, 2016 and June 20, 2019. A full description of the methodology can be found in the Biological Assessment Report.

For the purposes of this evaluation, everything within the Project limits is included in the Biological Study Area (BSA).

Environmental Setting

PHYSICAL SETTING

Topography, climate, and land use are described above.

SOILS

The BSA is underlain by seven soil types: Alamo clay, zero to one percent slopes; Atwater loamy sand, deep over hardpan, zero to three percent slopes; Greenfield sandy loam, deep over hardpan, zero to three percent slopes; Greenfield sandy loam, deep over hardpan, poorly drained variant, zero to one percent slopes; Landlow silty clay loam, zero to one percent slopes; Landlow clay, zero to one percent slopes; San Joaquin loam, zero to three percent slopes; and, Wyman clay loam, zero to three percent slopes (NRCS 2019a). Under certain conditions, the San Joaquin loam, Landlow clay, Landlow silty clay loam, Greenfield sandy loam, (zero to three percent slopes), and Alamo clay soils may be considered hydric (NRCS 2019b). Please the Biological Assessment Report for more details.

HYDROLOGY

One ponding basin is located within the Project boundary; this is WWTF evaporation/percolation Pond No. 3, which will be decommissioned. This pond is mapped by the NWI as L1UBKx, for excavated and artificially flooded limnetic lakes with an unconsolidated bottom (USFWS 2019c; Figure 3.4.4-2). Other WWTF ponds are located adjacent to the Project boundary.

There are four NWI-mapped drainages that occur within the Project or along the Project perimeter (Figure 3.4.4-2). Each of these drainages are classified as R5UBFx for riverine features that are excavated, are semi-permanently flooded but have unknown perennial flows, and have an unconsolidated bottom. One of these drainages parallels Santa Fe Road where the new WWTF ponds are proposed (USFWS 2019c). This drainage is not actually within the Project boundary but is immediately adjacent. This drainage may connect to Black Rascal Creek, which appears to connect with Bear Creek.

A second drainage, shown to occur along a dirt road to the west of the existing WWTF ponds, was confirmed to no longer be functionally present during the June 2019 site visit (Quad Knopf, Inc. 2019; Appendix C).

A third drainage is shown to occur along Lobo Avenue in a portion of the area where land is still in agricultural use, but that drainage was placed into a pipe prior to 1998 where homes now occur near the intersection of Lobo Avenue and Beachwood Drive (Google LLC 2019, USFWS 2019c, USGS 2019; Figure 3.4.4-1).

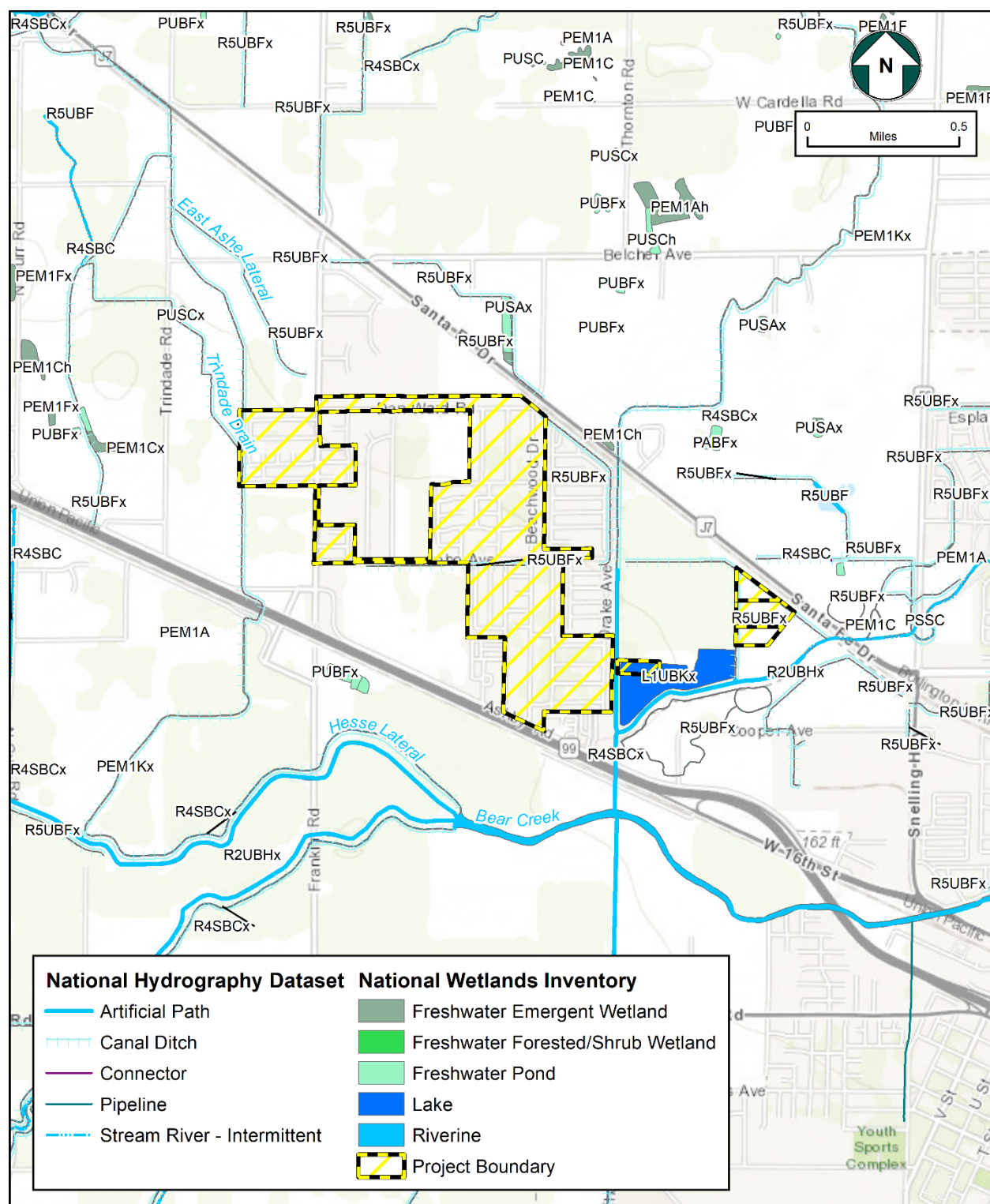
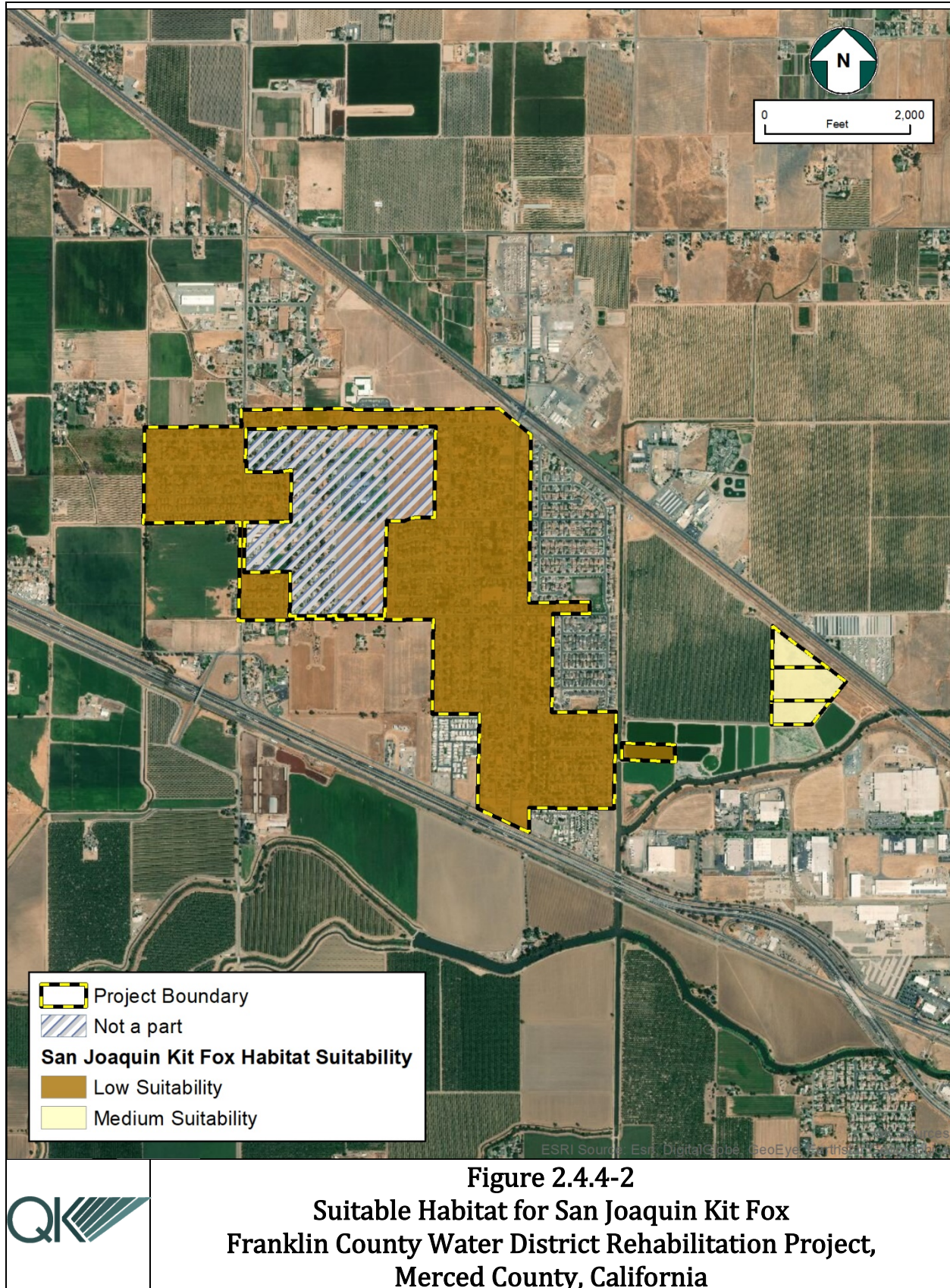


Figure 3.4.4-1
NWI and NHD Records of Aquatic Resources,
Franklin County Water District Wastewater System Upgrade,
Merced County, California



The fourth drainage that is shown along the westernmost Project boundary is still present according to aerial imagery (Figure 3.4.4-1). This drainage appears to connect to the Hesse Lateral, which appears to flow into the Hinds Lateral and into Bear Creek (USGS 2019). Bear Creek crosses the East Side Canal and eventually connects to the San Joaquin River.

The BSA is located within a FEMA 0.2 percent annual chance flood hazard zone in the northern portion of the Project site and located within a FEMA one percent annual chance flood hazard zone in the southern and eastern portion, as well as the western edge of the Project site (FEMA 2019).

VEGETATION

Four CWHR habitat types are present within the BSA: urban, annual grassland, riverine, and lacustrine (Mayer and Laudenslayer 1988). The riverine and lacustrine habitats were described above. The remaining two are described below.

Urban

Urban is a subcategory of Developed Habitats in the CWHR. The majority of the BSA is comprised of urban habitat, which includes paved roads and parking lots, residences, commercial and industrial buildings (and associated dirt parking lots where present), parks, schools, and the railroad corridor. Vegetation commonly associated with this habitat includes ornamental herbs (grass lawns and weeds), shrubs, hedges, and trees.

Annual Grassland

Annual grassland habitat is most prominent in the eastern most portion of the site adjacent to the existing WWTF. Other small pockets of annual grassland existing on the periphery of the BSA, usually where agricultural fields have been fallowed. Annual grassland habitats within the Project site have been previously disturbed. Within the grassland habitat adjacent to the WWTF is an approximately 12-foot tall stockpile of dirt that has been overgrown with grasses and forbs. The site had been plowed in recent months, except for the stockpile, likely for fire control. Annual grasslands are dominated by non-native grasses and may contain scattered forbs. Species observed near the WWTF included, but was not limited to, wild oats (*Avena fatua*), ripgut (*Bromus diandrus*), hairy leaved sunflower (*Helianthus annuus*), yellow starthistle (*Centaurea solstitialis*), and fiddleneck (*Amsinckia* sp.). A complete list of plants observed is provided in Appendix C.

Special-Status Species

There are seven special-status species with the potential to occur on the Project (Table 3.4.4-1), all of which may be affected by the Project, but none of which would have the viability of their populations threatened. The complete list of species evaluated for this Project as well as more detailed discussions of each of the species in Table 3.4.4-1 is included in the Biological Analysis Report.

**Table 3.4.4-1
Special-Status Species with Potential to Occur On-Site**

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected by Project? Yes/No	Viability Threat? Yes/No
Reptiles			
<i>Actinemys [=Emys] marmorata</i> western pond turtle	-/- SSC	No	No
Birds			
<i>Athene cunicularia</i> burrowing owl	-/- SSC	Yes	No
<i>Buteo swainsoni</i> Swainson's hawk	-/ST -/-	Yes	No
Mammals			
<i>Eumops perotis californicus</i> western mastiff bat	-/- -/SSC	Yes	No
<i>Lasiurus blossevillii</i> western red bat	-/- -/SSC	Yes	No
<i>Taxidea taxus</i> American badger	-/- -/SSC	Yes	No
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST -/-	Yes	No

Source: CDFW 2019b 2019d, 2019e, USFWS 2019b

FE Federally Endangered
ST State Threatened
SSC State Species of Special Concern

Sensitive Plant Communities

The database and literature review identified two sensitive plant communities within the vicinity of the Project: Northern Claypan Vernal Pool and Northern Hardpan Vernal Pool (CDFW 2019b). Given the developed nature of the Project site, the only location where these sensitive plant communities could be found was near the WWTF; however, site visits did not find any evidence of vernal pool habitat at this location. Neither sensitive plant communities are present.

The BSA does not overlap any federally-designated critical habitats (USFWS 2019a).

Jurisdictional Aquatic Resources

A formal delineation of waters of the U.S. and State has not been conducted for this Project. However, based on a review of the NWI and NHD data, and as discussed in Section 3.4.10, two of the drainages may connect to Bear Creek, which connects to the San Joaquin River, which connects to the Sacramento River at the Sacramento–San Joaquin Delta, and the Pacific Ocean, a Traditional Navigable Water. The other two drainages do not appear to be

connected to any other drainages and may be manmade ditches. The WWTF is located adjacent to Black Rascal Creek, but it is assumed that wastewater is not released into the creek because of potential contamination concerns.

Discussion

Impact #3.4.4a—Would the Project 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?

Special-Status Plant Species

No special-status plant species were determined to have a potential to occur within the BSA because of existing habitat and soil conditions. No impacts to special-status plant species will occur.

MM BIO-1 Within 14 days of the start of Project activities at the WWTF and adjacent grassland habitat, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of this species. The surveys shall cover the ponds plus surround upland habitat within 50 feet of the ponds. Pedestrian surveys achieving 100 percent visual coverage shall be conducted. If a Western Pond Turtle is found on-site, the qualified biologist may relocate the animal downstream more than 500 feet from the Project disturbance footprint.

Special-Status Wildlife

WESTERN POND TURTLE

Direct impacts could include death or injury to individual animals and loss of habitat. Direct impacts to western pond turtles could occur if they are present in the WWTF ponds when Pond 3 is decommissioned. Direct impacts to nests could occur if nests are present in surround upland habitat when construction occurs. Indirect impacts are unlikely given the short duration and limited nature of impacts relative to the WWTF where the species is most likely to occur.

WESTERN BURROWING OWL

Direct impacts could include injury or death of individuals, including abandonment of nests, if occupied burrows are adjacent construction areas. Noise and vibration from construction of the Project, plus the presence of construction workers (specifically for the grassland habitat adjacent to the WWTF), could alter the normal behaviors of nesting adults, resulting in harm or death to eggs or nestlings. Direct impacts could also include the loss of suitable foraging habitat for construction of the new sludge facility; however, there is ample foraging habitat to support burrowing owls in the vicinity of the Project. No indirect impacts are anticipated given the short duration of construction and limited nature of impacts to suitable habitat.

SWAINSON'S HAWK

Direct impacts to Swainson's hawks could occur if replacement of sewer lines occur near an active nest or in foraging habitat during the nesting season. No trees are expected to be removed, but noise and vibration from construction of the Project, plus the presence of construction workers, could alter the normal behaviors of nesting adults, resulting in harm or death to eggs or nestlings. Loss of grassland habitat for construction of the sludge facility would also be considered a direct impact, but the parcel is small and there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction in any given area and no loss of suitable nesting habitat would occur.

WESTERN MASTIFF BAT

Direct impacts may occur if western mastiff bats are disturbed from day roosts by construction activities, but such disturbance is likely to be minimal because this species commonly occurs in urban habitats. Suitable maternity roosts are lacking. Loss of foraging habitat would be negligible because there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction and the limited nature of impacts to suitable habitat.

WESTERN RED BAT

Direct impacts may occur if western red bats are disturbed from day roosts by construction activities, but such disturbance is likely to be minimal because this species commonly occurs in urban habitats. Loss of foraging habitat would be negligible because there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction and the limited nature of impacts to suitable habitat.

AMERICAN BADGER

Direct impacts to American badger could occur if they are present in the grassland habitat when construction occurs. These direct impacts could include death or injury to individuals or young, including from abandonment of young if adults are stressed. Direct impacts could also include entrapment of adults or young if there are trenches nearby, as well as loss of suitable habitat. The loss of suitable habitat could result in indirect impacts through increased competition with conspecifics for limited resources over the long-term.

SAN JOAQUIN KIT FOX

San Joaquin kit foxes are known to occur in urban settings; as such, the entire Project site can be considered suitable habitat for this species (Figure 3.4.4-2). Most of the Project site where sewer line repair and replacement would occur is highly developed for residential uses. San Joaquin kit foxes would likely only occur in these areas transiently for foraging and movement but may encounter Project activities in doing so. Construction of the additional basin near the WWTF would develop a large portion of annual grassland habitat that could support San Joaquin kit fox for foraging, movement, and shelter. Staging/laydown for materials and equipment would not create additional habitat impacts as they will primarily

occur within the District's facility on the east side of the service area. Temporary staging may occur within the immediate vicinity of pipeline repair locations as needed. Staging for construction of the new percolation pond will occur within the same parcel or within the District's facility.

Direct impacts resulting in injury or death of pups could occur if an active natal den is located near the construction area, causing the adults to alter normal behaviors. Direct impacts by vehicles is a concern for San Joaquin kit foxes in urban environments, but the proposed Project would not cause an appreciable increase in traffic at night when the species is active. Direct impacts could also include entrapment in trenches or pipes during construction and loss of suitable habitat. The loss of suitable habitat could result in indirect impacts through increased competition with conspecifics for limited resources over the long term.

NESTING BIRDS

The Project site may contain suitable habitat that could support a wide variety of nesting bird species protected under the Migratory Bird Treaty Act and the California Fish and Game Code. While no trees or shrubs are anticipated to be removed, Project activities adjacent to nesting birds could result in direct impacts to the nests from noise and vibration caused by construction activities. If construction in the annual grassland adjacent to the WWTF occurs during the nesting season, active nests for ground nesting species could be impacted. No indirect impacts are anticipated as the amount of suitable nesting habitat that would be lost is negligible and ground nesting species are adaptable to changing habitat conditions.

MITIGATION MEASURES

The limited disturbance footprint for this Project and the short duration of activities at any given location, coupled with implementation of avoidance and minimization would reduce impacts of the Project to special-status wildlife species to level that would be less than significant. Given the negligible impacts to bat species, no measures are recommended for those species.

MM BIO-2 Within 14 days of the start of Project activities in any specific area, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of the San Joaquin kit fox, American badger, Swainson's Hawk, and other species of special status mentioned above. The surveys should cover the Project site plus a 500-foot buffer. Pedestrian surveys achieving 100 percent visual coverage should be conducted. Multiple surveys are anticipated to be needed, which would be phased with construction of the Project. If no evidence of these species is detected, no further action is required.

MM BIO-3 If dens/burrows that could support any of these species are discovered during the pre-activity surveys conducted under MM BIO-2, the avoidance buffers outlined below shall be established. No work shall occur within these buffers unless the biologist approves and monitors the activity.

San Joaquin Kit Fox

- Potential Den—50 feet
- Atypical Den—50 feet (includes pipes and other man-made structures)
- Known Den—100 Feet
- Natal/Pupping Den—500 feet

American Badger Dens (occupied)

- Natal Den (February 1–July 1)—250 feet
- Non-Natal Den—50 feet

Burrowing Owl (active burrows)

- April 1–October 15—500 feet
- October 16–March 31—100 feet

MM BIO-4 The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix F; USFWS 2011) and apply to all three species.

- Project-related vehicles shall observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on county roads and State and federal highways. Nighttime construction speed limits shall be 10-mph.
- Off-road traffic outside of designated Project areas shall be prohibited.
- All Project activities shall occur during daylight hours.
- To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed.
- Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work.
- In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS shall be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox or burrowing owl is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox or owl has escaped.

- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No firearms shall be allowed on the Project site.
- No pets, such as dogs or cats, shall be permitted on the Project site.
- Use of rodenticides and herbicides in Project areas shall be restricted.
- A representative shall be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or burrowing owl or who finds a dead, injured or entrapped kit fox, tricolored blackbird, song sparrow, or burrowing owl. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the Service.
- An employee education program shall be developed and presented to Project personnel. The program shall consist of a brief presentation by persons knowledgeable in kit fox, tricolored blackbird, song sparrow, and burrowing owl, biology, and the legislative protections in place. The program shall include the following: a description of each species natural history and habitat needs; a report of the occurrence of each species in the Project area; an explanation of the status of each species and its protections under federal and State laws; and a list of measures being taken to reduce impacts to each species during project construction and implementation. A fact sheet conveying this information shall be prepared for distribution to the previously referenced people and anyone else who may enter the Project site.
- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to “temporary” disturbance means any area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW and USFWS immediately in the case of a dead, injured or entrapped listed animal.
- The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the USFWS.

MM BIO-5 If Project activities must occur during the nesting season (February 15 to August 31), pre-activity nesting bird surveys shall be conducted within seven days prior to

the start of construction at the construction site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). The surveys shall be phased with construction of the Project. If no active nests are found, no further action is required; however, nests may become active at any time throughout the summer, including when construction activities are occurring. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 350 feet may be required, as determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist. The biologist shall have the ability to stop construction if nesting adults show sign of distress.

MM BIO-6 If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFW 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods. The survey will be conducted in accordance with the methodology outlined in existing protocols and shall be phased with construction of the Project.

If no Swainson's hawk nests are found, no further action is required.

MM BIO-7 If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist will complete an assessment of the potential for current construction activities to impact the nest. The assessment will consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Minimally, construction activities shall not occur within 100 feet of an active nest and may require monitoring if within 500 feet of an active nest. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.4b—Would the Project 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 sensitive natural communities are present within the BSA (CDFW 2019a). The Project site does not overlap critical habitat (USFWS 2019a). No impacts to riparian or sensitive natural communities will occur.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.4c—Would the Project 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?

Five aquatic features were identified within the Project boundary, including four drainages and one WWTF pond. A formal delineation of waters of the U.S. and State has not been completed. The presence of wetlands within the drainages has not been verified but is unlikely based on observations of drainage conditions in aerial imagery. Furthermore, the Project is not expected to impact any drainage.

WWTF Pond No. 3 will be decommission as part of the Project. The WWTF ponds are well maintained and do not contain wetland vegetation.

No wetlands would be impacted by implementation of the Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.4d—Would the Project 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 is not located within a mapped wildlife movement corridor or linkage. Drainages and associated riparian habitat, if present, can provide small-scale wildlife movement corridors, but no drainages would be impacted by the Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.4e—Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed Project does not conflict with the 2030 Merced County General Plan, and there are no local ordinances applicable to the Project. Therefore, there are no impacts with respect to local policies and ordinances.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.4f—Would the Project 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 PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan is the only Conservation Plan overlying the proposed Project, but it does not apply to any projects that are not implemented by PG&E (CDFW 2019a). As such, the proposed Project will not conflict with any adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approval local, regional, or State Habitat Conservation Plan. Therefore, there are no impacts and no measures are required.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.5 - CULTURAL RESOURCES

Would the Project:

- | | | | | | |
|----|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a. | Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. | Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. | Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Discussion

Impact #3.4.5a—Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

As defined by CEQA Guidelines Section 15064.5, "historical resources" are:

- A resource listed in, or determined to be eligible by, the State Historical Resources Commission, for listing in the California Register of Historical Resources (Public Resource Code Section 5024.1, Title 14 California Code of Regulations, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a Lead Agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the Lead Agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the Lead Agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code Section 5024.1, Title 14 CCR, Section 4852) including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

Impacts on cultural resources can result either directly or indirectly from preconstruction activities and construction of a proposed Project. Direct impacts are those that result from the immediate disturbance of resources from vegetation removal, vehicle travel over the surface, earthmoving activities, excavation, or alteration of a resource. Indirect impacts are those that result from increased erosion due to site clearance and preparation or from inadvertent damage or outright vandalism to exposed resource materials which could occur due to improved accessibility.

On September 11th, 2019 a cultural records search was obtained from the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS). CCIC staff examined site records, files, maps and other materials to identify previously recorded resources and prior surveys. Other background research sources included the OHP Historic Property Directory and California Inventory of Historical Resources. Although there were recorded cultural resource outside of the 0.5-mile area around the District, there were no records of cultural or tribal resources in the Project area. Additionally, no other cultural or tribal resources were identified in the Project area as a result of the Native American Heritage Commission's Sacred Lands File search. On September 13th, 2019 an archaeological and built environment survey of the Project area was conducted

Due to the possible presence of undocumented tribal or cultural resources within the Project site, construction related impacts on tribal or cultural resources could be potentially significant prior to mitigation. Implementation of the following mitigation measure would require appropriate steps to preserve and/or document any previously undiscovered resources that may be encountered during construction activities, including human remains.

MITIGATION MEASURE(S)

MM CUL-1 Prior to the start of any ground disturbing activities, the qualified archaeologist shall conduct a Cultural Resources Awareness Training program for all construction personnel working on the project. The training shall be provided to all Project personnel who may be present during ground disturbing activities. The Applicant shall incorporate into the construction contract(s) for the Project a provision that if a potentially significant historical or archaeological resource is encountered during subsurface construction activities (i.e., trenching, grading), all construction activities within a 50-foot radius of the identified potential resource shall cease until a qualified archaeologist evaluates the item for its significance and records the item on the appropriate State

Department of Parks and Recreation (DPR) forms. The archaeologist shall determine whether the discovery requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under CEQA, the archaeologist shall recommend a feasible protocol, which may include avoidance, preservation in place or other appropriate measure, as outlined in Public Resources Code Section 21083.2.

Level of Significance

Impact would be *less than significant with mitigation incorporated*.

Impact #3.4.5b—Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

See discussion of Impact #3.4.5a, above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.5c—Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Although unlikely, subsurface construction activities, such as trenching and grading, associated with the proposed Project could potentially disturb previously undiscovered human burial sites. Accordingly, this is a potentially significant impact. Although considered unlikely subsurface construction activities could cause a potentially significant impact to previously undiscovered human burial sites. The records searches did not indicate the presence of human remains, burials, or cemeteries within the Project site. No human remains have been discovered at the Project site, and no burials or cemeteries are known to occur within the area of the site. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Implementation of the below mitigation measure would ensure that the proposed Project would not directly or indirectly destroy previously unknown human remains. The proposed Project would not disturb any known human remains, including those interred outside of formal cemeteries. Therefore, the Project would have a less-than-significant impact with incorporation of mitigation measures.

MITIGATION MEASURE(S)

Implementation of MM CUL-2.

MM CUL-2 If human remains are discovered during construction or operational activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed: There shall be no further excavation or disturbance of the area where the human remains were found until the County Coroner/Sheriff's Office is contacted. Duly authorized representatives of the Coroner shall be permitted onto the Project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Section 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to recommence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any death. If the Coroner determines the remains are Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.6 - ENERGY

Would the Project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Impact #3.4.6a—Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Construction of the Project would increase energy consumption due to the operation of construction equipment. The increase in energy consumption associated with construction activities would be minimal in comparison to statewide and regional consumption. Construction equipment and vehicles would be operated in accordance with all applicable rules and regulations thereby minimizing energy consumption associated with the construction equipment and vehicles primarily powered by non-renewable fuels. Operational energy is anticipated to increase as a result of the proposed Project. However, this increased energy consumption is necessary in order to serve existing and future system users. Additionally, the District previously acquired funding for the construction of a 112.5 kW solar photovoltaic (PV) system to offset additional energy consumption. Therefore, the Project would result in a less-than-significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impact would be *less than significant*

Impact #3.4.6b—Would the Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Assembly Bill 32 (Health and Safety Code Sections 38500–38599), also known as the California Global Warming Solutions Act of 2006, commits the State to achieving year 2000 GHG emission levels by 2010 and year 1990 levels by 2020. To achieve these goals, AB 32 tasked the California Public Utilities Commission and the California Energy Commission with providing information, analysis, and recommendations to the California Air Resources Board regarding ways to reduce GHG emissions in the electricity and natural gas utility sectors.

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2014, with energy provisions effective July 1, 2014. The 2013 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. Mandatory measures for residential development pertain to green building; planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; environmental quality; and installer and special inspector qualifications.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009); and
- District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

- If a project complies with an approved GHG Emission Reduction Plan or GHG Mitigation Program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
- If a project does not comply with an approved GHG Emission Reduction Plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
- If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the Lead Agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is Lead Agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO₂eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County.

Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30 years and compared to the 10,000 MTCO₂eq./year criteria. Table 7 of the AQIA (Appendix A) shows GHG emissions associated with the construction phase of the Project. Construction emissions associated with the Project amortized over 30 years equates to 23.04 MTCO₂eq, which is approximately 99.8 percent less than the threshold identified by the SCAQMD.

CARB's California GHG Emissions Inventory provides estimates of anthropogenic GHG emissions within California, as well as emissions associated with imported electricity; natural sources are not included in the inventory. California's GHG emissions for 2015 totaled approximately 440,400,000 MTCO₂eq. The proposed Project's GHG emissions represents 0.000005 percent of the total GHG emissions for the State of California when compared to year 2015 emissions data.

Based on the assessment above, the Project will not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. The proposed Project will not increase energy consumption associated with long-term (operational) activities beyond existing levels given the nature of the Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.7 - GEOLOGY AND SOILS

Would the Project:

- 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?
- b. Result in substantial soil erosion or the loss of topsoil?
- 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?
- 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?
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

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

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

Discussion

Impact #3.4.7a(i)—Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

The Project would improve aging sewer line infrastructure and upgrade the existing WWTF operated by the District. The proposed construction and operation of the Project would not increase the potential exposure of persons living and working on the Project site to seismic events including risk of loss, injury, and death related to earthquakes and related hazards, which are described as follows:

It is general knowledge that the Merced County region is seismically active. Although the District service area is not crossed by any known active or potentially active faults, it does have surrounding faults in various directions. The following are principal sources of seismic activity for the County of Merced: San Andreas fault to the west (approximately 15 miles from the Merced County line); Hayward and Calaveras faults to the northwest; White Wolf, Garlock and Sierra Nevada faults to the south; and Bear Mountain fault zone located about five miles east of and parallel to the eastern border of Merced County. The only known fault inside the County of Merced is the “Ortigalita” also known as “Telsa-Ortigalita Fault” located in the western quarter of the County. The Ortigalita Fault dissects the Coast Range in northwesterly direction; and even though it has been historically inactive, there is no guarantee it will not be active in the future. However, the Project will not increase the risk of loss, injury, or death as a result of fault rupture; therefore, impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impact would be *less than significant*.

Impact #3.4.7a(ii)—Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

In the event of an earthquake on a nearby fault, it is likely that the Project site would experience ground shaking, exposing people and structures associated with the Project, to ground shaking. There is documented evidence of six earthquakes that shook the area in 1872, 1906, 1952, 1966, 1984, and 1989. None of the earthquakes reported have caused death, but major structural damage occurred in Los Banos in 1906 with minor structural damage recorded throughout the County on other occasions.

Structures constructed as part of the Project would be required by State law to be constructed in accordance with all applicable International Building Code (IBC) and California Building Code (CBC) earthquake construction standards, including those relating to soil characteristics. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at the Project site. Therefore, there would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.7a(iii)—Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Liquefaction could occur in local areas during a strong earthquake or seismic ground shaking where unconsolidated sediments and high-water tables coincide. As afore mentioned in *Section 2.7–Project Environment and Setting*, as well as in the District’s Project Soils report, the Project subsurface consists of: San Joaquin loam, Atwater loamy sand, Bear Creek loam, Honcut silt loam, Greenfield sandy loam, Wyman clay loam, Landlow clay, Alamo clay, Landlow silty clay loam and San Joaquine-Alamo complex (Engineers, 2019). These soils typically have a high moisture-holding capacity, frequent irrigation is not required and hazard for erosion is slight.

The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure including liquefaction. Structures constructed as part of the Project would be required by State law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at

the Project site. Therefore, there would be less-than significant impacts as a result of ground failure and liquefaction.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.7a(iv)—Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

There is no potential for the Project site to be affected by falling rocks or landslides in the event of a major earthquake, as the proposed site and surrounding areas are flat and do not include dramatic elevation changes. Based on the Alquist-Priolo Earthquake Fault Zoning Map, the estimated maximum horizontal acceleration at the site due to historical seismic activity, landslides and soil types; a minor subsurface settlement may result during a major earthquake (Merced County, 2013). This is considered less than significant. The property is flat and there is a low potential for landslides. The site would not be subject to liquefaction impacts due to the depth of groundwater below ground surface.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.7b—Would the Project result in substantial soil erosion or the loss of topsoil?

Construction activities associated with the proposed Project would temporarily disrupt surface vegetation and/or soils that would expose disturbed areas to wind and water erosion. National Pollutant Discharge Elimination System (NPDES) stormwater permitting programs regulate stormwater quality from construction sites, which includes erosion and sedimentation. Under the NPDES permitting program, the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) are required for construction activities that would disturb an area of one acre or more. As noted in *Section 3.4.10-Hydrology and Water Quality*, Impact #3.4.10a., a SWPPP must identify potential sources of erosion or sedimentation that may be reasonably expected to affect the quality of stormwater discharges as well as identify and implement Best Management Practices (BMPs) that ensure the reduction of these pollutants during stormwater discharges. Typical BMPs intended to control erosion include sandbags, detention basins, silt fencing, storm drain inlet protection, street sweeping, and monitoring bodies of water. Mitigation Measure (MM) HYD-1 requires

the approval of a SWPPP to comply with the NPDES General Construction Permit from the Central Valley Regional Water Quality Control Board (RWQCB).

The Project would not increase the total area of impermeable surfaces in the Project area beyond those that currently exist. The soil types in the Project area are not especially susceptible to erosion, as discussed in the previous section. The Project would not result in substantial soil erosion or the loss of topsoil. Impacts would be less than significant with incorporation of mitigation measures.

MITIGATION MEASURE(S)

MM GEO-1: Prior to ground disturbance, an Erosion Control Plan for construction activities will be prepared that describes the BMPs that will be incorporated to reduce the potential for soil erosion and loss of topsoil. The BMPs could include soil stabilizers and silt fencing as well as other measures.

Implementation of MM HYD-1 (see 3.4.10–Hydrology and Water Quality).

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.7c—Would the Project 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?

There is no evidence of landslides on the Project site, and the site is not located in an unstable geologic unit or on soil that is considered unstable. The USDA NRCS indicates that, San Joaquin loam, Atwater loamy sand, Greenfield sandy loam, Wyman clay loam, Landlow clay Landlow silty clay loam and San Joaquin-Alamo complex (Figure 3.4.7-1) lie beneath the Project site (Franklin County Water District, 2019). These soils are not susceptible to subsidence with a zero to eight percent slope. The proposed Project would not be located on a geologic unit or soil that is unstable, or may become unstable as a result of the Project or result in a potential on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

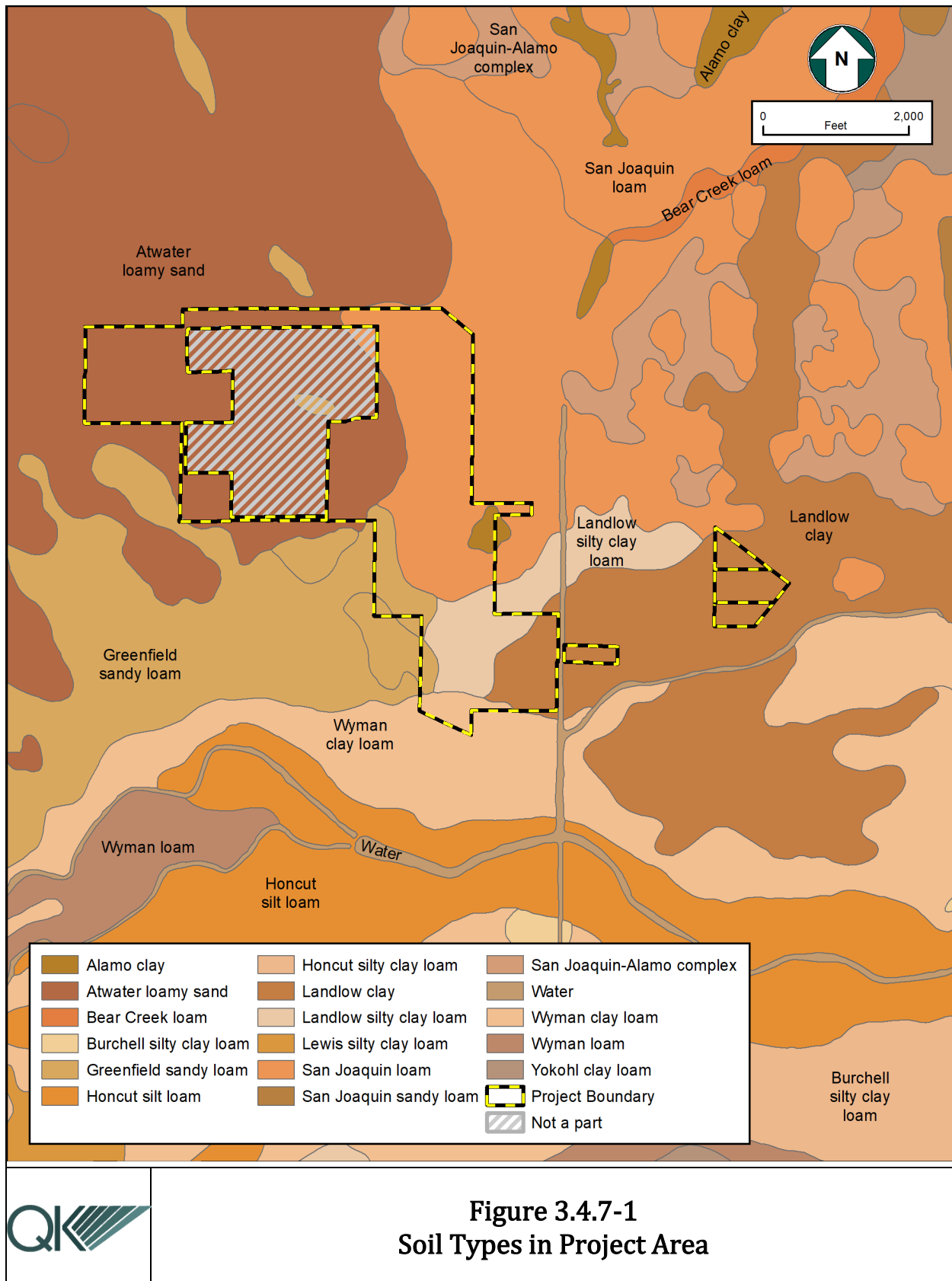


Figure 3.4.7-1
Soil Types in Project Area

Impact #3.4.7d—Would the Project 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?

Based on the type of soil encountered in the top five feet of soil in the Project area, it was determined that it is likely that no significant areas of highly expansive soils would be encountered (Merced County, 2013). The Project would comply with all applicable requirements of the California Code of Regulations and the most recent California Building Standards Code that provides criteria for the appropriate design of buildings. The proposed Project would not be located on any identified expansive soils, as defined in the California Building Code. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.7e—Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

The proposed Project does not include the construction of additional infrastructure that would necessitate the usage of septic tanks. The existing and future system has been and will continue to be designed to meet all applicable State and local codes and regulations. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.7f—Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The Project includes the excavation of existing roadway shoulders and/or roadways in order to replace aging sewer infrastructure. A paleontological resource assessment was completed and is included as Appendix D of this document.

According to the results of the desktop studies and museum record searches, the investigators assign both the Riverbank and Modesto Formations, and therefore the entire Project area, as High Potential. As such, any excavations that extend below the uppermost soil and sediment layers may impact significant paleontological resources preserved within

these units. This includes all Project-related excavations, as they are proposed to reach depths of 5–14 feet bgs. However, due to the localized and unpredictable occurrences of fossils in these units, their high potential ranking may be subject to change following observations of the subsurface geology during excavation. Based on County General Plan policy which sets out direction for assessing, avoiding, and providing for mitigation strategies for paleontological resources, the Project could impact resources and therefore requires mitigation.

MITIGATION MEASURE(S)

MM GEO-2: The District and/or its contractors shall provide for a Project-specific paleontological resource impact mitigation program (PRIMP) prior ground disturbance associated with the Project. The PRIMP shall be developed by a professional paleontologist (Project Paleontologist, Principal Investigator) who meets SVP (2010) qualifications standards. The PRIMP will specify the steps to be taken to mitigate impacts to paleontological resources. For instance, Worker’s Environmental Awareness Program (WEAP) training should be prepared and presented in-person to all field personnel prior to the start of Project-related earth-moving activities. The PRIMP will specify whether construction monitoring is required, and, if so, the frequency of required monitoring (i.e., full-time, spot-check, etc.). The PRIMP also will provide details about bulk-sediment screening, fossil collection, analysis, and preparation for permanent curation at an approved repository. Lastly, the PRIMP will describe the different reporting standards to be used for negative or positive findings during construction activities.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.8 - GREENHOUSE GAS EMISSIONS

Would the Project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

An Air Quality and Greenhouse Gas Analysis report was relied upon in the analysis of impacts related to greenhouse gases (GHGs). The full Air Quality & Greenhouse Gas Impact Assessment can be found in Appendix A. This report was prepared in accordance with the SJVAPCDs guidelines and adopted policies of CARB.

In addition to providing an assessment of the Project's impacts to GHGs, the report includes a detailed description of the regulatory environment as it relates to GHGs.

GHGs are identified as any gas that absorbs infrared radiation in the atmosphere. GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), halogenated fluorocarbons (HCFCs), ozone (O₃), perfluorinated carbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF₆). On December 7, 2009, the EPA issued an Endangerment Finding on the above referenced key well-mixed GHGs. These GHGs are considered "pollutants" under the Endangerment Finding. However, these findings do not themselves impose any requirements on industry or other entities.

The Global Warming Solutions Act (Assembly Bill [AB] 32) was passed by the California Legislature and signed into law by the Governor in 2006. AB 32 requires that GHGs emissions in 2020 be reduced to 1990 levels. GHGs rules and market mechanisms for emissions reduction were required to be in place as of January 2012.

Impact #3.4.8a—Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the Lead Agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. Because there was no numerical threshold addressed by the SJVAPCD, the South Coast Air Quality Management District's

(SCAQMD) standards were applied to this Project. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is Lead Agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO₂eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30-years and compared to the 10,000 MTCO₂eq./year criteria. Construction emissions associated with the Project amortized over 30 years equates to 23.04 MTCO₂eq, which is approximately 99.8 percent less than the threshold identified by the SCAQMD.

CARB's California GHG Emissions Inventory provides estimates of anthropogenic GHG emissions within California, as well as emissions associated with imported electricity; natural sources are not included in the inventory. California's GHG emissions for 2015 totaled approximately 440,400,000 MTCO₂eq. The proposed Project's GHG emissions represents 0.000005 percent of the total GHG emissions for the State of California when compared to year 2015 emissions data.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. It should be noted that the Project will not generate emissions associated with long-term emissions given the nature of the Project. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the District's wastewater collection system. Therefore, the Project's greenhouse gas emissions are not cumulatively considerable.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.8b—Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As noted previously, California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB

32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequent enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the MCAG region, CARB set targets at five percent per capita decrease in 2020 and a 10 percent per capita decrease in 2035 from a base year of 2005. MCAG's 2014 RTP/SCS, which was adopted in 2016, projects that the Merced County region would achieve the prescribed emissions targets.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPOs to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted General Plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the Project is the Merced County 2030 General Plan, which was adopted in 2012.

The proposed Project is consistent with the currently adopted General Plan for Merced County and the adopted 2014 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project are approximately 99.8 percent less than the threshold identified by the SCAQMD.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project further the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of GHGs in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in GHGs elsewhere. If other states and countries were to follow

California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The CARB Governing Board approved a Climate Change Scoping Plan (CARB 2008). The Scoping Plan outlines the State's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008).

Project consistency with applicable strategies in the Scoping Plan is assessed in Table 3.4.8-1. As shown, the Project is consistent with the applicable strategies in the Scoping Plan.

Table 3.4.8-1
Consistency with Applicable Scoping Plan Reduction Measures

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater benefits for California.	Not Applicable. When this cap-and-trade system begins, products or services (such as electricity) would be covered and the cost of the cap-and-trade system would be transferred to the consumers.
California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the Project site.
Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California	Consistent. This is a measure for the State to increase its energy efficiency standards. However, the applicant shall consider implementing Title 24 and Green Building Standards.
Renewable Portfolio Standard. Achieve 33% renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal,	Not applicable. No new buildings are being built and energy consumption is not expected to increase.

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
<p>small hydroelectric, biomass, anaerobic digestion, and landfill gas.</p> <p>Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard</p>	<p>Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency. When this measure is initiated, the standard would be applicable to the fuel used by vehicles that would access the Project site.</p>
<p>Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.</p> <p>Vehicle Efficiency Measures. Implement light duty vehicle efficiency measures.</p>	<p>Not Applicable. The Project is not related to developing GHG emission reduction targets.</p> <p>Not Applicable. When this measure is initiated, the standards would be applicable to the light-duty vehicles that would access the Project site.</p>
<p>Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.</p>	<p>Not Applicable. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.</p>
<p>Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs.</p>	<p>Consistent. This measure is being implemented by various agencies throughout California. The applicant shall consider implementing Title 24 and Green Building Standards</p>
<p>Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.</p>	<p>Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency. When this measure is initiated, the standards would be applicable to vehicles that access the Project site.</p>
<p>Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to</p>	<p>Not Applicable. The Project is not an industrial land use.</p>

Scoping Plan Reduction Measure	Project Consistency or Reason Why Not Applicable
control fugitive methane emissions and reduce flaring at refineries. High Speed Rail. Support implementation of a high-speed rail system.	Not Applicable. This is a statewide measure that cannot be implemented by a project applicant or the county.
Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent. The State's goal is to increase the use of green building practices. The Project would implement some green building strategies through Project design features.
High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.	Not Applicable. When this measure is initiated, it would be applicable to those gases that have high global warming potential that would be used by the Project (such as in air conditioning and refrigerators).
Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Not applicable. The Project would not contain a landfill.
Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	Not Applicable. No forested lands exist on site.
Water. Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. This is a measure for State and local agencies. The Project would implement water conservation features in its BMPs.
Agriculture. In the near-term, encourage investment in manure digesters and at the five-year Scoping Plan update determine if the program should be made mandatory by 2020.	Not Applicable. The proposed Project would not include agriculture.

Source: California Air Resources Board 2008.

In summary, the Project would not obstruct attainment of any of the goals established under AB 32. The Project would comply with all present and future regulatory measures developed in accordance with AB 32 and CARB's Scoping Plan. The proposed Project would incorporate a number of design features that would minimize GHG emissions beyond existing regulatory requirements. Such measures also are consistent with the California Air Pollution Control Officers Association paper and general guidance provided by the SJVAPCD.

With the incorporation of standard measures, Project design features, mitigation measures and applicable laws, the Project's forecasted emission of greenhouse gases has been determined to be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
3.4.9 - HAZARDS AND HAZARDOUS MATERIALS				
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

Impact #3.4.9a—Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction of the District's WWTP and sewer line system would not involve the transport, use, and storage of large quantities of hazardous materials. The Project would involve the transport and use of minor quantities of hazardous materials, such materials would be limited to fuels, oils, lubricants, hydraulic fluids, paints and solvents utilized at the Project site for construction purposes. Such materials would be temporary in nature and would cease upon completion of the Project.

The presence and use of these hazardous materials, creates the potential for accidental spillage and exposure of workers to these substances. Hazardous and non-hazardous wastes would likely be transported to and from the Project site during the construction phase. Construction would involve the use of some hazardous materials, such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum-based products; although these materials are commonly used during construction activities, they would not be disposed of on the Project site. The Project will have approximately 21,723 linear feet of sewer mains replaced via conventional construction methods or rehabilitated using Trenchless construction method aka cured-in-place (CIPP) (Franklin County Water District, 2019). The existing pipe network will remain in the ground after the new pipes have been installed. The old pipes will be handled and stored in accordance with all applicable regulations to minimize potential public exposure. Sanitary waste generated during construction would be managed by means of portable toilets, which would be located at reasonably accessible on-site locations.

No known historic oil activity has occurred on the site. The Project is not located within the boundaries of an oilfield. According to the Division of Oil, Gas and Geothermal Resources (DOGGR) records and maps, no abandoned oil wells are located on the site (see Figure 3.4.9-1). There are no properties in the immediate vicinity of the D WWTP that are on the Cortese List (Cal EPA, n.d.).

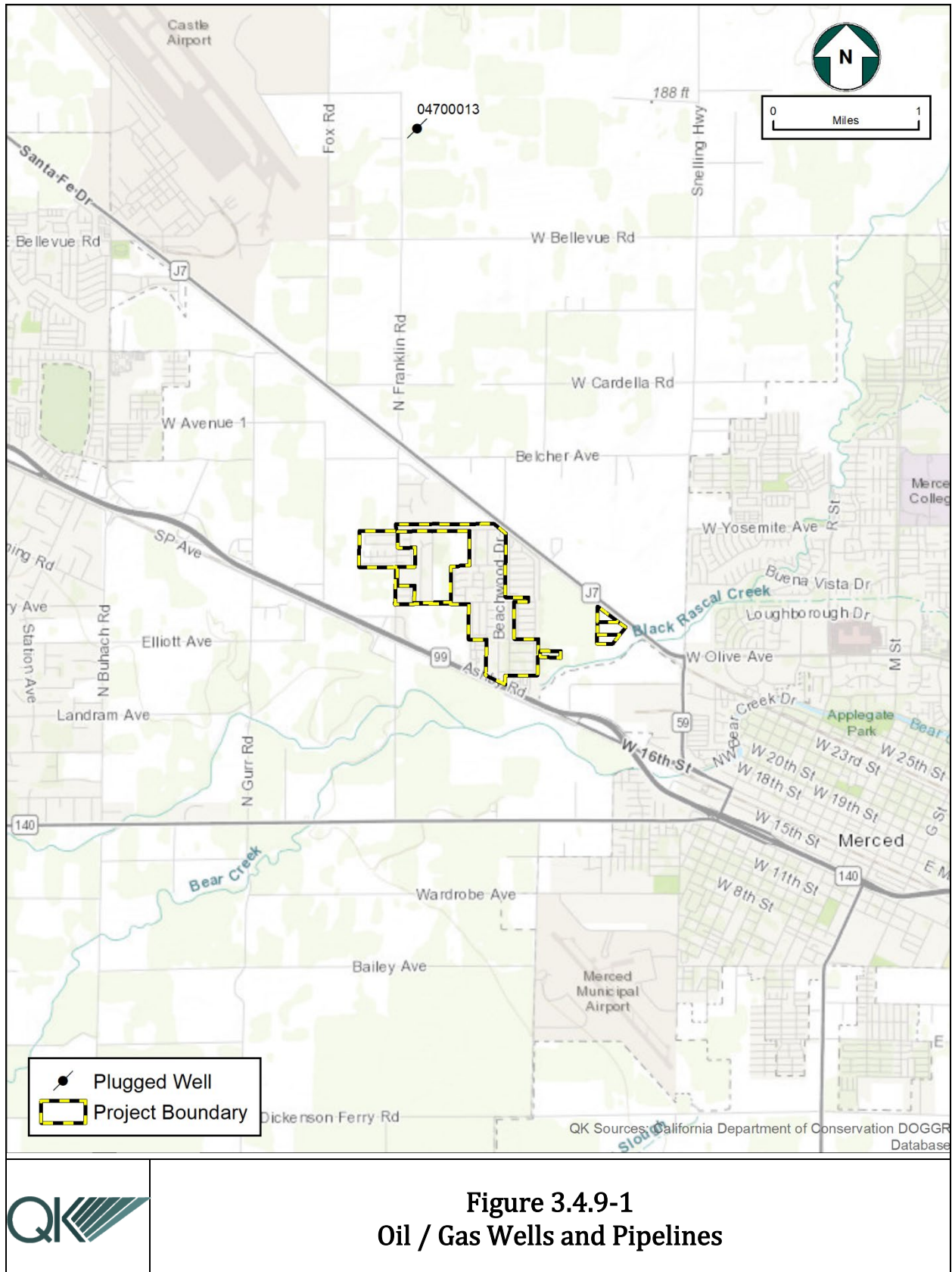
The proposed Project would not emit hazardous emissions. The Project would handle hazardous waste, yet this handling is essential to the function of the District (Merced County, 2013). Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.



Impact #3.4.9b—Would the Project 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?

The construction and updates to the District's WWTP contains an inherent risk of upset and accident that could potentially release hazardous materials into the environment. Replacement of the pipes will happen in-place and all applicable precautions will be taken to reduce the likelihood of an accident resulting in the release of hazardous materials into the environment. All contracts shall transport, store, handle, and dispose of construction-related hazardous materials consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans, Central Valley RWQCB, and Merced County Environmental Health Department standards. The project will also prepare a, "Title 22 Report to the State Water Resource Control Board Division of Drinking Water (SWRCB-DDW) describing the new effluent disposal areas and safety measures that will be implemented to protect public health" (Franklin County Water District, 2019). Standard County practices of reviewing site plans for all development proposals on a case-by-case basis, will further minimize the potential for public exposure to hazardous materials. Implementation of these management practices would result in a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.9c—Would the Project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are two elementary schools within one-quarter mile of the proposed project: Joe Stefani Elementary School and Franklin Elementary School. These schools are adjacent to roadways that contain sewer pipes that may need to be repaired. The amount of hazardous emissions from the Project is less than significant and all hazardous materials would be handled in accordance with applicable regulations during construction and operation of the proposed Project. Therefore, the impact is less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.9d—Would the Project be located on a site that 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?

An online search was conducted on both the California Environmental Protection Agency (CAL EPA) website for Cortese Act locations on or near the Project site (Cal EPA, n.d.) and on the Department of Toxic Substances Control (DTSC) website (Cal EPA, n.d.) and (Department of Toxic Substances Control, n.d.). It was discovered that there were no hazardous or toxic sites in the vicinity of the Project. By utilizing the online GeoTracker tool on the State Water Resources Control Board website, it was identified that there is one cleanup program site currently undergoing remediation and six Permitted Underground Storage Tanks (UST) within the project area (California Water Resources Board, n.d.). Therefore, any impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.9e—For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for excessive noise or people residing or working in the Project area?

The Project falls into Compatibility Zone C in the Merced County Airport Land Use Compatibility Plan. Under the land use category of Transportation, Communication, and Utilities, the section titled Wastewater Facilities: Treatment and Disposal, projects that fall under the designation of Zone C are determined to be “normally compatible (County, Merced Regional Airport Land Use Compatibility Plan, 2012).” Given the nature of the Project, it is unlikely there would be a safety hazard for excessive noise or for the people residing or working in the Project area. Therefore, there would be a less than significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.9f—Would the Project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

The proposed Project is required to adhere to the standards set forth in the Uniform Fire Code, which identifies the design standards for emergency access during both the Project's construction and operational phases. The proposed Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities.

The proposed Project would not impair implementation of or physically interfere with an adopted Emergency Response Plan or Emergency Evacuation Plan. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.9g—Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The proposed Project is surrounded by a mix of urban, agricultural, and residential land uses and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires as there are no wildlands in the vicinity. The Project site is not located within a hazard zone classified as Very High, High or Moderate for wildland fires (Cal Fire, 2006). Construction and operation of the Project is not expected to increase the risk of wildfires on and adjacent to the Project site. The Project will also be required to comply with all applicable standards as required by the Merced County Fire Department.

The proposed Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Therefore, the Project would have a no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
3.4.10 - HYDROLOGY AND WATER QUALITY				
Would the Project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Result in substantial erosion or siltation on-or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv. Impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

Impact #3.4.10a—Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction of the Project would involve grubbing, land clearing, excavation, grading, and paving. During site grading and construction activities, areas of bare soil could be exposed to erosive forces that would otherwise not be present. Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, and grading activities could result in increased erosion and sedimentation to surface waters.

Additionally, accidental spills or disposal of potentially harmful materials used during construction or operation of the Project could possibly wash into and pollute surface water runoff. Materials that could potentially contaminate the construction area, or spill or leak, include lead-based paint flakes, diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. A SWPPP for construction-related activities would include, but not be limited to, the following types of BMPs to minimize the potential for pollution related to material spills:

- Vehicles and equipment will be cleaned;
- Vehicle and equipment fueling and maintenance requirements will be established; and
- A spill containment and clean-up plan will be in place prior to and during construction activities.

In order to reduce potential impacts to water quality during construction activities, Mitigation Measure MM HYD-1 requires the Project proponent to file a Notice of Intent (NOI) to comply with the NPDES General Construction Permit and prepare a SWPPP. The Project SWPPP would include BMPs targeted at minimizing and controlling construction and post-construction runoff and erosion to the “maximum extent practicable.” Mitigation Measure MM HYD-2 requires the District to limit grading to the minimum area necessary for construction and operation of the Project.

In order to reduce potential impacts to water quality during construction and operation activities, Mitigation Measures MM HYD-1 and MM HYD-2 would be required. With mitigation, the proposed Project would not violate any water quality standards or waste discharge requirements. Therefore, the Project would have a less than significant impact with incorporation of mitigation.

MITIGATION MEASURE(S)

MM HYD-1: Prior to construction, the District shall submit an approved copy of: (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the

SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended BMPs for the construction phase may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil properly;
- Protecting existing storm drain inlets and stabilizing disturbed areas;
- Implementing erosion controls;
- Properly managing construction materials; and
- Managing waste, aggressively controlling litter, and implementing sediment controls.

MM HYD-2: The District shall limit grading to the minimum area necessary for construction and operation of the Project. Final grading plans shall include BMPs to limit on-site and off-site erosion.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10b—Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

The replacement of portions of the sewer system and upgrades to the WWTF operated by the District would not increase the volume of water extracted from groundwater supplies or interfere with groundwater recharge in the area. The replacement pipes would be the same size as those currently in place, but the construction of additional aeration ponds as part of the proposed Project would result in additional wastewater being treated by the District. However, the incremental increase is not anticipated to interfere with groundwater recharge to a degree that would result in a significant impact. Therefore, the impact would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impact would be *less than significant*.

Impact #3.4.10c(i) —Would the Project 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 result in substantial erosion or siltation on site or off site?

The rate and amount of surface runoff is determined by multiple factors, including the following: topography, the amount and intensity of precipitation, the amount of evaporation that occurs in the watershed and the amount of precipitation and water that infiltrates to the groundwater. Although all pipe replacement will occur in ground, the proposed Project

would alter the existing drainage pattern of the site due to the construction of additional aeration ponds. However, this change in existing drainage is not anticipated to result in significant impacts upon implementation of mitigation.

As discussed in Impact #3.4.10a. above, potential impacts on water quality arising from erosion and sedimentation are expected to be localized and temporary during construction. Construction-related erosion and sedimentation impacts as a result of soil disturbance would be less than significant after implementation of an SWPPP (see Mitigation Measure MM HYD-1) and BMPs required by the NPDES. No drainages or other water bodies are present on the Project site, and therefore, the proposed Project would not change the course of any such drainages; however, erosion may occur on site during rain events or high winds. Mitigation Measure MM HYD-2 requires the District to limit grading to the minimum area necessary for construction and operation of the Project.

With mitigation, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site. Therefore, the Project would have a less-than-significant impact with incorporation of mitigation.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10c(ii)—Would the Project 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

See Impact #3.4.10c(i) above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10c(iii) —Would the Project 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 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?

See Impact #3.4.10c(i) above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10c(iv) —Would the Project 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 impede or redirect flood flows?

See Impact 3.4.10c(i) above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10d—Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

The majority of the District area is in a one percent annual flood zone (See Figure 3.4.10-1). However, the proposed Project would not increase the risk of exposure to flood hazard beyond existing conditions because the additional ground disturbance is not anticipated to result in significant changes to the drainage of the Project site and surrounding areas. Additionally, the Project site is not near any oceans or standing bodies of water. Therefore, the Project would have a less than significant impact.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.10e—Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Merced Integrated Regional Water Management Plan contains the following objectives relevant to the proposed Project:

- Meet all demands for all uses, including agriculture, urban, and environmental resource needs;
- Protect and improve water quality for all beneficial uses, consistent with the Basin Plan; and
- Address water-related needs of disadvantaged communities (DACs).

A Groundwater Sustainability Plan (GSP) is currently being developed by the Merced Subbasin Groundwater Sustainability Agency (GSA). As of July 11, 2019, the Merced Subbasin GSA extended the contract of their technical staff through December 31, 2019 in the process of developing the GSP. Their next meeting is planned for October 10, 2019.

The proposed Project would help the District achieve the goals of the Merced Integrated Regional Water Management Plan by replacing aging sewer infrastructure and improving the level of service for District residents. Therefore, the Project would be consistent with applicable Water Quality Control Plans and there would be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.11 - LAND USE AND PLANNING

Would the Project:

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. | Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. | Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Impact #3.4.11a—Would the Project physically divide an established community?

The proposed Project site consists of roadways throughout the Community of Franklin. The proposed Project would not physically divide an established community. Therefore, the Project will have no impact.

MITIGATION MEASURE(S)

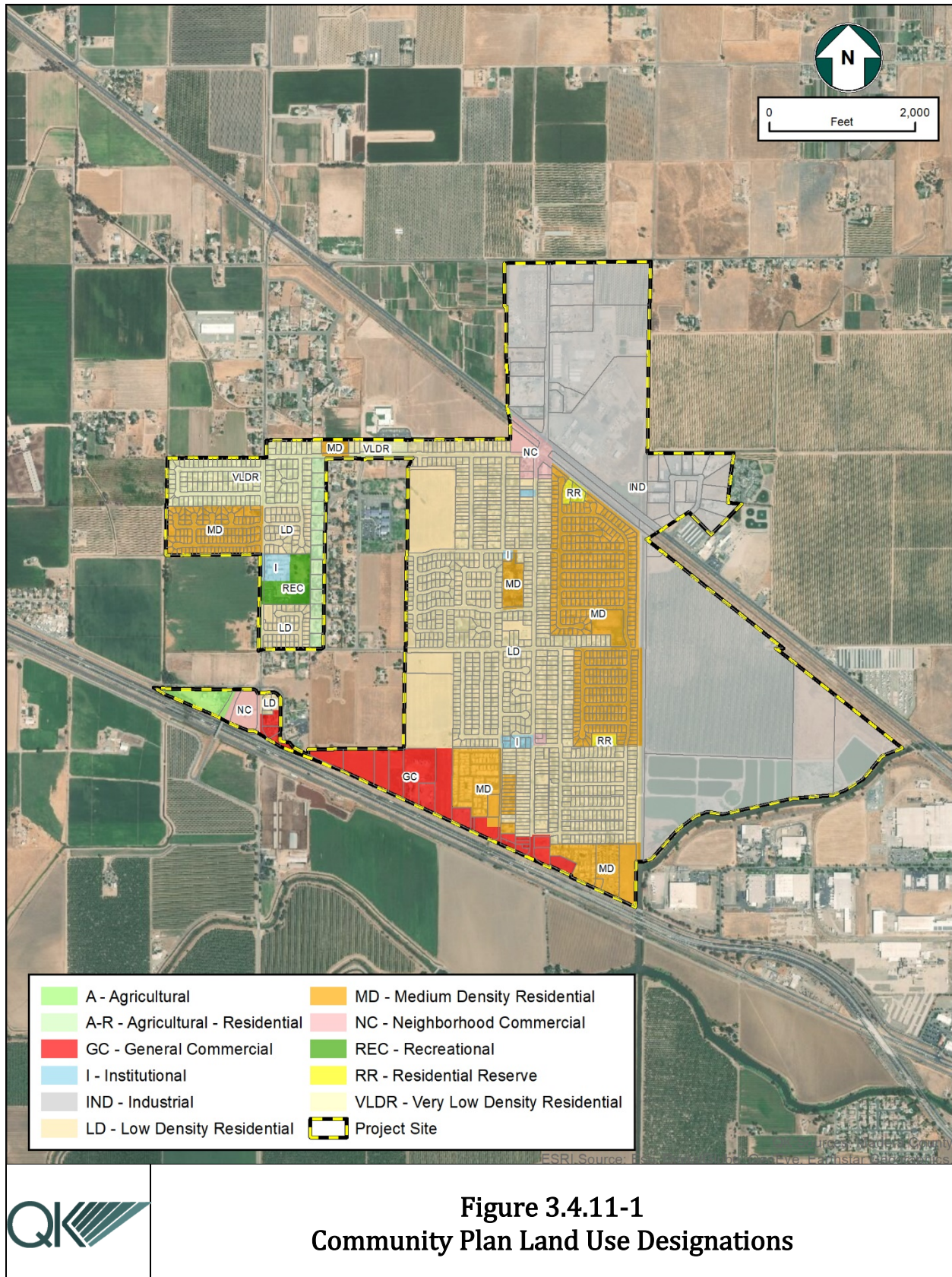
No mitigation is required.

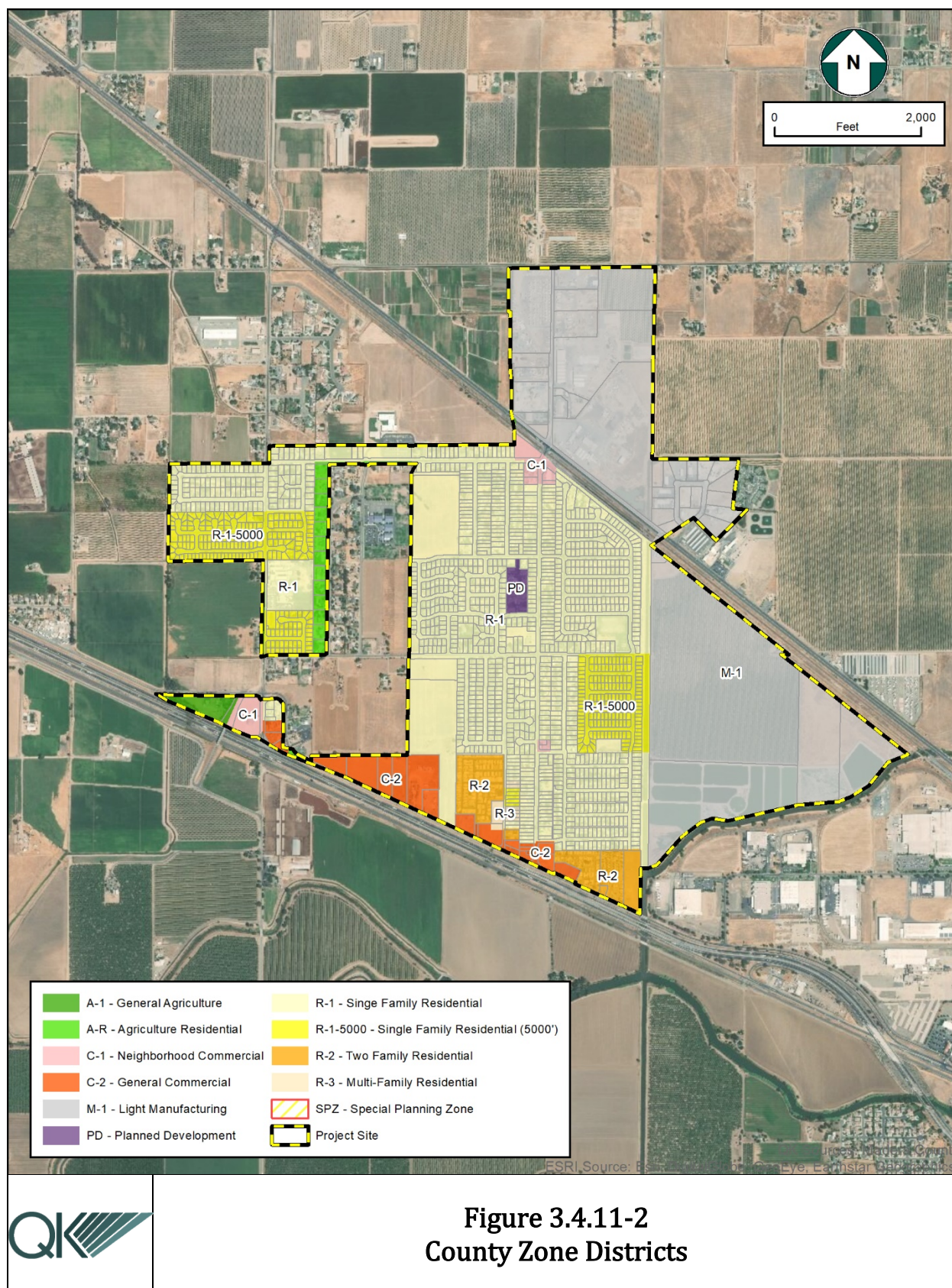
LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.11b—Would the Project 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 Project involves the rehabilitation and repair of existing, dilapidated sewer lines and the improvements to the wastewater treatment plant. Any expansion of the wastewater treatment plant would not generate activity beyond what is consistent with current State permit and to adequately serve existing uses. The proposed Project would not conflict with any applicable Land Use Plan, policy, or regulation of an agency with jurisdiction over the Project including, but not limited to the General Plan, Community or Specific Plan (Figure 3.4.11-1), Local Coastal Program, or Zoning Ordinance (Figure 3.4.11-2) adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Project would have no impact.





MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.12 - MINERAL RESOURCES

Would the Project:

- | | | | | | |
|----|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. | Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. | Result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other Land Use Plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

Impact #3.4.12a—Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No current mineral extraction activities exist on the Project site nor are any mineral extraction activities included in the Project design. As illustrated in Figure 3.4.9-1, the Project site is not located in an oilfield and there are no known wells located on the site. The closest oil well is located approximately two miles north of the Project site and is no longer active. The proposed Project is on land classified as MRZ-2B SG3, however the loss of availability of mineral resources would be unlikely as the Project does not propose the extraction of mineral resources (Department of Conservation, 1999). Additionally, the proposed Project would not restrict the ability of mineral rights' holders in the area to exercise their legal rights to access surrounding sites for the exploration and/or extraction of underlying oil research or other natural resources.

The proposed Project is unlikely to 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. Therefore, there would be a less than significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impact would be *less than significant*.

Impact #3.4.12b—Would the Project 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?

As seen in Figures 3.4.11-1 and 3.4.11-2 in *Section 3.4.11–Land Use and Planning*, the proposed Project is not designated as a mineral recovery area by the Franklin–Beachwood Specific Urban Development Plan. While the inference of significant resource presence is supported by Merced County’s classification of MRZ-2B SG3 the United States Geological Survey’s Mineral Resources Data System confirms that the Project would not interfere with mining operations and would not result in the loss of land designated for minerals and petroleum. As shown in Figure 3.4.9-1, the nearest oil well to the Project site is located approximately two miles to the north of the Project site.

The proposed Project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, Specific Plan or other Land Use Plan. Therefore, the Project would have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impact would be *less than significant*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.13 - NOISE

Would the Project result in:

- | | | | | | |
|----|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. | Generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. | For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Impact #3.4.13a—Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies?

The Merced County Noise Ordinance contains noise policies that are applicable to the Project site. The Noise Element establishes noise level criteria in terms of the Day-Night Average Sound Level (Ldn) metric. The Ldn is the time-weighted energy average noise level used to compare the noisiness of neighborhoods. Ldn is a single number result that is calculated for a complete 24-hour period and usually made up of results taken at shorter intervals such as five minutes or one hour and then averaged over the whole 24 hours.

The Noise Element establishes a land use compatibility criterion of 65 Ldn for residential uses and 70 Ldn for non-residential uses (County of Merced, 2019).

As indicated in the foregoing discussion of the Project's noise impacts, because the Project construction and operation would generate noise levels below standards established in the Merced County Noise Ordinance, and therefore the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.13b—Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction activities in general can have the potential to create groundborne vibrations. However, based on the soil types found in the general Project vicinity, it is unlikely that any blasting or pile-driving would be required in connection with construction of the Project. Therefore, the potential for groundborne vibrations to occur as part of the construction of the Project is considered minimal. Further, operation of the Project would not contain any activities which would create groundborne vibrations. The proposed Project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Therefore, the Project would have a less than significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.13c—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?

The Project area is located approximately two miles north of Merced Regional Airport and mostly within Zone C of the Airport Land Use Compatibility Plan (ALUCP). A small portion of the Project area lies within Zone B2 (County of Merced, 2012). The Project would conform with all applicable policies and regulations included in the ALUCP. The Project is not located in the vicinity of a private airstrip. Therefore, development of the proposed Project would not expose people living in this area to excessive noise levels due to proximity to an airport, and no impact would occur.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.14 - POPULATION AND HOUSING

Would the Project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Induce substantial population unplanned growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

This analysis relied upon the Merced County General Plan for evaluating the significance of the Project's impacts to Population and Housing issues outlined in this section.

Impact #3.4.14a—Would the Project 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 would include the replacement or repair of existing dilapidated sewer lines in some areas of the Community of Franklin–Beachwood. This would provide a more reliable and safe sewer collection system for existing residents in Franklin–Beachwood. The District proposes sewer line and wastewater treatment plant improvements that will address aging infrastructure and bring it up to the standard of its existing State permit and prevent potential unsanitary conditions. The Project would not influence population growth beyond what is anticipated in the Merced County General Plan. Therefore, impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.14b—Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed Project does not propose to displace any existing housing or people in the Project area nor would implementation of the Project require construction or replacement of housing.

In addition, it is anticipated that construction workers would come from the surrounding area and would not require new housing. The proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. Therefore, the Project would have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.15 - PUBLIC SERVICES

Would the Project:

- 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 to other performance objectives for any of the public services:

i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

The replacement and upgrade of sewer lines is not anticipated to directly require the employment of additional fire fighters or law enforcement officers. The proposed Project was anticipated in the growth projections for the Franklin–Beachwood Community Specific Plan and therefore, the Project’s public services needs have already been accounted for in projecting future public service needs for the County, including police and fire protection services. It is anticipated that existing and future public facilities and equipment would be able to maintain the current level of service. No other public services would be significantly affected by the Project.

Impact #3.4.15a(i)—Would the Project 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 to other performance objectives for any of the public services—Fire Protection?

The Merced County Fire Department provides fire, rescue, and emergency medical services to the Community of Franklin–Beachwood. Station 61 is located in Merced at 961 N. Gurr Road. It is staffed 24 hours a day by a full-time Fire Captain or Fire Apparatus Engineer. Emergency response is augmented with volunteer firefighters. Response times would not be impacted by the Project.

As discussed above, the Project will repair or replace existing dilapidated sewer lines and will not be sized to allow for growth beyond what has been anticipated by the Franklin–Beachwood Community Specific Plan. Therefore, the Project would not increase the need for fire protection services beyond the baseline condition.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.15a(ii)—Would the Project 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 to other performance objectives for any of the public services—Police Protection?

Law enforcement for the Community of Franklin–Beachwood is provided by Merced County Sheriff Department as well as the California Highway Patrol. Current response times for Merced County’s unincorporated areas are less than 10 minutes on emergency calls, increasing to approximately 30 minutes on non-emergency calls. In addition to the primary Sheriff facilities, there are Community Law Enforcement Offices (CLEO) which serve as hubs for community patrols.

As discussed above, the Project will repair existing sewer lines and is not intended or sized to provide for growth. Any growth that may incidentally occur has been anticipated by the Franklin–Beachwood Community Specific Plan and the Project will not provide for growth beyond that. Therefore, the Project would not increase the need for law enforcement services beyond what is anticipated by the Franklin–Beachwood Specific Urban Development Plan.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.15a(iii)—Would the Project 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 to other performance objectives for any of the public services—Schools?

The replacement and upgrade of sewer lines is not anticipated to increase the population of existing schools or necessitate the construction of additional schools. The population of the Community of Franklin–Beachwood will not increase beyond what the County has planned for. Therefore, there would be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.15a(iv) —Would the Project 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 to other performance objectives for any of the public services—Parks?

El Capitan Estates Park, a dual use four-acre park, is the only park available to all residents of Franklin–Beachwood (County, 2012). However, parks are not a factor of concern for this project because the proposed Project will not facilitate urban growth beyond what is anticipated by the County General Plan, and only allows the District to achieve the level of service that is allowed under its existing permit. Therefore, there would be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.15a(v)—Would the Project 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 to other performance objectives for any of the public services—Other Public Facilities?

The Project would not induce the use of other public facilities such as libraries, courts, and other Merced County services.

The purpose of the proposed Project is to repair failing and potentially dangerous sewer lines, and not intended to facilitate growth. Any additional growth in Franklin–Beachwood would be in accordance with the Franklin–Beachwood Specific Urban Development Plan as well as the Merced County General Plan.

The proposed Project would not 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 a significant environmental impact, in order to maintain acceptable service ratios for any of the public services. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.16 - RECREATION

Would the Project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

Impact #3.4.16a—Would the Project 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?

The proposed replacement and upgrade of sewer lines would not increase the use of existing neighborhood and regional parks. Parks are not a factor of concern for this Project because the proposed project will not facilitate urban growth beyond what is anticipated by the County General Plan, and only allows the District to achieve the level of service that is allowed under its existing permit. Therefore, the Project would have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.16b—Would the Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

See Impact #3.4.16a, above.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.17 - TRANSPORTATION

Would the Project:

a.	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision b?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

The roadways providing the main circulation throughout the Community of Franklin-Beachwood include the following:

Highway 99 is the only designated arterial in the Community of Franklin-Beachwood. Highway 99 is a north-south state highway that stretches across almost the entire length of the Central Valley. Today, Highway 99, as it passes through the Community, consists of two to three travel lanes in each direction.

According to the Franklin-Beachwood Community Specific Plan, Franklin's main connection to the region is by Santa Fe Drive or Highway 99/Ashby Road. Both Santa Fe Drive and Ashby Road link Franklin to Merced and Atwater. Santa Fe Drive is designated a major collector on the General Plan.

Impact #3.4.17a—Would the Project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The Merced County Regional Bicycle Transportation Plan identifies a system of bike trails to be developed throughout the County. The Merced County Board of Supervisors has adopted community plans for may unincorporated communities, including Franklin-Beachwood, to follow goals and policies for the development of bicycle facilities. In the vicinity of Franklin-Beachwood, Santa Fe Drive and Franklin Road have proposed bike lanes. In accordance with

the Merced County Regional Bicycle Transportation Plan, Class II bike lanes are to be implemented within these corridors (Governments, 2008). The proposed Project would involve only the temporary excavation of roadways throughout Franklin–Beachwood in order to replace the existing sewer pipe infrastructure. Intermittent delays and service interruptions would be expected as a result of this temporary excavation but these delays are expected to be less than significant. Once operational, the Project would not generate traffic beyond current levels and any plans for implanting bike lanes could resume. Therefore, the Project would not conflict with any applicable Circulation Plan and impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.17b—Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

See Impact #3.4.17a, above. The Project would not generate any additional trips beyond those needed for construction.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.17c—Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project would not introduce new curves and/or hazardous intersections into the Project vicinity. All roads surrounding the Project sites are straight and set in a grid pattern. No new design or features would be introduced that would result in transportation-related hazards or safety concerns. During construction at the proposed Project site, construction-related delivery trucks would be present. However, these trucks would be traveling along the existing, local roadways and would not interfere with access surrounding the site. Coupled with this, once construction is completed, trucks would cease to access the site. The proposed Project would not result in an increase in hazards due to a design feature or incompatible use.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.17d—Would the Project result in inadequate emergency access?

The California Fire Code establishes standards by which emergency access may be determined.

As described above, the minimal increase of Project-related traffic would not cause a significant increase in congestion and would not reduce the existing levels of service (LOS) on area roads, which could indirectly affect emergency access. The Project is not expected to require closures of public roads, which could inhibit access by emergency vehicles. The proposed Project would not result in inadequate emergency access.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.18 - TRIBAL CULTURAL RESOURCES

Would the Project:

- a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

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Discussion

Impact #3.4.18a(i) —Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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)?

A historic properties inventory was conducted for the Project. One of the measures of the historic properties inventory is a consultation with local tribes. An email was sent to the

Native American Heritage Commission (NAHC) requesting a search of its Sacred Lands File and the contact information for local Native American tribal representatives who would have an interest in sharing information about the Project area and the surrounding areas. The NAHC provided its findings as well as a list of Native American tribal representatives who had cultural affiliation with the Project area. Four tribes with ancestral ties to the region encompassing the Project area were contacted for further information about any cultural significance to the Project area. The potential for impact is less than significant with mitigation incorporated.

For further information, including mitigative measures, see *Section 3.4.5–Cultural Resources*.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.18a(ii)—Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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?

See discussion for #3.4.18a(i).

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.19 - UTILITIES AND SERVICE SYSTEMS

Would the Project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Result in a determination by the wastewater treatment provider that serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion

This analysis relied upon review of applicable requirements of the RWQCB—Central Valley as provided on their website, analysis provided by the Merced County General Plan (County of Merced, 2017), and recommended operations proposed in the Preliminary Engineering Report (Engineers, 2019).

Impact #3.4.19a—Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The repairs to the sewer collection system proposed by the Project are intended to address an existing deficiency and health safety issue. The maximum allowance of wastewater to the wastewater treatment facility (WWTF) operated by the District is 0.6 million gallons per day (MGD), but only receives approximately 0.36 MGD and has an estimated disposal capacity of 0.40 GPD. The WWTF produces undisinfected secondary effluent, which is discharged to twelve percolation/evaporation ponds. According to the Preliminary Engineering Report for the Project, the District's sewer collection system is aged and some of the older portions of the system experience frequent blockages and require cleaning or removal of roots. The physical condition of some of these sewer lines is believed to be very poor, likely beyond their life expectancy, and need to be replaced. Clay sewer mains date back to the 1960s and remain in service. Portions of the District's sewer collection system are severely deteriorated, and in need of replacement or rehabilitation. Rehabilitation of approximately 4,896 linear feet of sewer mains using trenchless construction methods, replacing approximately 16,827 linear feet of sewer mains using conventional construction methods, upgrading the existing WWTF to an extended aeration activated sludge facility, and constructing an additional pond to increase the facility's disposal capacity (Engineers, 2019).

New facilities introduced by the Project include the construction of another aerated lagoon reactor constructed in a new earthen embankment in the western portion of existing evaporation/percolation Pond No. 3 and a new hydraulic inlet structure will be constructed on the southern side of the aerated lagoon reactor (Engineers, 2019). The Project would have a less-than-significant impact on the environment.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.19b—Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

The Project would not require additional allocation of water resources. The existing water supply of the Franklin–Beachwood Community from both private well and Meadowbrook Water Company would be sufficient in order to both construct the Project and operate the Project after construction. Therefore, there would be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.4.19c—Would the Project result in a determination by the wastewater treatment provider that 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?

See discussion for Impact #3.4.19b.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less than significant impact*.

Impact #3.4.19d—Would the Project 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?

Solid waste services and facilities in Merced County are governed by the Merced County Solid Waste Regional Agency (MCSWRA). The MCSWRA owns and operates the two active solid waste disposal/landfill facilities in the County: the SR 59 Landfill and the Billy Wright Landfill. The SR 59 landfill accepts waste generated in Franklin–Beachwood and is located approximately 5 miles southeast of the Project site. The SR 59 Landfill is a Class III landfill that occupies 610 acres and is permitted to receive 1,500 tons per day of solid waste. The remaining capacity of the landfill is almost 24,000,000 cubic yards (Authority, 2016). Implementation of the proposed Project would not result in the generation of additional solid waste in Franklin. Therefore, the Highway 59 landfill has enough capacity to accommodate the proposed Project.

The Project, in compliance with federal, State, and local statutes and regulations related to solid waste, would dispose of all waste generated on site at an approved solid waste facility, the SR 59 Landfill. The proposed Project would be served by a landfill with sufficient permitted capacity to accommodate the Project’s solid waste disposal needs in compliance with federal, State, and local statutes and regulations related to solid waste. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant impact*.

Impact #3.4.19e—Would the Project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

See discussion for Impact #3.4.18d.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.20 - WILDFIRE

If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a. Substantially impair an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Impact #3.4.20a—Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

The Project would result in excavated roadways throughout the Franklin–Beachwood Community in order to repair sewer pipe infrastructure. This excavation could result in the disruption of typical LOS in affected roadways. The minimal increase of Project-related traffic would not cause a significant increase in congestion and would not reduce the existing LOS on area roads, which could indirectly affect emergency responsiveness or the emergency evacuation plan. The Project is not expected to require closures of public roads, which would inhibit access by emergency vehicles. Project operations are temporary in nature and would therefore not significantly reduce accessibility of these roadways in the event of an emergency.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.20b—Would the Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

According to the Merced County General Plan Recirculated Draft PEIR, Franklin–Beachwood is not in a high fire danger area (County, 2012). Portions of the Franklin–Beachwood area contain grasses and the surrounding area mainly consists of agricultural operations, which can also present a fire risk. All construction under the proposed Project shall comply with current California Fire Code and county standards, which would minimize potential risks to wildfire exposure.

MITIGATION MEASURE(S)

No mitigation is required,

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.20c—Would the Project 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 Project would consist of the replacement of subsurface sewer pipes that currently exist in roadways throughout the Franklin–Beachwood Community. Additional infrastructure associated with the Project is not expected to be required, but if needed, would be minimal. There would be no additional exposure to fire risk as a result of infrastructure associated with the Project and would therefore have a less than significant impact on the environment.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

Impact #3.4.20d—Would the Project 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?

See discussion of Impact #3.4.10c(i) related to erosion impacts due to drainage changes. Due to the low risk of fire in the Franklin–Beachwood area, the nature of this Project, and the relatively flat topography of the Project site, downslope or downstream flooding impacts due to runoff, post-fire slope instability, and/or drainage changes would be less than significant with mitigation incorporated.

MITIGATION MEASURE(S)

Implementation of MM HYD-1 and MM HYD-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with incorporated mitigation*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than- Significant Impact	No Impact
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3.4.21 - MANDATORY FINDINGS OF SIGNIFICANCE

a.	Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

Impact #3.4.21a—Does the Project have the potential to 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 evaluated in this IS/MND, the proposed Project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. With mitigation, the proposed Project would not have the potential to

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, 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. Therefore, the Project would have a less-than-significant impact with mitigation incorporated.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM BIO-1 through MM BIO-7.

LEVEL OF SIGNIFICANCE

The Project would have a *less than significant impact with mitigation incorporated*.

Impact #3.4.21b—Does the Project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)?

As described in the impact analyses in Sections 3.14.1 through 3.4.20 of this IS/MND, any potentially significant impacts of the proposed Project would be reduced to a less-than-significant level following incorporation of the mitigation measures listed beginning on Page 2 of this IS/MND. Projects completed in the past have also implemented mitigation as necessary. Accordingly, the proposed Project would not otherwise combine with impacts of related development to add considerably to any cumulative impacts in the region. With mitigation, the proposed Project would not have impacts that are individually limited, but cumulatively considerable. Therefore, the Project would have a less-than-cumulatively-considerable impact with mitigation incorporated.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM BIO-1 through MM BIO-7, MM CUL-1 through MM CUL-2, MM GEO-1 and MM GEO-2, MM HYD-1, and MM HYD-2.

LEVEL OF SIGNIFICANCE

The Project would have a *less than significant impact with mitigation incorporated*.

Impact #3.4.21c—Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

All of the Project’s impacts, both direct and indirect, that are attributable to the Project were identified and mitigated. As shown beginning on Page 2 of this IS/MND, the District has agreed to implement mitigation measures, substantially reducing or eliminating impacts from the Project. Therefore, the proposed Project would not either directly or indirectly cause substantial adverse effects on human beings because all potentially adverse direct

impacts of the proposed Project are identified as having no impact, less-than-significant impact, or less than significant impact with mitigation.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM BIO-1 through MM BIO-7, MM CUL-1 through MM CUL-2, MM GEO-1 and MM GEO-2, MM HYD-1, and MM HYD-2.

LEVEL OF SIGNIFICANCE

The Project would have a *less than significant impact with mitigation incorporated*.

SECTION 4 - LIST OF PREPARERS

4.1 - Lead Agency

Franklin County Water District
2115 Drake Avenue
Merced, CA 95348

4.2 - Consultants - QK

- Desmond Johnston, AICP –Project Manager
- Christopher Mynk, AICP – QA/QC
- Conor McKay – Lead Author
- Amber Williams – Researcher, Author
- Carie Wingert, MS, Senior Environmental Scientist – Technical Author (Biological)
- Jason Ellard, Transportation Engineer, Air Quality – VRPA Technologies, Inc.
- Diana Dyste, MA, RPA, Senior Archaeologist – Applied Earthworks, Inc.

SECTION 5 - BIBLIOGRAPHY

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APPENDIX A
AIR QUALITY IMPACT ANALYSIS/GREENHOUSE GASES ANALYSIS

APPENDIX B
CULTURAL RESOURCES

APPENDIX C
BIOLOGICAL ASSESSMENT REPORT

APPENDIX D

PALEONTOLOGICAL RESOURCE ASSESSMENT

APPENDIX A
AIR QUALITY IMPACT ANALYSIS/GREENHOUSE GASES ANALYSIS

Franklin County Water District Wastewater System Repair Project

Air Quality & Greenhouse Gas Impact Assessment

September 2019

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Executive Summary

This Air Quality & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential air quality impacts that may result from the proposed Franklin County Water District (FCWD) Wastewater System Repair Project, hereinafter called “Project”. The Project seeks to repair existing wastewater system segments that require replacement in order to maintain the level of service for District residents and avoid unsanitary conditions created by possible system infrastructure, and to achieve the level of treatment currently permitted by the State. The Project is located approximately one-mile northwest of the City of Merced, north of California State Highway 99. The District service area is bounded by the El Capitan Canal on the east and Highway 99 on the south. The FCWD is located within Sections 10, 14, 15, 16, 22 and 23, Township 7S, Range 15E, Mount Diablo Base and Meridian.

Merced County is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Merced County is classified as Mediterranean, with moist cool winters and dry warm summers.

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs.

IMPACTS

Short-Term (Construction) Emissions

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NOx pollutants which are harmful to the environment.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously

completed developments surrounding or within the Project area and may require frequent washing during the construction period.

PM10 emissions can result from construction activities of the project. The SJVAPCD requires implementation of effective and comprehensive control measures, rather than a detailed quantification of emissions. The SJVAPCD has determined that compliance with Regulation VIII for all sites and other control measures will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant.

Ozone precursor emissions are also an impact of construction activities and can be quantified through calculations. Numerous variables factored into estimating total construction emission include: level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported onsite or offsite. Additional exhaust emissions would be associated with the transport of workers and materials. Construction emissions from equipment expected to be used during the construction phase of the Project were estimated using the Road Construction Emissions Model and CalEEMod model.

Table E-1 shows the estimated emissions from construction of the Project considering results developed from the Road Construction Emissions Model and CalEEMod model. Results of the analysis show that emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds.

Table E-1
Project Construction Emissions (tons/year)

Summary Report	CO	NO _x	ROG	SO _x	PM ₁₀	PM _{2.5}	CO _{2e}
Project Site Construction Emissions Per Year	3.75	3.67	0.42	0.01	0.31	0.22	691.07
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: Road Construction Emissions Model and CalEEMod Model

✓ Green House Gas Emissions

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO_{2e}/year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas

that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30-years and compared to the 10,000 MTCO₂eq./year criteria. Table E-1 shows GHG emissions associated with the construction phase of the Project. Construction emissions associated with the Project amortized over 30-years equates to 23.04 MTCO₂eq, which is approximately 99.8% less than the threshold identified by the SCAQMD.

Long-Term Emissions

Long-Term emissions from a project are generated primarily by mobile source (vehicle) emissions from a project's site and area sources such as maintenance equipment. It should be noted that the proposed Project will not generate emissions associated with long-term emissions given the nature of the Project. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system. Therefore, operational emissions from the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants.

National Environmental Policy Act (NEPA)

NEPA provides general information on the effects of federally funded projects. The Act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The regulations require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible. As noted in Section 3.2 and 3.3 above, emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system.

According to NEPA Guidance, project's which meet the definition contained in 40 CFR 1508.4 (Categorical Exclusion) do not require any further NEPA approvals by the Federal Highway Administration since they do not individually or cumulatively have a significant effect on the environment. FHWA Guidance indicates that the following projects meet the categorical exclusion requirements. As a result, the proposed Project will not individually or cumulatively have a significant effect on the environment.

- ✓ Infrastructure to support utility systems such as wastewater facilities.
- ✓ Alteration of and additions to existing buildings, facilities, and equipment to conform or

provide conforming use specifically required by new or existing applicable legislation or regulations.

- ✓ Repair, replacement, upgrading, rebuilding, or minor relocation of pipelines within existing rights-of-way, provided that the actions are in accordance with applicable requirements.
- ✓ Construction and subsequent operation of short (generally less than 20 miles in length) pipeline segments conveying materials between existing source facilities and existing receiving facilities, provided that the pipeline segments are within previously disturbed or developed rights-of-way.

CEQA ENVIRONMENTAL CHECKLIST

1. Air Quality

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. The significance criteria established by the SJVAPCD is relied upon to make the following determinations. Would the project:

- ✓ Conflict with or obstruct implementation of the applicable air quality plan?

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the FCWD Community and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans.

- ✓ 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 Merced County area is nonattainment for Federal and State air quality standards for ozone and nonattainment for Federal and State standards for PM_{2.5}. Merced County is also nonattainment for State standards for PM₁₀. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM₁₀ Maintenance Plan, and 2012 PM_{2.5} Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Individual projects contribute cumulatively to a regions nonattainment status and inconsistency with any of the plans would be considered a cumulatively adverse air quality impact.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

Air Quality Plan

The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. The AQP details the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the FCWD Community and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. As a result, the Project will not conflict with or obstruct implementation of any air quality plans.

Ozone/Particulate Matter

As discussed above, Project emissions would not exceed the project-level significance thresholds for ozone precursors ROG and NOx or PM10 and PM2.5 during construction and operation. The SJVAPCD considers projects that exceed the project-level thresholds of significance as cumulatively significant. The Project's emissions would not combine with other sources in the SJVAB to make a cumulatively considerable contribution to a violation of the ozone standards. Therefore, this impact is less than significant. As such, there would not be a significant contribution to health effects from ozone and particulate matter.

Based on the assessment above, the Project will not 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors) and any impacts would be less than significant.

- ✓ Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

The first step in evaluating the potential for impacts to sensitive receptors for TAC's from the Project is to perform a screening level analysis. For Type A Projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. Since, the Project does not correspond with the characteristics of the source categories included in Table 4, a health risk assessment is not needed at this time. Therefore, the Project will not expose sensitive receptors to substantial pollutant concentrations and any impacts would be less than significant.

- ✓ Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. The Project corresponds with specific characteristics (projects) identified in Table 5. The Project seeks to repair and improve existing wastewater system segments that require replacement in order to maintain the level of service for District residents and avoid unsanitary conditions created by possible system infrastructure, and to achieve the level of treatment currently permitted by the State. The Project does not consist of the siting of 'new' wastewater treatment facilities, but rather the improvement of an existing facility and facility components. As a result, the Project will not result in other emissions adversely affecting a substantial number of people.

2. Greenhouse Gas Emissions

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. The significance criteria established by the SJVAPCD is relied upon to make the following determinations. Would the project:

- ✓ Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG

thresholds may be used to determine impacts. On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO₂eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30-years and compared to the 10,000 MTCO₂eq./year criteria. Table E-1 shows GHG emissions associated with the construction phase of the Project. Construction emissions associated with the Project amortized over 30-years equates to 23.04 MTCO₂eq, which is approximately 99.8% less than the threshold identified by the SCAQMD.

CARB's California GHG Emissions Inventory provides estimates of anthropogenic GHG emissions within California, as well as emissions associated with imported electricity; natural sources are not included in the inventory. California's GHG emissions for 2015 totaled approximately 440,400,000 MTCO₂eq. The proposed Project's GHG emissions represents 0.00000005% of the total GHG emissions for the state of California when compared to year 2015 emissions data.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. It should be noted that the Project will not generate emissions associated with long-term emissions given the nature of the Project. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system. Therefore, the Project's greenhouse emissions are not cumulatively considerable.

- ✓ Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012.

The proposed Project is consistent with the currently adopted General Plan for Merced County and the adopted 2014 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project are approximately 99.8% less than the threshold identified by the SCAQMD (see the discussion for Impact 4.2.1 above).

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project further the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

1.0 Introduction

1.1 Description of the Region/Project

This Air Quality & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential air quality impacts that may result from the proposed Franklin County Water District (FCWD) Wastewater System Repair Project, hereinafter called “Project”. The Project seeks to repair existing wastewater system segments that require replacement in order to maintain the level of service for District residents and avoid unsanitary conditions created by possible system infrastructure, and to achieve the level of treatment currently permitted by the State. The Project is located approximately one-mile northwest of the City of Merced, north of California State Highway 99. The District service area is bounded by the El Capitan Canal on the east and Highway 99 on the south. The FCWD is located within Sections 10, 14, 15, 16, 22 and 23, Township 7S, Range 15E, Mount Diablo Base and Meridian.

The Project site consists of approximately 22,000 linear feet of sewer mains throughout the FCWD area and approximately 67 acres of existing and future wastewater treatment facilities located on the southeast boundary of the FCWD. The District’s service area covers approximately 1.36 square miles, which includes the Community of Franklin-Beachwood and land outside the community. The Project lies within the central portion of the San Joaquin Valley in Merced County. Figures 1 and 2 show the location of the Project along with major roadways and highways.

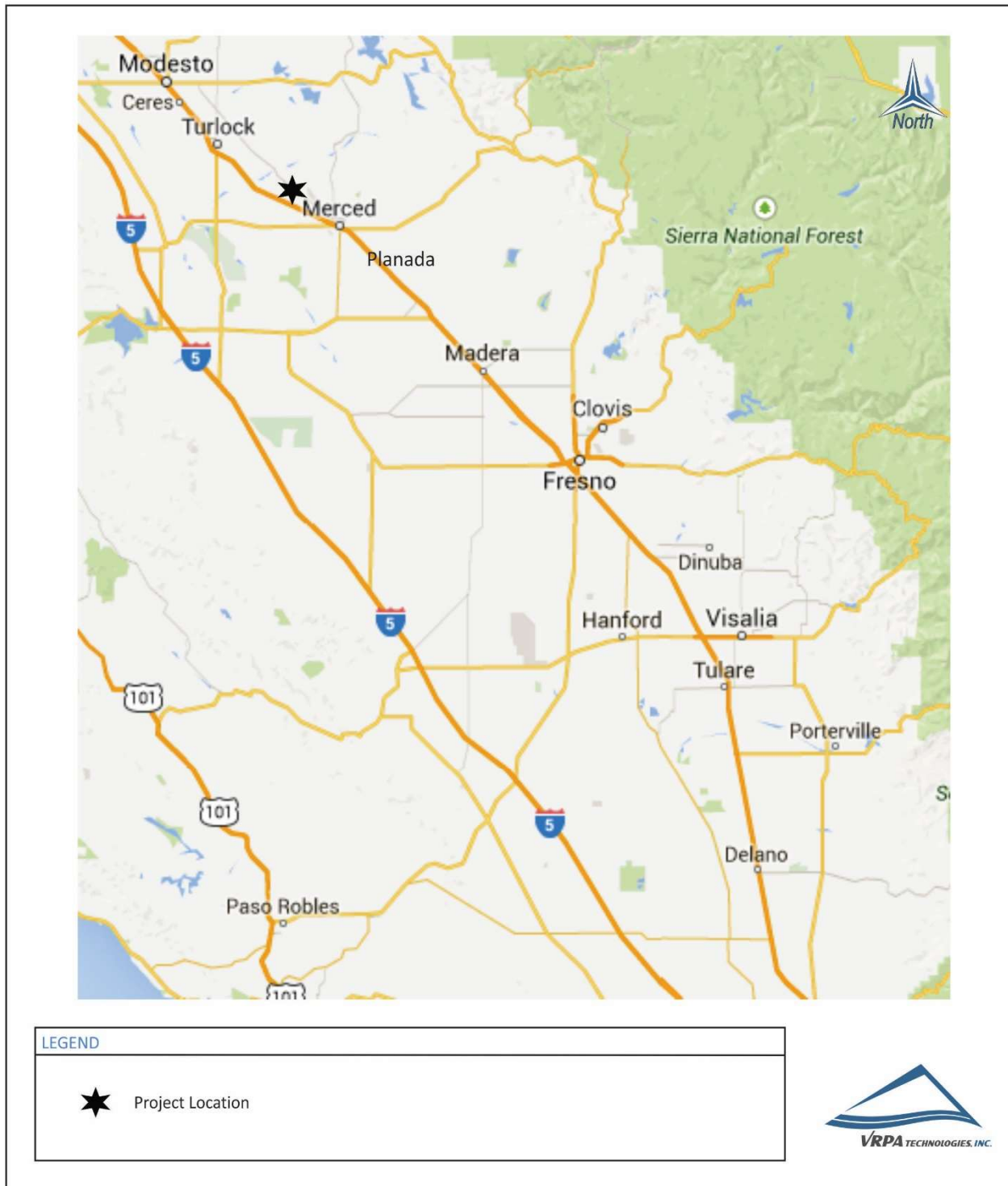
Merced County is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Merced County is classified as Mediterranean, with moist cool winters and dry warm summers.

1.1.1 Project Need

The FCWD owns and operates the existing Wastewater Treatment Facility (WWTF) under Waste Discharge Requirements (WDRs) Order No.89-171. The WWTF is located east of El Capitan Canal, just north of the confluence with Black Rascal Creek, which is tributary to the San Joaquin River. The WWTF consists of a duplex pump lift station, a circular aeration treatment pond, and twelve evaporation/percolation ponds for effluent disposal. The disposal capacity of the effluent ponds is limited to approximately 0.4 MGD which is less than the plant’s treatment capacity, which is permitted to 0.6 MGD.

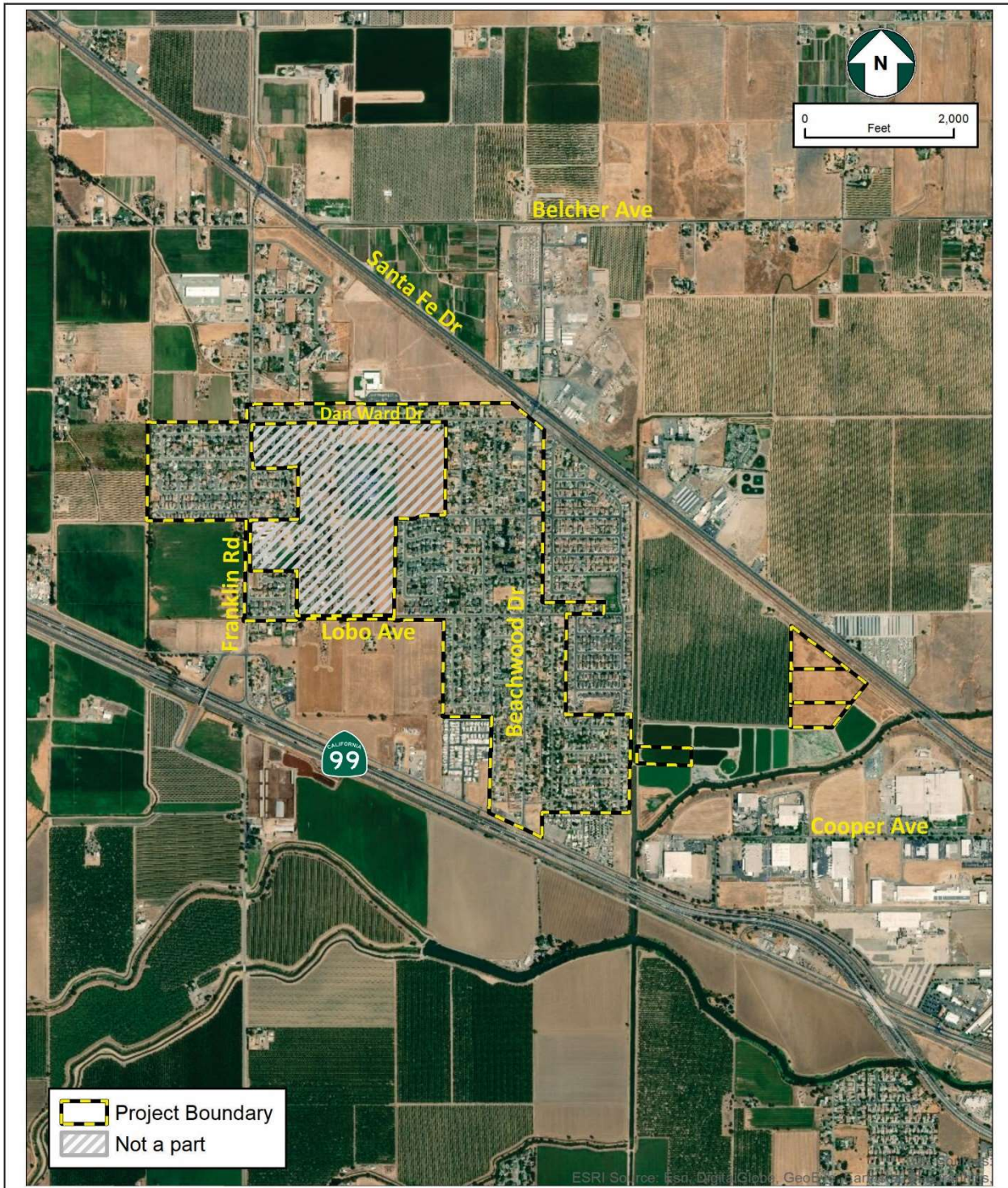
Franklin County Water District Wastewater System Repair Project
Regional Location

Figure
1



Franklin County Water District Wastewater System Repair Project
Franklin County Water District

Figure
2



1.2 Regulatory

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Merced County are discussed below along with their individual responsibilities.

1.2.1 Federal Agencies

✓ U.S. Environmental Protection Agency (EPA)

The Federal Clean Air Bill first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other CAA Bill Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments.

The CAA and the national ambient air quality standards identify levels of air quality for six “criteria” pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). However, because the State Implementation Plan (SIP) for particulate matter 10 microns or less in diameter (PM₁₀), particulate matter 2.5 microns or less in diameter (PM_{2.5}), and Ozone address attainment of both the State and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is provided on the pages following this federal conformity discussion.

The EPA approved San Joaquin Valley reclassification of the ozone (8-hour) designation to extreme nonattainment in the Federal Register on May 5, 2010, even though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard. In accordance with the CAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the

nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. In the Federal Register on October 26, 2015, the EPA revised the primary and secondary standard to 0.070 parts per million (ppm) to provide increased public health protection against health effects associated with long- and short-term exposures. The previous ozone standard was set in 2010 at 0.075 ppm.

Merced County is located in a nonattainment area for the 8-hour ozone standard, 1997, 2006 and 2012 PM_{2.5} standards, and has a maintenance plan for PM₁₀ standard.

1.2.2 Federal Regulations

✓ National Environmental Policy Act (NEPA)

NEPA provides general information on the effects of federally funded projects. The Act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

✓ State Implementation Plan (SIP)/ Air Quality Management Plans (AQMPs)

To ensure compliance with the NAAQS, EPA requires states to adopt SIP aimed at improving air quality in areas of nonattainment or a Maintenance Plan aimed at maintaining air quality in areas that have attained a given standard. New and previously submitted plans, programs, district rules, state regulations, and federal controls are included in the SIPs. Amendments made in 1990 to the federal CAA established deadlines for attainment based on an area's current air pollution levels. States must enact additional regulatory programs for nonattainment's areas in order to adhere with the CAA Section 172. In California, the SIPs must adhere to both the NAAQS and the California Ambient Air Quality Standards (CAAQS).

To ensure that State and federal air quality regulations are being met, Air Quality Management Plans (AQMPs) are required. AQMPs present scientific information and use analytical tools to identify a pathway towards attainment of NAAQS and CAAQS. The San Joaquin Valley Air Pollution Control District (SJVAPCD) develops the AQMPs for the region where the Merced County Association of Governments (MCAG) operates. The regional air districts begin the SIP process by submitting their AQMPs to the California Air Resources Board (CARB). CARB is responsible for revising the SIP and submitting it to EPA for approval. EPA then acts on the SIP in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations Title 40, Chapter 1, Part 52, Subpart 7, Section 52.220.

1.2.3 State Agencies

✓ California Air Resources Board (CARB)

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation called the CCAA, adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the EPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management District's (AQMDs) and approved by CARB.

States may establish their own standards, provided the State standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to California Health and Safety Code (CH&SC) [§39606(b)] and its predecessor statutes.

The CH&SC [§39608] requires CARB to “identify” and “classify” each air basin in the State on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs. Designations and classifications specific to the San Joaquin Valley Air Basin (SJVAB) can be found in the next section of this document. Areas in the State were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA mandates.

Other CARB duties include monitoring air quality. CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations (called the State and Local Air Monitoring [SLAMS] network), which monitor the present pollutant levels in the ambient air.

Merced County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3. In addition to Merced County, the SJVAB includes Fresno, Kern, Kings, Madera, San Joaquin, Stanislaus, and Tulare Counties. Federal and State standards for criteria pollutants are provided in Table 1.

1.2.4 State Regulations

✓ CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARB's motor vehicle standards specify the allowable grams of pollutant per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved.

✓ California Clean Air Act

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the Federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the CH&SC [§39606(b)], which are similar to the federal standards. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to accomplish a five percent (5%) annual reduction in emissions documenting progress toward the State ambient air quality standards.

✓ Tanner Air Toxics Act

California regulates Toxic Air Contaminants (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of Hazardous Air Pollutants (HAPs) as TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

Franklin County Water District Wastewater System Repair Project
San Joaquin Valley Air Basin

Figure
3

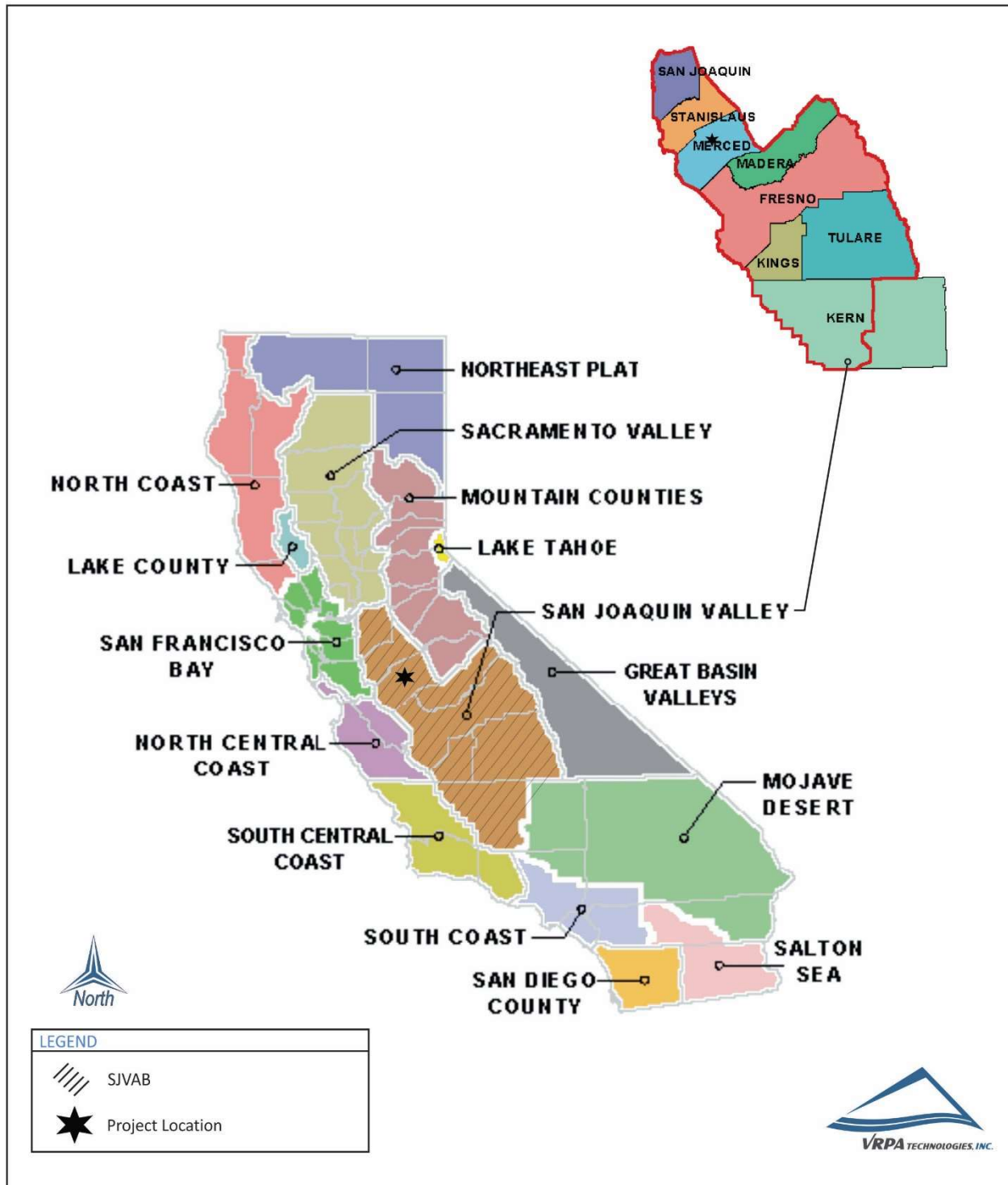


Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	--	Same as	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)	Primary Standard	
Respirable Particulate Matter (PM10) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		--		
Fine Particulate Matter (PM2.5) ⁹	24 Hour	--	--	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		--	--	
Nitrogen Dioxide (NO ₂) ¹⁰	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹¹	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m ³)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for cetain areas) ¹¹	--	
	Annual Arithmetic Mean	--		0.030 ppm (for cetain areas) ¹¹	--	
Lead ^{12,13}	30 Day Average	1.5 µg/m ³	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m ³ (for certain areas) ¹¹	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m ³		
Visibility Reducing Particles ¹⁴	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (25 µg/m ³)	Gas Chromatography			

See footnotes on next page ...

Footnotes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
 2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
 3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
 4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
 5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
 6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
 7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
 8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
 9. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
 10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
 11. On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
- Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
 13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
 14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

These rules and standards provide for:

- More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
- Zero-emission bus demonstration and purchase requirements applicable to transit agencies
- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

✓ **California Environmental Quality Act (CEQA)**

CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc.).

✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions

to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

✓ **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Merced County Association of Governments (MCAG) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

✓ **Executive Order B-30-15**

Executive Order B-30-15, which was signed by Governor Brown in 2016, establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

1.2.5 Regional Agencies

✓ San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Merced County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the 2016 (8-hour) and 2013 (1-hour) Ozone Plans to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The 2016 and 2013 Ozone Plan provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The 2016 and 2013 Ozone Plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The 2013 Ozone Plan calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions. The 2013 Ozone Plan also addresses the remaining requirement under the 1979 revoked 1-hour ozone NAAQS.

The SJVAPCD has also prepared the *2007 PM₁₀ Maintenance Plan and Request for Redesignation* (2007 PM₁₀ Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM₁₀ Attainment for the Basin to the CARB. The CARB concurred with the request and submitted the request to the EPA on May 8, 2006. On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the NAAQS for PM₁₀. However, the EPA noted that the Final Rule did not constitute a redesignation to attainment until all of the FCAA requirements under Section 107(d)(3) were met.

The SJVAPCD has prepared the *2012 PM_{2.5} Plan* to achieve Federal and State standards for improved air quality in the SJVAB. The *2012 PM_{2.5} Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce PM_{2.5}.

In addition to the 2016 and 2013 *Ozone Plan*, the 2012 *PM_{2.5} Plan*, and the 2007 *PM₁₀ Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI), dated March 19, 2015.

The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

The SJVAPCD Plans identified above represent that SJVAPCD's plan to achieve both state and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories.

1.2.6 Regional Regulations

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to the Project.

✓ Regulation VIII – Fugitive PM₁₀ Prohibitions

Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM₁₀ emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc. The proposed Project will be required to comply with this regulation. Regulation VIII control measures are provided below:

1. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.*
2. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
3. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.*
4. *When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.*

5. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
6. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
7. *Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.*

✓ **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities**

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

✓ **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations**

If asphalt paving will be used, then paving operations of the proposed project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

✓ **Rule 9510 – Indirect Source Review (ISR)**

The purpose of this rule is to fulfill the District’s emission reduction commitments in the PM10 and Ozone Attainment Plans, achieve emission reductions from construction activities, and to provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures.

1.2.7 Local Plans

✓ **Merced County General Plan**

California State Law requires every city and county to adopt a comprehensive General Plan to guide its future development. The General Plan essentially serves as a “constitution for development” — the document that serves as the foundation for all land use decisions. The 2030 Merced County General Plan includes various elements, including air quality and greenhouse gases, that address local concerns and provides goals and policies to achieve its development goals.

2.0 Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Merced County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter. Air quality can be directly affected by the type and density of land use change and population growth in urban and rural areas.

2.1 Geographical Location

The SJVAB is comprised of eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

2.2 Topographic Conditions

Merced County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided in paragraph below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

2.3 Climatic Conditions

Merced County is located in one of the most polluted air basins in the country. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Merced County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a “regional” pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Merced County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble, so precipitation and fog tends to “reduce” CO concentrations in the atmosphere. PM10 is somewhat “washed” from the atmosphere with precipitation. Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast. In the winter, this high- pressure system moves southward, allowing Pacific storms to move through the San Joaquin Valley. These storms bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the valley floor, however, there is some down slope flow from the Coast Ranges and the resultant evaporation of moisture from associated warming results in a minimum of precipitation. Nevertheless, the majority of the precipitation falling in the San Joaquin Valley is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. It is usually associated with an influx of moisture into the San Joaquin Valley through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere. Although the hourly rates of precipitation from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the San Joaquin Valley floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year, Fresno in the center, receives about 10 inches per year, and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the state while the southern part of the state remains protected by the Pacific High. Precipitation in the San Joaquin Valley Air Basin (SJVAB) is confined primarily to the winter months with some also occurring in late summer and fall. Average annual rainfall for the entire San Joaquin Valley is approximately 5 to 16 inches. Snowstorms, hailstorms, and ice storms occur infrequently in the San Joaquin Valley and severe occurrences of any of these are very rare.

The winds and unstable air conditions experienced during the passage of storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong

low-level temperature inversions and very stable air conditions. This situation leads to the San Joaquin Valley's famous Tule Fogs. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM₁₀. Ozone levels are low during these periods because of the lack of sunlight to drive the photochemical reaction. Maximum CO concentrations tend to occur on clear, cold nights when a strong surface inversion is present and large numbers of fireplaces are in use. A secondary peak in CO concentrations occurs during morning commute hours when a large number of motorists are on the road and the surface inversion has not yet broken.

The water droplets in fog, however, can act as a sink for CO and nitrogen oxides (NO_x), lowering pollutant concentrations. At the same time, fog could help in the formation of secondary particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor of winter season violations of the PM₁₀ and PM_{2.5} standards.

2.4 Anthropogenic (Man-made) Sources

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by anthropogenic or man-made sources. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, agriculture, and other socioeconomic activities. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contributed 34 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 20 percent in 2012 according to emission projections from the CARB. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NO_x) and Reactive Organic Gases (ROG). Mobile sources contribute 86 percent of all NO_x emitted from anthropogenic sources in 2015 based on data provided in Appendix B of the Air District's 2016 Ozone Plan. In addition, mobile sources contribute 26 percent of all the ROG emitted from

sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Merced County are:

1. The sink effect, climatic subsidence and temperature inversions and low wind speeds
2. Automobile and truck travel
3. Increases in mobile and stationary pollutants generated by local urban growth

Automobiles, trucks, buses and other vehicles using hydrocarbon (HC) fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Merced County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Merced County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of PM₁₀ emissions in the San Joaquin Valley are farming activities (22%) and road dust, both paved and unpaved (35%) in 2020 according to emission projections from the CARB. Fugitive windblown dust from “open” fields contributed 14 percent of the PM₁₀.

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). In addition to these primary sources of air pollution, urban areas upwind from Merced County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Merced County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

2.4.1 Motor Vehicles

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

2.4.2 Agricultural and Other Miscellaneous Activities

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters, animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Merced County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities.

2.4.3 Industrial Plants

Industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Merced County consist of agricultural production and processing operations, wine production, and marketing operations.

2.5 San Joaquin Valley Air Basin Monitoring

SJVAPCD and the CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM_{2.5}, and PM₁₀. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. The closest monitoring station to the Project is located at Merced's Coffee Street Monitoring Station. The stations monitor particulates, ozone, carbon monoxide, and nitrogen dioxide. Monitoring data for the most recent three years on record is summarized in Table 2.

Table 3 identifies the Merced County's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM. In accordance with the FCAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The FCAA contains provisions for changing the classifications using factors such as clean air progress rates and requests from states to move areas to a higher classification.

On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550). The (federal) 1-hour ozone standard was revoked on June 6, 2005. However, many of the requirements in the 1-hour attainment plan (SIP) continue to apply to the SJVAB. The current ozone plan is the (federal) 8-hour ozone plan adopted in 2007. The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme" effective June 4, 2010.

Table 2
Maximum Pollutant Levels at Merced's
Coffee Street Monitoring Station

Pollutant	Time Averaging	2016	2017	2018	Standards	
		Maximums	Maximums	Maximums	National	State
Ozone (O ₃)	1 hour	0.097 ppm	0.093 ppm	0.104 ppm	-	0.09 ppm
Ozone (O ₃)	8 hour	0.086 ppm	0.084 ppm	0.083 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO ₂)	1 hour	35.4 ppb	38.9 ppb	45.8 ppb	100 ppb	0.18 ppm
Nitrogen Dioxide (NO ₂)	Annual Average	6.0 ppb	7.0 ppb	7.0 ppb	0.053 ppm	0.030 ppm
Particulates (PM ₁₀)	24 hour	*	*	*	150 µg/m ³	50 µg/m ³
Particulates (PM ₁₀)	Federal Annual Arithmetic Mean	*	*	*	-	20 µg/m ³
Particulates (PM _{2.5})	24 hour	43.0 µg/m ³	69.3 µg/m ³	88.2 µg/m ³	35 µg/m ³	-
Particulates (PM _{2.5})	Federal Annual Arithmetic Mean	11.9 µg/m ³	13.2 µg/m ³	15.1 µg/m ³	12 µg/m ³	12 µg/m ³

Source: California Air Resources Board (ADAM) Air Pollution Summaries

* Means there was insufficient data available to determine the value.

Table 3
Merced County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - 1 Hour	Revoked in 2005	Nonattainment/Severe
Ozone - 8 Hour	Nonattainment/Extreme ^a	No State Standard
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Unclassified
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: ARB Website, 2019

a. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

2.6 Air Quality Standards

The FCAA, first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 568), which set forth a program for achieving more stringent California Ambient Air Quality Standards. The CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the FCAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM10 Air Quality Standards is not currently required.

The EPA uses six "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called the NAAQS.

The SJVAPCD operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which State or federal agencies have established ambient air quality standards. Descriptions of nine pollutants of importance in Merced County follow.

2.6.1 Ozone (1-hour and 8-hour)

The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NO_x, and sunlight. ROG and NO_x are emitted from various sources throughout Merced County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NO_x and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

- ***Health Effects***

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and

they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The CARB found ozone standards in Merced County nonattainment of Federal and State standards.

2.6.2 *Suspended PM (PM10 and PM2.5)*

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM10 refers to particles less than or equal to 10 microns in aerodynamic diameter. PM2.5 refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM10. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM10 in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM10 and PM2.5 can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM10 and PM2.5. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO₂) and NO_x in the atmosphere to create sulfates (SO₄) and nitrates (NO₃). Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The District's 2008 PM2.5 Plan built upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS

for PM_{2.5}. The District's 2012 PM_{2.5} Plan provides multiple control strategies to reduce emissions of PM_{2.5} and other pollutants that form PM_{2.5}. The plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

- **Health Effects**

PM₁₀ and PM_{2.5} particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM₁₀ and PM_{2.5} can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM₁₀. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM₁₀ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM₁₀ can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The CARB found PM₁₀ standards in Merced County in attainment of Federal standards and nonattainment for State standards. The CARB found PM_{2.5} standards in Merced County nonattainment of Federal and State standards.

2.6.3 Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience

high levels of CO.

- **Health Effects**

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The CARB found CO standards in Merced County as unclassified/attainment of Federal standards and unclassified for State standards.

2.6.4 Nitrogen Dioxide (NO₂)

Nitrogen oxides (NO_x) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

- **Health Effects**

NO_x is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide

(NO₂) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO₂ may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility. NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO₂ is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO₂ include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO₂, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO₂ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The CARB found NO₂ standards in Merced County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.5 Sulfur Dioxide (SO₂)

The major source of sulfur dioxide (SO₂) is the combustion of high-sulfur fuels for electricity

generation, petroleum refining and shipping. High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO₂ levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO₂, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO₂ also is a major precursor to PM_{2.5}, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The CARB found SO₂ standards in the Merced County as unclassified/attainment for Federal standards and attainment for State standards.

2.6.6 Lead (Pb)

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The CARB found Lead standards in Merced County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.7 Toxic Air Contaminants (TAC)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TAC are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TAC is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TAC are regulated on the basis of risk rather than specification of safe levels of contamination. The ten

TAC are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Caltrans' guidance for transportation studies references the Federal Highway Administration (FHWA) memorandum titled "Interim Guidance on Air Toxic Analysis in NEPA Documents" which discusses emissions quantification of six "priority" compounds of 21 Mobile Source Air Toxics (MSAT) identified by the United States Environmental Protection Agency (USEPA). The six-diesel exhaust (particulate matter and organic gases), benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein.

Some studies indicate that diesel PM poses the greatest health risk among the TAC listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to diesel PM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

Diesel PM differs from other TAC in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TAC, however, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a diesel PM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. Table 4 depicts the CARB Handbook's recommended buffer distances associated with various types of common sources.

Existing air quality concerns within Merced County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

TABLE 4
Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads ¹	- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	- Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	- Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	- Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	- Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

1: The recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook indicating that new research has demonstrated promising strategies to reduce pollution exposure along transportation corridors.

***Notes:**

- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

Source: SJVAPCD 2019

2.6.8 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.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 along with a reasonable distance from the source within which, the degree of odors could possibly be significant. Information presented in Table 5 will be used as a screening level of analysis for potential odor sources for the proposed project.

TABLE 5
Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: SJVAPCD 2019

2.6.9 Naturally Occurring Asbestos (NOA)

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Asbestos is commonly found in ultramafic rock and near fault zones. The amount of asbestos that is typically present in these rocks ranges from less than 1% up to approximately 25% and sometimes more. It is released from ultramafic rock when it is broken or crushed. This can happen when cars drive over unpaved roads or driveways, which are surfaced with these rocks, when land is graded for building purposes, or at quarrying operations. Asbestos is also released naturally through weathering and erosion. Once released from the rock, asbestos can become airborne and may stay in the air for long periods of time. Asbestos is hazardous and can cause lung disease and cancer dependent upon the level of exposure. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem.

The Project's construction phase may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021.

2.6.10 Greenhouse Gas Emissions

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural

processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are:

- **Carbon Dioxide (CO₂):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement, asphalt paving, truck trips). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH₄):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N₂O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions.

3.0 Air-Quality Impacts

3.1 Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Merced County region. The SJVAPCD has established thresholds of significance for determining environmental significance. These thresholds separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project, which are recognized to be short in duration. The long-term emissions are primarily related to activities that occur as a result of Project operations. The Project will not generate any long-term emissions given the nature of the Project. Impacts will be evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction emissions of criteria pollutants. The SJVAPCD has established thresholds for certain pollutants shown in Table 6.

Table 6
SJVAPCD Air Quality Thresholds of Significance

Project Type	Ozone Precursor Emissions (tons/year)					
	CO	NO _x	ROG	SO _x	PM ₁₀	PM _{2.5}
Construction Emissions	100	10	10	27	15	15
Operational Emissions (Permitted Equipment and Activities)	100	10	10	27	15	15
Operational Emissions (Non-Permitted Equipment and Activities)	100	10	10	27	15	15

Source: SJVAPCD 2019

3.1.1 Road Construction Emissions Model

The Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, (commonly called "SacMetro") Version 8.1.0 calculates a linear-type project's emissions (such as a pipeline or roadway) by project phase over the entire construction period. The model can be used to estimate vehicle exhaust and fugitive dust emissions.

The model is an accurate and comprehensive tool for quantifying air quality impacts from pipeline and roadway projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA and NEPA documents, pre-project planning, compliance with local air quality rules and regulations, etc.

3.1.2 CalEEMod

CalEEMod is a statewide land use emissions computer model designed to provide a uniform

platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA and NEPA documents, pre-project planning, compliance with local air quality rules and regulations, etc.

3.2 Short-Term Impacts

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NO_x pollutants which are harmful to the environment.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period.

PM₁₀ emissions can result from construction activities of the project. The SJVAPCD requires implementation of effective and comprehensive control measures, rather than a detailed quantification of emissions. The SJVAPCD has determined that compliance with Regulation VIII for all sites and other control measures will constitute sufficient mitigation to reduce PM₁₀ impacts to a level considered less-than significant.

Ozone precursor emissions are also an impact of construction activities and can be quantified through calculations. Numerous variables factored into estimating total construction emission include: level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported onsite or offsite. Additional exhaust emissions would be associated with the transport of workers and materials. Construction emissions from equipment expected to be used during the construction phase of the Project were estimated using the Road Construction Emissions Model and CalEEMod model.

Table 7 shows the estimated emissions from construction of the Project considering results developed from the Road Construction Emissions Model and CalEEMod model. Emissions associated with the repair of the sewer mains throughout the FCWD area were developed using the Road Construction Emissions Model. Emissions associated with the wastewater treatment plant improvements were developed using the CalEEMod model considering information provided in the Project description. Results of the analysis show that emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds.

Table 7
Project Construction Emissions (tons/year)

Summary Report	CO	NO _x	ROG	SO _x	PM ₁₀	PM _{2.5}	CO ₂ e
Project Site Construction Emissions Per Year	3.75	3.67	0.42	0.01	0.31	0.22	691.07
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: Road Construction Emissions Model and CalEEMod Model

3.2.1 Greenhouse Gas Emissions

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the MCAG region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCAG's 2014 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was adopted in 2016, projects that the Merced County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

- i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than

- significant individual and cumulative impact for GHG emissions;
- ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
- iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO₂eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30-years and compared to the 10,000 MTCO₂eq./year criteria. Table 7 shows GHG emissions associated with the construction phase of the Project. Construction emissions associated with the Project amortized over 30-years equates to 23.04 MTCO₂eq, which is approximately 99.8% less than the threshold identified by the SCAQMD.

3.3 Long-Term Emissions

Long-Term emissions from a project are generated primarily by mobile source (vehicle) emissions from a project's site and area sources such as maintenance equipment. It should be noted that the Project will not generate emissions associated with long-term emissions given the nature of the Project. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system. Therefore, operational emissions from the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants.

3.4 National Environmental Policy Act (NEPA)

NEPA provides general information on the effects of federally funded projects. The Act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The regulations require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible. As

noted in Section 3.2 and 3.3 above, emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system.

According to NEPA Guidance, project's which meet the definition contained in 40 CFR 1508.4 (Categorical Exclusion) do not require any further NEPA approvals by the Federal Highway Administration since they do not individually or cumulatively have a significant effect on the environment. FHWA Guidance indicates that the following projects meet the categorical exclusion requirements. As a result, the proposed Project will not individually or cumulatively have a significant effect on the environment.

- ✓ Infrastructure to support utility systems such as wastewater facilities.
- ✓ Alteration of and additions to existing buildings, facilities, and equipment to conform or provide conforming use specifically required by new or existing applicable legislation or regulations.
- ✓ Repair, replacement, upgrading, rebuilding, or minor relocation of pipelines within existing rights-of-way, provided that the actions are in accordance with applicable requirements.
- ✓ Construction and subsequent operation of short (generally less than 20 miles in length) pipeline segments conveying materials between existing source facilities and existing receiving facilities, provided that the pipeline segments are within previously disturbed or developed rights-of-way.

4.0 Impact Determinations and Recommended Mitigation

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in significant adverse impacts on the environment. The criteria used to determine the significance of an air quality or greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, air quality or greenhouse gas impacts resulting from the Project are considered significant if the Project would result in:

Air Quality

- a) Conflict with or obstruct implementation of the applicable air quality plan?
- 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?
- c) Expose sensitive receptors to substantial pollutant concentrations?
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Greenhouse Gas Emissions

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.1 Air Quality

4.1.1 *Conflict with or obstruct implementation of the applicable air quality plan*

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses

from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the FCWD Community and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans.

4.1.2 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 Merced County area is nonattainment for Federal and State air quality standards for ozone and nonattainment for Federal and State standards for PM_{2.5}. Merced County is also nonattainment for State standards for PM₁₀. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM₁₀ Maintenance Plan, and 2012 PM_{2.5} Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Individual projects contribute cumulatively to a regions nonattainment status and inconsistency with any of the plans would be considered a cumulatively adverse air quality impact.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

Per CEQA Guidelines §15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.¹

Air Quality Plan

As noted above, the SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM₁₀ Maintenance Plan, and 2012 PM_{2.5} Plan to achieve Federal and State standards for improved air

¹ San Joaquin Valley Unified Air Pollution Control District – Guide for Assessing and Mitigating Air Quality Impacts, March 19, 2015.

quality in the SJVAB regarding ozone and PM. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. The AQP details the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012. The Project is consistent with the currently adopted General Plan for the FCWD Community and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. As a result, the Project will not conflict with or obstruct implementation of any air quality plans.

Ozone/Particulate Matter

As discussed above in Section 4.1.2, Project emissions would not exceed the project-level significance thresholds for ozone precursors ROG and NO_x or PM₁₀ and PM_{2.5} during construction and operation. The SJVAPCD considers projects that exceed the project-level thresholds of significance as cumulatively significant. The Project's emissions would not combine with other sources in the SJVAB to make a cumulatively considerable contribution to a violation of the ozone standards. Therefore, this impact is less than significant. As such, there would not be a significant contribution to health effects from ozone and particulate matter.

Based on the assessment above, the Project will not 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors) and any impacts would be less than significant.

4.1.3 *Expose sensitive receptors to substantial pollutant concentrations*

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

The first step in evaluating the potential for impacts to sensitive receptors for TAC's from the Project is to perform a screening level analysis. For Type A Projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. Since, the Project does not correspond with the characteristics of the source categories included in Table 4, a health risk assessment is not needed at this time. Therefore, the Project will not expose sensitive receptors to substantial pollutant concentrations and any impacts would be less than significant.

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

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- ✓ Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and
- ✓ Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. The Project corresponds with specific characteristics (projects) identified in Table 5. The Project seeks to repair and improve existing wastewater system segments that require replacement in order to maintain the level of service for District residents and avoid unsanitary conditions created by possible system infrastructure, and to achieve the level of treatment currently permitted by the State. The Project does not consist of the siting of 'new' wastewater treatment facilities, but rather the improvement of an existing facility and facility components. As a result, the Project will not result in other emissions adversely affecting a substantial number of people.

4.2 Greenhouse Gas Emissions

4.2.1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG thresholds may be used to determine impacts. On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO₂eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015). Therefore, because this threshold has been established by the SCAQMD in an effort to control GHG emissions in the largest metropolitan area in the State of California, this threshold is considered a conservative approach for evaluating the significance of GHG emissions in a more rural area, such as Merced County. Though the

Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. The Project will not generate operational emissions as noted above. However, in accordance with SCAQMD guidance, the Project's construction emissions were amortized over 30-years and compared to the 10,000 MTCO₂eq./year criteria. Table 7 shows GHG emissions associated with the construction phase of the Project. Construction emissions associated with the Project amortized over 30-years equates to 23.04 MTCO₂eq, which is approximately 99.8% less than the threshold identified by the SCAQMD.

CARB's California GHG Emissions Inventory provides estimates of anthropogenic GHG emissions within California, as well as emissions associated with imported electricity; natural sources are not included in the inventory. California's GHG emissions for 2015 totaled approximately 440,400,000 MTCO₂eq. The proposed Project's GHG emissions represents 0.00000005% of the total GHG emissions for the state of California when compared to year 2015 emissions data.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. It should be noted that the Project will not generate emissions associated with long-term emissions given the nature of the Project. All operations associated with the Project will cease upon completion of the repairs (construction) associated with the FCWD wastewater collection system. Therefore, the Project's greenhouse emissions are not cumulatively considerable.

4.2.2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

As noted previously, California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the MCAG region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. MCAG's 2014 RTP/SCS, which was adopted in 2016, projects that the Merced County region would achieve the prescribed emissions targets.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas

emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. MCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the Merced County 2030 General Plan, which was adopted in 2012.

The proposed Project is consistent with the currently adopted General Plan for Merced County and the adopted 2014 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project are approximately 99.8% less than the threshold identified by the SCAQMD (see the discussion for Impact 4.2.1 above).

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project further the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

APPENDIX A

Road Construction Emissions Model Worksheets

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Franklin County Water District Repair Project														Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust				
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)									
Grubbing/Land Clearing	0.74	9.66	5.53	0.98	0.48	0.50	0.46	0.36	0.10	0.02	2,177.98	0.27	0.03	2,193.03									
Grading/Excavation	2.75	26.29	24.29	1.81	1.31	0.50	1.25	1.15	0.10	0.05	4,969.06	0.84	0.05	5,005.30									
Drainage/Utilities/Sub-Grade	2.03	17.76	15.79	1.46	0.96	0.50	0.93	0.83	0.10	0.04	3,726.23	0.45	0.04	3,749.27									
Paving	1.41	16.65	11.80	0.78	0.78	0.00	0.63	0.63	0.00	0.03	3,269.96	0.59	0.04	3,295.91									
Maximum (pounds/day)	2.75	26.29	24.29	1.81	1.31	0.50	1.25	1.15	0.10	0.05	4,969.06	0.84	0.05	5,005.30									
Total (tons/construction project)	0.28	2.67	2.32	0.19	0.14	0.06	0.13	0.12	0.01	0.01	528.01	0.08	0.01	531.70									
Notes: Project Start Year -> 2021																							
Project Length (months) -> 12																							
Total Project Area (acres) -> 5																							
Maximum Area Disturbed/Day (acres) -> 0																							
Water Truck Used? -> Yes																							
Total Material Imported/Exported Volume (yd³/day)																							
Daily VMT (miles/day)																							
Phase Soil Asphalt Soil Hauling Asphalt Hauling Worker Commute Water Truck																							
Grubbing/Land Clearing 0 0 0 0 1,600 40																							
Grading/Excavation 0 0 0 0 1,600 40																							
Drainage/Utilities/Sub-Grade 0 0 0 0 1,600 40																							
Paving 0 0 0 0 1,600 40																							
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.																							
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.																							
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.																							
Total Emission Estimates by Phase for -> Franklin County Water District Repair Project																							
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)									
Grubbing/Land Clearing	0.01	0.13	0.07	0.01	0.01	0.01	0.01	0.00	0.00	0.00	28.75	0.00	0.00	26.26									
Grading/Excavation	0.15	1.39	1.28	0.10	0.07	0.03	0.07	0.06	0.01	0.00	262.37	0.04	0.00	239.75									
Drainage/Utilities/Sub-Grade	0.09	0.82	0.73	0.07	0.04	0.02	0.04	0.04	0.00	0.00	172.15	0.02	0.00	157.14									
Paving	0.03	0.33	0.23	0.02	0.02	0.00	0.01	0.01	0.00	0.00	64.75	0.01	0.00	59.20									
Maximum (tons/phase)	0.15	1.39	1.28	0.10	0.07	0.03	0.07	0.06	0.01	0.00	262.37	0.04	0.00	239.75									
Total (tons/construction project)	0.28	2.67	2.32	0.19	0.14	0.06	0.13	0.12	0.01	0.01	528.01	0.08	0.01	482.36									
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.																							
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.																							
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.																							
The CO2e emissions are reported as metric tons per phase.																							

Road Construction Emissions Model		Version 8.1.0	
Data Entry Worksheet			
<p>Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.</p>			
Input Type			
Project Name	Franklin County Water District	Repair Project	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)	
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction	
Project Construction Time	12.00	months	
Working Days per Month	22.00	days (assume 22 if unknown)	
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)	
Project Length	4.11	miles	
Total Project Area	5.00	acres	
Maximum Area Disturbed/Day	0.05	acres	
Water Trucks Used?	1	1. Yes 2. No	
<p>Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.</p> <p>http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries</p>			
Material Hauling Quantity Input			
Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)
Soil	Grubbing/Land Clearing	20.00	
	Grading/Excavation	20.00	
	Drainage/Utilities/Sub-Grade	20.00	
	Paving	20.00	
Asphalt	Grubbing/Land Clearing	20.00	
	Grading/Excavation	20.00	
	Drainage/Utilities/Sub-Grade	20.00	
	Paving	20.00	
Mitigation Options			
On-road Fleet Emissions Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer		
Off-road Equipment Emissions Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard		

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2021
Grading/Excavation		4.80		2/7/2021
Drainage/Utilities/Sub-Grade		4.20		7/3/2021
Paving		1.80		11/8/2021
Totals (Months)	12			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing		30.00			0	0.00					
Miles/round trip: Grading/Excavation		30.00			0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0	0.00					
Miles/round trip: Paving		30.00			0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2
Grubbing/Land Clearing (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Grading/Excavation (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Draining/Utilities/Sub-Grade (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58
Hauling Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input						
Miles/round trip: Grubbing/Land Clearing	30.00			0	0.00	
Miles/round trip: Grading/Excavation	30.00			0	0.00	
Miles/round trip: Drainage/Utilities/Sub-Grade	30.00			0	0.00	
Miles/round trip: Paving	30.00			0	0.00	

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.9
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.9
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.9
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.5
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values	Default Values								
User Input											
Miles/ one-way trip	20			Calculated Daily Trips		Calculated Daily VMT					
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	40			80		1,600.00					
No. of employees: Grading/Excavation	40			80		1,600.00					
No. of employees: Drainage/Utilities/Sub-Grade	40			80		1,600.00					
No. of employees: Paving	40			80		1,600.00					
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Paving (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	359.66	0.01	0.00	361.10	
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Paving (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.81	0.01	0.01	84.27	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.05	0.01	0.00	0.00	0.00	16.95	0.00	0.00	17.03	
Pounds per day - Grading/Excavation	0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97	
Tons per const. Period - Grading/Excavation	0.01	0.21	0.02	0.01	0.00	0.00	67.82	0.00	0.00	68.11	
Pounds per day - Drainage/Utilities/Sub-Grade	0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.18	0.02	0.01	0.00	0.00	59.34	0.00	0.00	59.60	
Pounds per day - Paving	0.23	3.89	0.39	0.17	0.07	0.01	1,283.08	0.03	0.02	1,288.61	
Tons per const. Period - Paving	0.00	0.08	0.01	0.00	0.00	0.00	25.40	0.00	0.00	25.51	
Total tons per construction project	0.03	0.51	0.05	0.02	0.01	0.00	169.52	0.00	0.00	170.25	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Vehicle/Day	Default Values Miles Traveled/Vehicle/Day	Calculated Daily VMT					
User Input											
Grubbing/Land Clearing - Exhaust	1			40.00		40.00					
Grading/Excavation - Exhaust	1			40.00		40.00					
Drainage/Utilities/Subgrade	1			40.00		40.00					
Paving	1			40.00		40.00					
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.13	0.01	0.00	0.00	137.53	0.00	0.00	138.89	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00	1.83	
Pounds per day - Grading/Excavation	0.01	0.03	0.13	0.01	0.00	0.00	137.53	0.00	0.00	138.89	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	7.26	0.00	0.00	7.33	
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.03	0.13	0.01	0.00	0.00	137.53	0.00	0.00	138.89	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	6.35	0.00	0.00	6.42	
Pounds per day - Paving	0.01	0.03	0.13	0.01	0.00	0.00	137.50	0.00	0.00	138.85	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	2.72	0.00	0.00	2.75	
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	18.15	0.00	0.00	18.33	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.05			0.50	0.01	0.10	0.00
Fugitive Dust - Grading/Excavation	0.05			0.50	0.03	0.10	0.01
Fugitive Dust - Drainage/Utilities/Subgrade	0.05			0.50	0.02	0.10	0.00

[illegible]

Grading/Excavation	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type											
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00				Model Default Tier	Concrete/Industrial Saws	0.77	7.35	6.08	0.35	0.35	0.01	1,185.33	0.07	0.01	1,189.71
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Excavators	0.24	3.38	2.22	0.11	0.10	0.01	516.02	0.17	0.00	521.59
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00	0.00	34.65
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Rubber Tired Dozers	0.89	7.27	9.14	0.42	0.38	0.01	861.68	0.28	0.01	870.94
1.00				Model Default Tier	Rubber Tired Loaders	0.34	1.58	3.81	0.13	0.12	0.01	596.28	0.19	0.01	602.72
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01	0.00	49.56
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00				Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.92	0.11	0.10	0.00	304.00	0.10	0.00	307.27
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab										
	Number of Vehicles			Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation			pounds per day	2.52	22.36	23.77	1.14	1.07	0.04	3,547.11	0.81	0.03	3,576.45
		Grading/Excavation			tons per phase	0.13	1.18	1.26	0.06	0.06	0.00	187.29	0.04	0.00	188.84

Drainage/Utilities/Subgrade	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Mitigation Option											
Override of Default Number of Vehicles		Program-estimate	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Air Compressors	0.29	2.42	2.04	0.13	0.13	0.00	375.26	0.03	0.00	0.00	376.75
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.40	1.94	4.74	0.19	0.18	0.01	546.65	0.18	0.00	0.00	552.54
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Forklifts	0.13	1.17	1.18	0.08	0.08	0.00	148.03	0.05	0.00	0.00	149.63
1.00			Model Default Tier	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	0.00	625.23
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Signal Boards	0.06	0.30	0.36	0.01	0.01	0.00	49.31	0.01	0.00	0.00	49.56
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.92	0.11	0.10	0.00	304.00	0.10	0.00	0.00	307.27
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Welders	0.30	1.72	1.51	0.07	0.07	0.00	207.48	0.03	0.00	0.00	208.67
User-Defined Off-road Equipment					If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab										
Number of Vehicles		Equipment Tier		Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Type												
Override of Default Number of Vehicles		Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00				Model Default Tier	Cement and Mortar Mixers	0.18	0.93	1.10	0.04	0.04	0.00	151.55	0.02	0.04	152.32	
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00				Model Default Tier	Pavers	0.24	2.81	2.50	0.12	0.11	0.00	441.07	0.14	0.00	445.82	
1.00				Model Default Tier	Paving Equipment	0.19	2.52	1.92	0.09	0.09	0.00	391.47	0.13	0.00	395.69	
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00				Model Default Tier	Rollers	0.19	1.90	1.94	0.12	0.11	0.00	257.27	0.08	0.00	260.04	
				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00				Model Default Tier	Tractors/Loaders/Backhoes	0.38	4.57	3.82	0.22	0.21	0.01	608.03	0.20	0.01	614.57	
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment							ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving			pounds per day	1.17	12.73	11.28	0.60	0.56	0.02	1,849.37	0.56	0.02	1,868.44	
		Paving			tons per phase	0.02	0.25	0.22	0.01	0.01	0.00	36.62	0.01	0.00	37.00	
Total Emissions all Phases (tons per construction period) =>						0.25	2.15	2.25	0.11	0.11	0.00	340.34	0.08	0.00	343.12	

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

APPENDIX B

CalEEMod Model Worksheets

Franklin County Water District Improvements

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2023
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 - Modified

Construction Phase - Modified

Off-road Equipment -

Off-road Equipment - Modified

Off-road Equipment - Modified

Off-road Equipment - Modified

Off-road Equipment - Modified

Grading -

Trips and VMT - Modified

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	120.00
tblConstructionPhase	NumDays	0.00	40.00
tblConstructionPhase	NumDays	0.00	40.00
tblConstructionPhase	PhaseEndDate	6/25/2021	9/17/2021
tblConstructionPhase	PhaseEndDate	9/17/2021	11/12/2021
tblConstructionPhase	PhaseEndDate	10/29/2021	1/7/2022
tblConstructionPhase	PhaseStartDate	6/26/2021	9/20/2021
tblConstructionPhase	PhaseStartDate	9/18/2021	11/15/2021
tblGrading	AcresOfGrading	60.00	0.00
tblGrading	MaterialExported	0.00	160.00
tblOffRoadEquipment	HorsePower	78.00	89.00
tblOffRoadEquipment	HorsePower	84.00	247.00
tblOffRoadEquipment	HorsePower	6.00	81.00
tblOffRoadEquipment	HorsePower	158.00	187.00
tblOffRoadEquipment	LoadFactor	0.50	0.20
tblOffRoadEquipment	LoadFactor	0.74	0.40
tblOffRoadEquipment	LoadFactor	0.82	0.73
tblOffRoadEquipment	LoadFactor	0.38	0.41
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Trenchers
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2018	2023
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00

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	0.1258	1.2262	0.9239	2.1200e-003	0.0552	0.0541	0.1093	0.0275	0.0514	0.0789	0.0000	185.0067	185.0067	0.0397	0.0000	185.9978
2022	0.0145	0.1277	0.1592	2.6000e-004	2.2100e-003	6.4800e-003	8.6800e-003	5.9000e-004	6.0300e-003	6.6200e-003	0.0000	22.5609	22.5609	5.9500e-003	0.0000	22.7096
Total	0.1403	1.3539	1.0832	2.3800e-003	0.0574	0.0606	0.1180	0.0281	0.0574	0.0856	0.0000	207.5676	207.5676	0.0456	0.0000	208.7074

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	0.1258	1.2262	0.9239	2.1200e-003	0.0552	0.0541	0.1093	0.0275	0.0514	0.0789	0.0000	185.0065	185.0065	0.0397	0.0000	185.9976
2022	0.0145	0.1277	0.1592	2.6000e-004	2.2100e-003	6.4800e-003	8.6800e-003	5.9000e-004	6.0300e-003	6.6200e-003	0.0000	22.5609	22.5609	5.9500e-003	0.0000	22.7096
Total	0.1403	1.3539	1.0832	2.3800e-003	0.0574	0.0606	0.1180	0.0281	0.0574	0.0856	0.0000	207.5673	207.5673	0.0456	0.0000	208.7072

[illegible]

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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
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	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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
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	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

	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
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	Site Preparation	Site Preparation	4/5/2021	9/17/2021	5	120	
2	Trenching	Trenching	9/20/2021	11/12/2021	5	40	
3	Building Construction	Building Construction	11/15/2021	1/7/2022	5	40	
4	Paving	Paving	1/10/2022	3/4/2022	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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
Site Preparation	Air Compressors	1	6.00	78	0.48
Site Preparation	Signal Boards	1	8.00	81	0.73
Building Construction	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Welders	1	6.00	46	0.45
Trenching	Trenchers	1	6.00	89	0.20
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Rubber Tired Dozers	1	1.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Generator Sets	1	1.00	247	0.40
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Plate Compactors	1	6.00	8	0.43
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Excavators	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trenching	Other Construction Equipment	1	6.00	172	0.42
Site Preparation	Graders	1	8.00	187	0.41

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
Site Preparation	6	13.00	4.00	20.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0925	0.9338	0.6552	1.5500e-003		0.0403	0.0403		0.0384	0.0384	0.0000	135.1449	135.1449	0.0312	0.0000	135.9246
Total	0.0925	0.9338	0.6552	1.5500e-003	0.0452	0.0403	0.0855	0.0248	0.0384	0.0632	0.0000	135.1449	135.1449	0.0312	0.0000	135.9246

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	8.0000e-005	2.5700e-003	4.0000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7528	0.7528	5.0000e-005	0.0000	0.7540
Vendor	8.4000e-004	0.0266	5.5500e-003	7.0000e-005	1.5900e-003	8.0000e-005	1.6700e-003	4.6000e-004	8.0000e-005	5.4000e-004	0.0000	6.4709	6.4709	6.3000e-004	0.0000	6.4865
Worker	3.2700e-003	2.2400e-003	0.0237	6.0000e-005	6.2200e-003	5.0000e-005	6.2700e-003	1.6500e-003	4.0000e-005	1.7000e-003	0.0000	5.4950	5.4950	1.7000e-004	0.0000	5.4992
Total	4.1900e-003	0.0314	0.0296	1.4000e-004	7.9800e-003	1.4000e-004	8.1200e-003	2.1600e-003	1.3000e-004	2.3000e-003	0.0000	12.7186	12.7186	8.5000e-004	0.0000	12.7398

3.2 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	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0925	0.9338	0.6552	1.5500e-003		0.0403	0.0403		0.0384	0.0384	0.0000	135.1447	135.1447	0.0312	0.0000	135.9244
Total	0.0925	0.9338	0.6552	1.5500e-003	0.0452	0.0403	0.0855	0.0248	0.0384	0.0632	0.0000	135.1447	135.1447	0.0312	0.0000	135.9244

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	8.0000e-005	2.5700e-003	4.0000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7528	0.7528	5.0000e-005	0.0000	0.7540
Vendor	8.4000e-004	0.0266	5.5500e-003	7.0000e-005	1.5900e-003	8.0000e-005	1.6700e-003	4.6000e-004	8.0000e-005	5.4000e-004	0.0000	6.4709	6.4709	6.3000e-004	0.0000	6.4865
Worker	3.2700e-003	2.2400e-003	0.0237	6.0000e-005	6.2200e-003	5.0000e-005	6.2700e-003	1.6500e-003	4.0000e-005	1.7000e-003	0.0000	5.4950	5.4950	1.7000e-004	0.0000	5.4992
Total	4.1900e-003	0.0314	0.0296	1.4000e-004	7.9800e-003	1.4000e-004	8.1200e-003	2.1600e-003	1.3000e-004	2.3000e-003	0.0000	12.7186	12.7186	8.5000e-004	0.0000	12.7398

3.3 Trenching - 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	8.9200e-003	0.0898	0.0787	1.2000e-004		5.1800e-003	5.1800e-003		4.7700e-003	4.7700e-003	0.0000	10.1750	10.1750	3.2900e-003	0.0000	10.2573
Total	8.9200e-003	0.0898	0.0787	1.2000e-004		5.1800e-003	5.1800e-003		4.7700e-003	4.7700e-003	0.0000	10.1750	10.1750	3.2900e-003	0.0000	10.2573

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	1.4000e-004	4.4300e-003	9.2000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.0785	1.0785	1.0000e-004	0.0000	1.0811
Worker	4.2000e-004	2.9000e-004	3.0400e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7045	0.7045	2.0000e-005	0.0000	0.7050
Total	5.6000e-004	4.7200e-003	3.9600e-003	2.0000e-005	1.0600e-003	2.0000e-005	1.0800e-003	2.9000e-004	2.0000e-005	3.1000e-004	0.0000	1.7830	1.7830	1.2000e-004	0.0000	1.7861

3.3 Trenching - 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	tons/yr										MT/yr					
Off-Road	8.9200e-003	0.0898	0.0787	1.2000e-004		5.1800e-003	5.1800e-003		4.7700e-003	4.7700e-003	0.0000	10.1750	10.1750	3.2900e-003	0.0000	10.2573
Total	8.9200e-003	0.0898	0.0787	1.2000e-004		5.1800e-003	5.1800e-003		4.7700e-003	4.7700e-003	0.0000	10.1750	10.1750	3.2900e-003	0.0000	10.2573

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	1.4000e-004	4.4300e-003	9.2000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.8000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.0785	1.0785	1.0000e-004	0.0000	1.0811
Worker	4.2000e-004	2.9000e-004	3.0400e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7045	0.7045	2.0000e-005	0.0000	0.7050
Total	5.6000e-004	4.7200e-003	3.9600e-003	2.0000e-005	1.0600e-003	2.0000e-005	1.0800e-003	2.9000e-004	2.0000e-005	3.1000e-004	0.0000	1.7830	1.7830	1.2000e-004	0.0000	1.7861

3.4 Building Construction - 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	0.0192	0.1624	0.1531	2.8000e-004		8.4800e-003	8.4800e-003		8.1300e-003	8.1300e-003	0.0000	23.6251	23.6251	4.0900e-003	0.0000	23.7273
Total	0.0192	0.1624	0.1531	2.8000e-004		8.4800e-003	8.4800e-003		8.1300e-003	8.1300e-003	0.0000	23.6251	23.6251	4.0900e-003	0.0000	23.7273

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	1.2000e-004	3.8800e-003	8.1000e-004	1.0000e-005	2.3000e-004	1.0000e-005	2.4000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9437	0.9437	9.0000e-005	0.0000	0.9459
Worker	3.7000e-004	2.5000e-004	2.6600e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6164	0.6164	2.0000e-005	0.0000	0.6169
Total	4.9000e-004	4.1300e-003	3.4700e-003	2.0000e-005	9.3000e-004	2.0000e-005	9.4000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	1.5601	1.5601	1.1000e-004	0.0000	1.5628

3.4 Building Construction - 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	tons/yr										MT/yr					
Off-Road	0.0192	0.1624	0.1531	2.8000e-004		8.4800e-003	8.4800e-003		8.1300e-003	8.1300e-003	0.0000	23.6251	23.6251	4.0900e-003	0.0000	23.7272
Total	0.0192	0.1624	0.1531	2.8000e-004		8.4800e-003	8.4800e-003		8.1300e-003	8.1300e-003	0.0000	23.6251	23.6251	4.0900e-003	0.0000	23.7272

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	1.2000e-004	3.8800e-003	8.1000e-004	1.0000e-005	2.3000e-004	1.0000e-005	2.4000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9437	0.9437	9.0000e-005	0.0000	0.9459
Worker	3.7000e-004	2.5000e-004	2.6600e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.0000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6164	0.6164	2.0000e-005	0.0000	0.6169
Total	4.9000e-004	4.1300e-003	3.4700e-003	2.0000e-005	9.3000e-004	2.0000e-005	9.4000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	1.5601	1.5601	1.1000e-004	0.0000	1.5628

3.4 Building Construction - 2022**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	2.5000e-003	0.0209	0.0216	4.0000e-005		1.0400e-003	1.0400e-003		9.9000e-004	9.9000e-004	0.0000	3.3757	3.3757	5.8000e-004	0.0000	3.3901
Total	2.5000e-003	0.0209	0.0216	4.0000e-005		1.0400e-003	1.0400e-003		9.9000e-004	9.9000e-004	0.0000	3.3757	3.3757	5.8000e-004	0.0000	3.3901

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	2.0000e-005	5.2000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1336	0.1336	1.0000e-005	0.0000	0.1339
Worker	5.0000e-005	3.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0849	0.0849	0.0000	0.0000	0.0850
Total	7.0000e-005	5.5000e-004	4.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	0.0000	0.2188

3.4 Building Construction - 2022**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	2.5000e-003	0.0209	0.0216	4.0000e-005		1.0400e-003	1.0400e-003		9.9000e-004	9.9000e-004	0.0000	3.3757	3.3757	5.8000e-004	0.0000	3.3901
Total	2.5000e-003	0.0209	0.0216	4.0000e-005		1.0400e-003	1.0400e-003		9.9000e-004	9.9000e-004	0.0000	3.3757	3.3757	5.8000e-004	0.0000	3.3901

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	2.0000e-005	5.2000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1336	0.1336	1.0000e-005	0.0000	0.1339
Worker	5.0000e-005	3.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0849	0.0849	0.0000	0.0000	0.0850
Total	7.0000e-005	5.5000e-004	4.5000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.2185	0.2185	1.0000e-005	0.0000	0.2188

3.5 Paving - 2022**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	0.0109	0.1056	0.1300	2.0000e-004		5.4200e-003	5.4200e-003		5.0200e-003	5.0200e-003	0.0000	17.2006	17.2006	5.3100e-003	0.0000	17.3334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0109	0.1056	0.1300	2.0000e-004		5.4200e-003	5.4200e-003		5.0200e-003	5.0200e-003	0.0000	17.2006	17.2006	5.3100e-003	0.0000	17.3334

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	1.0100e-003	6.7000e-004	7.1900e-003	2.0000e-005	2.0700e-003	2.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.7661	1.7661	5.0000e-005	0.0000	1.7673
Total	1.0100e-003	6.7000e-004	7.1900e-003	2.0000e-005	2.0700e-003	2.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.7661	1.7661	5.0000e-005	0.0000	1.7673

3.5 Paving - 2022**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	0.0109	0.1056	0.1300	2.0000e-004		5.4200e-003	5.4200e-003		5.0200e-003	5.0200e-003	0.0000	17.2006	17.2006	5.3100e-003	0.0000	17.3333
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0109	0.1056	0.1300	2.0000e-004		5.4200e-003	5.4200e-003		5.0200e-003	5.0200e-003	0.0000	17.2006	17.2006	5.3100e-003	0.0000	17.3333

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	1.0100e-003	6.7000e-004	7.1900e-003	2.0000e-005	2.0700e-003	2.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.7661	1.7661	5.0000e-005	0.0000	1.7673
Total	1.0100e-003	6.7000e-004	7.1900e-003	2.0000e-005	2.0700e-003	2.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.7000e-004	0.0000	1.7661	1.7661	5.0000e-005	0.0000	1.7673

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

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504505	0.029429	0.155974	0.104791	0.016717	0.004370	0.015463	0.156066	0.002403	0.002061	0.006105	0.001524	0.000591

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

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					
User Defined Industrial	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			
User Defined Industrial	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			
User Defined Industrial	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	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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			
User Defined Industrial	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			
User Defined Industrial	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			
User Defined Industrial	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			
User Defined Industrial	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
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10.0 Vegetation

APPENDIX B
CULTURAL RESOURCES

Historic Property Identification Report for the Franklin County Water District Sewer Rehabilitation Project, Merced County, California

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December 2019
draft

USGS Atwater 7.5' quadrangle

Project area 26.83 acres; 23.61 acres intensive survey, 1.95 acres non-intensive, 1.27 acres not surveyed

Keywords: Negative findings

MANAGEMENT SUMMARY

Applied EarthWorks, Inc. (Æ) performed a historic properties inventory for the Franklin County Water District (FCWD) Sewer Rehabilitation Project (Project) in Merced County, California. The Project will improve the existing FCWD sewer infrastructure through the systematic noninvasive repair and/or replacement of pipelines and expand the current wastewater treatment facility (WWTF). The Project will receive funding from the California State Water Resources Control Board Clean Water State Revolving Fund, a joint federal-state program. The Project thus requires compliance with Section 106 of the National Historic Preservation Act and the California Environmental Quality Act.

To meet federal and state standards, Æ completed a historic properties inventory under contract to QK Inc. to determine whether cultural resources are present within the Project area. The investigation included: a records search at the Central California Information Center (CCIC) of the California Historical Resources Information System to identify previously recorded cultural resources and prior studies in the Project area and surrounding 0.5-mile area; a search of the Native American Heritage Commission's (NAHC) Sacred Lands File to identify places of importance to Native American tribes with ancestral ties to the Project area and request contact information for tribal representatives who may have information about the Project area; a buried site sensitivity assessment; and an archaeological and built-environment pedestrian survey of the Project area.

The CCIC reported seven prior cultural resource studies in the Project area and 27 within the surrounding 0.5-mile area. The records search did not identify previously recorded cultural resources in the Project area, although 21 previously recorded historic-era structures or buildings were identified within the surrounding 0.5-mile area. A search of the NAHC's Sacred Lands File did not result in the identification of sacred places or other areas of tribal importance within the Project area. In response to Æ's nongovernmental and best practices outreach to local tribal representatives, Dumna Wo-Wah Tribal Government Chairperson Robert Ledger expressed concern about deep excavation related to construction of ponds and requested archaeological and tribal monitoring during ground-disturbing activities.

The buried site assessment revealed that soils in the Project area have low potential for harboring well-preserved archaeological deposits in primary context to an estimated depth of 6 feet below the ground surface (bgs) due to impacts from historic and modern development within the Project area. Below the duripan (estimated to occur at about 6.5 feet bgs), there is potential for paleosols to contain well-preserved and intact archaeological deposits; however, this finding has not been ground-truthed.

Consistent with federal and state statutes, Æ recommends that a Secretary of the Interior qualified archaeologist administer a Workers' Environmental Awareness Program (WEAP) prior to Project activities that would involve ground disturbance in previously undisturbed soils. The WEAP would be provided to all Project personnel who may be present during ground-disturbing

activities. The purpose of the WEAP would be to train workers in learning to recognize cultural deposits and human remains as well as establish a reporting process for inadvertent discoveries, should any occur during Project implementation. Further, Æ advises that if archaeological remains are encountered during ground-disturbing activities, all activity within 50 feet of the find should be halted until a qualified archaeologist can identify the discovery and assess its significance. In addition, if human remains are uncovered during construction, the Merced County Coroner is to be notified immediately and will inspect the burial. If the remains are identified by the coroner to be Native American based on an assessment of the archaeological context, age, cultural associations, or biological traits, then California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendant, who will be afforded the opportunity to recommend options for treatment and disposition of the human remains to the landowner.

A copy of this report will be transmitted to the CCIC for inclusion in the California Historical Resources Information System. Field notes and photographs are on file at Æ's office in Fresno, California.

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INTRODUCTION

Applied EarthWorks, Inc. (Æ), under subcontract to QK Inc., completed a historic properties inventory for the Franklin County Water District (FCWD) Sewer Rehabilitation Project (Project) in Merced County, California (Figure 1-1). The Project is in the unincorporated community of Franklin-Beachwood (Figure 1-2). Specifically, the Project is in Sections 14, 15, and 16 in Township 7 South, Range 13 East, Mt. Diablo Base and Meridian, of the U.S. Geological Survey (USGS) Atwater 7.5-minute topographic quadrangle (Figure 1-3).

The Project will receive funding from the State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund, which is a federally funded program administered through the U.S. Environmental Protection Agency. The SWRCB's Environmental Review Process Guidelines (2015), which are separate from and in addition to the California Environmental Quality Act (CEQA) Guidelines, require environmental review under Section 106 of the National Historic Preservation Act (NHPA) for all projects seeking SWRCB funding. Both the NHPA (Chapter 36, Code of Federal Regulations Code of Federal Regulations [CFR], Part 800.1[a]) and CEQA (Public Resources Code [PRC] 21000[g]) mandate that government agencies consider whether a proposed Project could cause a significant effect on the environment, including cultural resources.

1.1 PROJECT DESCRIPTION

The FCWD provides water and sewer services to the Franklin-Beachwood community. The objective of proposed sewer line and wastewater treatment facility (WWTF) improvements is to bring the Franklin-Beachwood community up to the standard permitted by addressing aging infrastructure and preventing unsanitary conditions. The FCWD has identified improvements for a limited number of deficiencies in the sewer collection system. Improvements to discontinuous segments of the sewer line would be accomplished using a combination of the traditional method and the trenchless method. Approximately 21,723 linear feet of sewer mains may be replaced, either using the traditional or trenchless method. Most of the pipeline repairs are anticipated to occur in the ground and would not involve excavation in previously undisturbed areas. Portions of the line would be abandoned in place and capped at both ends, and new pipe would be installed parallel to the existing pipelines.

In addition, WWTF evaporation/percolation Pond 3 would be decommissioned for the construction of a new extended aeration-activated sludge facility (Figure 1-4). The proposed aeration-activated sludge facility would be constructed in a new earthen embankment in the western portion of existing evaporation/percolation Pond 3. The basin will be excavated to increase its current depth of 4.7 feet to a depth of 14 feet. The existing lift station would remain in place. Approximately 51 linear feet of 12-inch pipe would convey influent wastewater from the lift station to the aerated lagoon reactor.

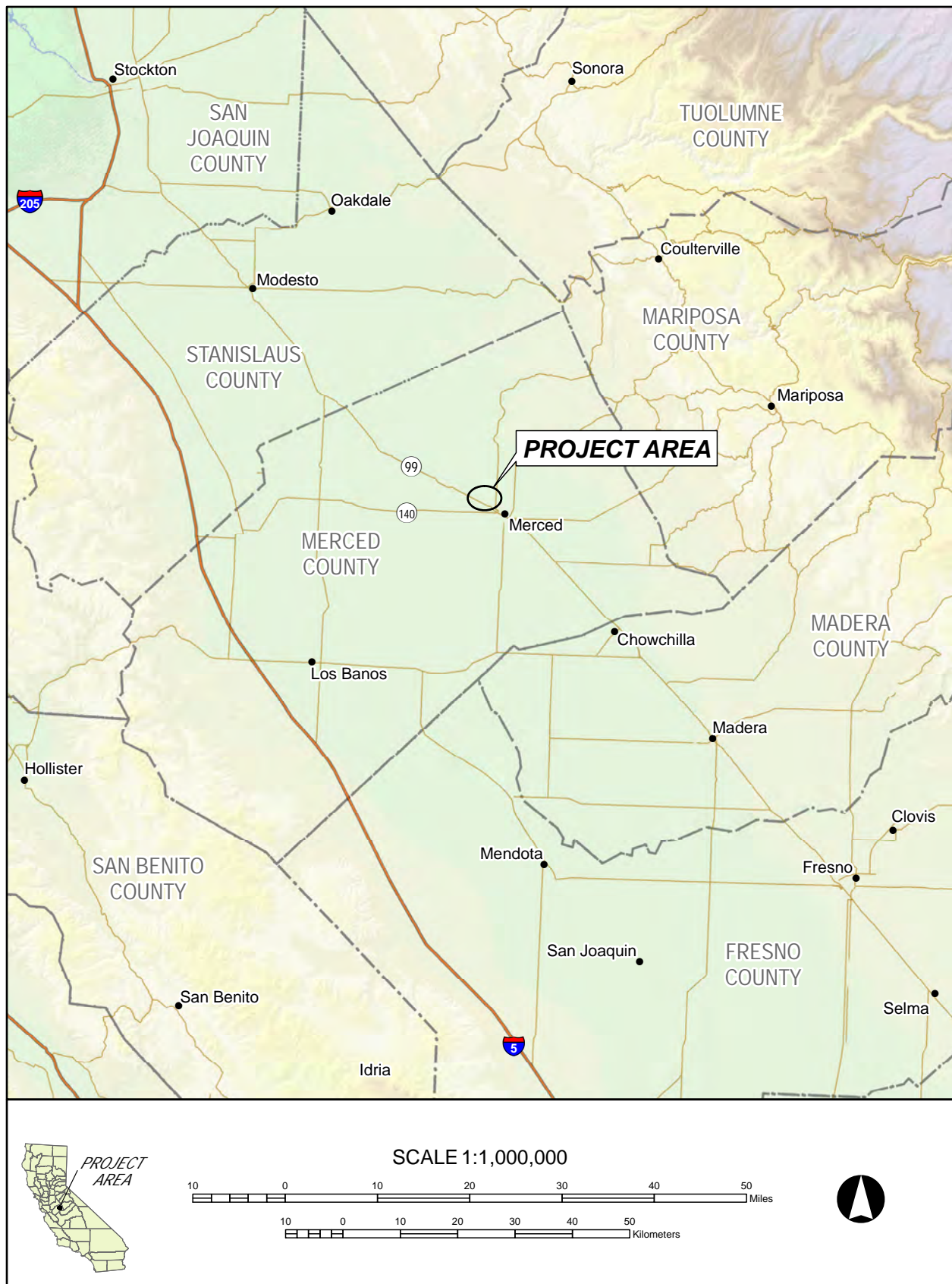


Figure 1-1 Project vicinity in Merced County, California.

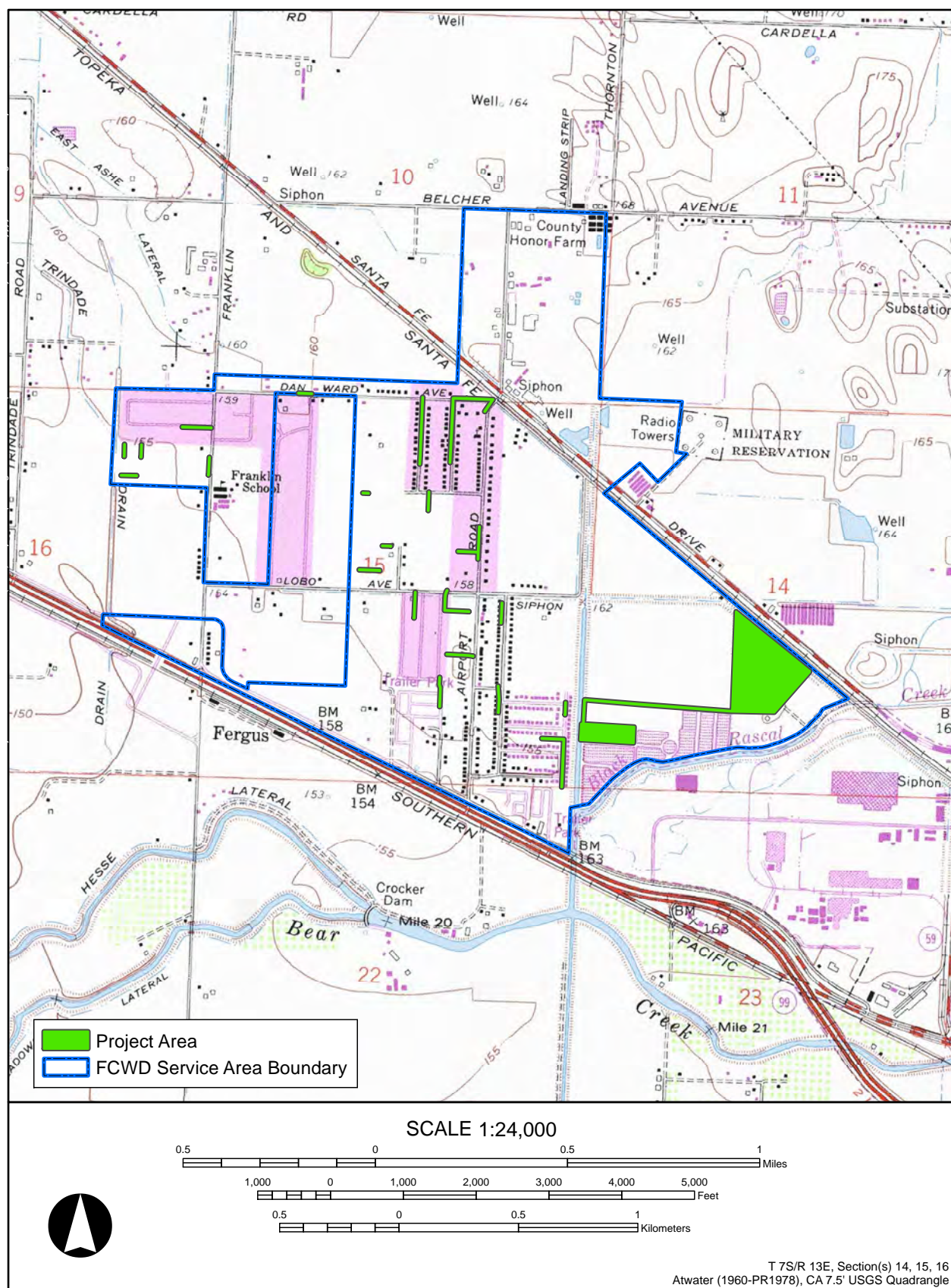




Figure 1-4 Proposed percolation pond location (AM Consulting Engineers 2019:77).

Finally, construction of evaporation/percolation Ponds 13, 14, and 15 would increase the facility's disposal capacity from 0.4 million gallons per day to 0.6 million gallons per day. Ponds 13, 14, and 15 would be built on approximately 20 acres of vacant land north of Ponds 11 and 12 (Figure 1-4). These three proposed ponds would be excavated to a depth of 5 feet below the ground surface (bgs).

1.2 TERMINOLOGY

For the purposes of this report, a cultural resource is defined as a prehistoric or historic-era archaeological site, or a historical building, structure, or object. Consistent with 36 CFR 60.3, the term "historical" applies to archaeological artifacts and features as well as buildings, structures, or objects that are 50 years old or older. Exception to the 50-year criterion is rare but does occur (National Park Service 2002). The importance or significance of a cultural resource depends on whether it qualifies at the federal level for inclusion in the National Register of Historic Places (NRHP) or at the state or local level for inclusion in the California Register of Historical Resources (CRHR). Cultural resources determined eligible for inclusion in the NRHP are termed "historic properties," while those eligible for inclusion in the CRHR are called "historical resources" (36 CFR 800.16[l]; California Code of Regulations [CCR] 15064.5[a]). Under both statutes, the determination of eligibility for the NRHP or CRHR is based in part on the consideration of significance criteria as defined in 36 CFR 60.4 and 14 CCR 15064.5(a)(3), respectively.

The County of Merced is the agency responsible for environmental review per CEQA Guidelines (California Public Resource Code [PRC] 21084.1), while the SWRCB is the lead agency for environmental review pursuant to federal laws and regulations related to the NHPA. Æ completed a historic properties inventory to identify potential historic properties and historical resources within the Project area. The Project area is defined herein as a three-dimensional geographic area along a horizontal and vertical axis within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, should they exist. The Project area includes 26.83 acres that encompass all areas proposed for installation of Project components as described in Section 1.1 (Figures 1-2 and 1-3). Project ground disturbance will not exceed a depth of 6 feet bgs in most areas of the Project. A maximum depth of 14 feet is expected for construction of Pond 3. The maximum vertical height would not exceed ground surface level.

1.3 PROFESSIONAL QUALIFICATIONS

Æ's Senior Archaeologist Diana T. Dyste (M.A.), a Registered Professional Archaeologist (RPA 39362477), served as project manager and co-author; she also provided technical and administrative oversight for all aspects of the Project. Æ Associate Archaeologist Randy Ottenhoff (Ph.D., RPA 17098) served as field supervisor and co-author. Ottenhoff completed the pedestrian archaeological survey with field technician Sairy Tobin (B.A.). Dyste and Ottenhoff meet the Secretary of the Interior's Professional Qualification Standards in Archaeology. Staff Archaeologist/GIS Technician Jessica Jones (B.A.) and Flavio Silva (Ph.D.) prepared maps, created report graphics, and compiled the Project's GIS data. Résumés for key personnel are provided in Appendix A.

2 BACKGROUND

2.1 NATURAL ENVIRONMENT

Merced County lies within a 500-mile-long elongated lowland called the Great Valley or, more commonly, the Central Valley (Norris and Webb 1990). Bounded by the Sierra Nevada range to the east, Coast Ranges to the west, Cascade Range to the north, and Tehachapi Mountains to the south, the valley is divided into two regions, named for their dominant rivers: the Sacramento Valley and the San Joaquin Valley. Merced County occupies the south-central portion of the San Joaquin Valley, which extends from the Sacramento–San Joaquin Delta to the foot of the Tehachapi Mountains.

The San Joaquin Valley comprises two distinct hydrologic regions: the San Joaquin River and the Tulare Basin (Department of Water Resources 2003). The San Joaquin River drains the San Joaquin hydrologic region into the Delta region before entering the Pacific Ocean. Before historic drainage projects and modern reclamation efforts, seasonal flooding within the San Joaquin region produced extensive wetlands. Lakes, marshes, and sloughs once covered more than 5,000 square kilometers in the San Joaquin Valley (Moratto 1984:168). Hydrologic patterns during prehistory supported a rich diversity of plant and animal species, which in turn supported human populations within the Central Valley. Common native plants included white, blue, and live oak (*Quercus* spp.) as well as walnut (*Juglans* sp.), cottonwood (*Populus fremontii*), willow (*Salix* sp.), and tule (*Schoenoplectus* sp.), especially hardstem bulrush (*Scirpus acutus*). Also prominent was cattail (*Typha* sp.) and various grasses, forbs, and sedges. A variety of animals lived in and around the Project area prior to the modern era, including mule deer (*Odocoileus hemionus*), white-tailed deer (*O. virginianus*), tule elk (*Cervus* sp.), pronghorn (*Antilocapra americana*), grizzly bears (*Ursus arctos californicus*), black bears (*U. americanus*), and mountain lions (*Puma concolor*) (Preston 1981:245–247).

Mammals commonly noted today and throughout history include the valley coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), kit fox (*Vulpes macrotis*), and rabbit (Leporidae). Avian species include American osprey (*Pandion haliaetus*), redwing blackbird (*Agelaius phoeniceus*), marsh hawk (*Circus cyaneus*), Nuttall's woodpecker (*Dryobates nuttallii*), western meadowlark (*Sturnella neglecta*), and quail (Odontophoridae). The lakes, rivers, and streams throughout the vicinity provided habitat for anadromous fish, including Chinook salmon (*Oncorhynchus tshawytscha*), white sturgeon (*Acipenser transmontanus*), Sacramento perch (*Archoplites interruptus*), and rainbow trout (*Oncorhynchus mykiss*) (Preston 1981:249). Potamodromous fish include thick-tailed chub (*Gila crassicauda*) and Sacramento sucker (*Catostomidae* sp.).

Agriculture, ranching, and damming of natural watercourses has spurred the replacement of native plants and animals with domesticated species. Urban development of the valley floor and adjacent foothill areas has further reduced available habitat for native flora and fauna. The Project area contains very few native plants and animal species because it has undergone

extensive cultivation and residential development since the nineteenth century. For example, the thick-tailed chub was once a major dietary component for Native Americans in the Central Valley but is now extinct. Other native flora and fauna are extant in the Project area, albeit in exponentially smaller populations.

2.2 PREHISTORY

The San Joaquin Valley prehistoric record is among the least understood of all regions in California. Reconstruction of past cultural patterns has been stymied by two key factors: geomorphology and human activity (Dillon 2002; Siefken 1999). The valley floor that encompasses the Project area has been inundated with thick alluvial deposits resulting from granitic and sedimentary outflow from the Merced River, particularly during mass flood events. This pattern has continued for millennia and has resulted in the burial of early- to mid-Holocene archaeological sites, estimated to be buried at depths up to 35 feet along the lower stretches of the San Joaquin Valley drainage systems (Moratto 1984:214; Onken 2019). Thus, compared to other regions in the state, there is a paucity of research and a related lack of data from which to build a complete understanding of past human behavior specific to Merced County.

In addition, archaeological sites buried in shallow deposits have been heavily impacted by agricultural, transportation, and urban development since the historic period. Development has effectively removed mounds and shallow subsurface cultural deposits that once existed in great numbers across the valley floor (Rosenthal et al. 2007). Most archaeological investigations in the San Joaquin Valley have occurred at mid-elevation sites along the Tulare River and in the vicinities of Tulare and Kaweah lakes, as well as to the east in the Sierra Nevada foothills.

Nevertheless, available data for sites in valley lacustrine environs and in the Sierra foothills east of the Project area (e.g., Lloyd et al. 2011) are helpful in identifying key cultural changes within the Project area and surrounding area. The summary of cultural traits presented below is based on a review of San Joaquin Valley lacustrine, riverine, and valley floor site data discussed in Rosenthal et al. (2007), and foothill site data summarized by Lloyd et al. (2011). Cultural periods and accompanying dates (given as calibrated years before present [cal B.P.]) are based on Rosenthal et al. (2007:150–159), Moratto (1984:333), McGuire and Garfinkel (1980:49–53), and Bennyhoff and Fredrickson's unpublished chronologies (Fredrickson 1973, 1974).

The Paleo-Indian Period (13,500–10,500 cal B.P.) is represented by ephemeral lacustrine sites dominated by atlatl dart and spear projectile points. The earliest evidence of distinct valley and foothill cultural patterns appears during the Lower Archaic Period (10,500–7450 cal B.P.). Valley sites contain crescents and stemmed projectile points and reveal the consumption of freshwater fish, waterfowl, mussels, deer, and pronghorn. In contrast, foothills sites are dominated by dense ground stone and flaked stone assemblages with a diet narrowly focused on deer, pronghorn, and presumably nuts or seeds. The Middle Archaic (7450–2500 cal B.P.) includes the Lamont Phase (5950–3150 cal B.P.), a time when semipermanent villages first appear along riverbanks in tandem with larger and more established lacustrine villages. Stone tools were used in abundance; meanwhile, ground stone tool kits emerged along with long-distance trade and exchange networks focused on obsidian, shell beads, and ornaments. In the foothills, lithic and dietary patterns of the Lower Archaic continued.

New cultural patterns emerged during the Upper Archaic Period (2500–850 cal B.P.), especially during the Canebrake Phase (3150–1350 cal B.P.) when a distinct shift in burial practices occurred and geographic differences in site and artifact types appeared. The Sawtooth Phase (1350–650 cal B.P.) is marked by the sudden presence of mound sites in the valley. Widespread proliferation of specialized technology is evident, including new types of bone tools, projectile points, and ceremonial objects such as wands and blades. Paleoethnobotanical studies also suggest the use of labor-intensive and seasonally abundant resources, including acorns, pine nuts, salmon, and shellfish. Similarly, the Emergent Period (850 cal B.P.–Historic Era) is marked by continued variation in settlement and burial patterns across valley and foothill regions, coupled with the disappearance of atlatl and dart tool kits that are replaced with bow-and-arrow technology (i.e., small corner-notched and Desert series projectile points) circa 650 cal B.P. Fishing tool kits expanded to include more efficient harpoons, bone fishhooks, and gorge hooks. In the Tulare Basin, pottery obtained via trade appears as well as baked clay balls used for cooking and making carved clay effigies.

2.3 ETHNOGRAPHY

The Project is in the ancestral and ethnographic territory of the Northern Valley Yokuts (Golla 2011). At the time of first contact with the Spanish missionaries, the Northern Valley, Southern Valley, Delta, and Foothill Yokuts groups collectively inhabited the San Joaquin Valley and the western foothills of the Sierra Nevada from just north of present-day Stockton southward to the Kern River (Golla 2011; Kroeber 1976). These groups spoke a language belonging to the broader Penutian family, which subsumes a relatively diverse assemblage of languages, including Miwok, Costanoan, Maiduan, Wintuan, and others (Golla 2011; Silverstein 1978). Compared to other Penutian languages, however, Yokuts dialects show considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differed minimally and were mutually intelligible, at least among speakers of contiguous groups. This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival and subsequent radiation of the more linguistically diverse Penutian groups such as the Miwok and Costanoan (Moratto 1984:554).

The Merced, San Joaquin, and Chowchilla rivers and their tributaries were critical to sustaining the lifeways of the Northern Valley Yokuts near the Project area. The riparian plant communities and flow of freshwater provided humans with a source of constant food, building materials, and avenues for watercraft travel. Yokuts homes were constructed of tule reeds, and villages were situated near major waterways and built on low mounds to prevent spring flooding (Cook 1960; Gifford and Schenck 1926:132; Schenck and Dawson 1929:308; Wallace 1978a:465–466). Fish provided a major source of protein. Fall and spring spawning brought abundant supplies of salmon to the inhabitants along major rivers and tributaries (Baumhoff 1963:174; Cook 1960). The Yokuts diet was supplemented by various species of fowl (e.g., geese and ducks) that were native to the riverine environment. The Yokuts also relied on seasonally available acorns, which were harvested from groves of valley oak, processed using mortars and pestles, and then cooked as a gruel or bread. Awls from animal bone allowed the Yokuts to create a broad range of baskets that facilitated food storage and transportation.

The Northern Valley Yokuts enjoyed a particularly good relationship with the Costanoan, from whom they acquired mussel and abalone shells. Linguistic studies have identified shared words

and phrases across Delta Yokuts, Miwok, and Costanoan tribes, which suggest that social and economic ties may have existed between these groups as well (Golla 2011:154). The Chauchela Yokuts, generally regarded as fiercely territorial, maintained an agreeable relationship with the Southern Sierra Miwok tribes to the east (Latta 1999:156–157). Inter-marriage between the two groups was common, especially among Chauchela living in the easternmost margins of the valley (Latta 1999:157). The Ausumne Yokuts lived along the Merced River to the north of the Project area. They numbered approximately 450 during John C. Fremont’s expeditions in the 1840s (Latta 1999:101, 156).

As with other Indian groups in California, the lifeways of the Northern Valley Yokuts were dramatically altered as a result of contact with early Spanish explorers and missionaries, miners, ranchers, and other European immigrants who entered the San Joaquin Valley after A.D. 1800. The introduction of European culture and new diseases resulted in a drastic reduction in Yokuts population size. However, there are at least 25 fluent-speaking groups of various Yokuts dialects alive today, including speakers of the Tule-Kaweah and Yawelmani (also known as Yowlumne) who mostly reside on the Tule River Reservation near Porterville, the Choinimni (also known as Choinumne) who live throughout the Kings River region, the Tachi who live at the Santa Rosa Rancheria near Lemoore, and Chuckchansi speakers who live near the Picayune and Table Mountain rancherias northeast of Fresno. Native Americans from these tribal groups have established language and culture schools and actively participate in master-apprentice language partnerships to ensure the continuity of their cultures and languages (Golla 2011:154).

2.4 HISTORY

The first Europeans known to have ventured into the San Joaquin Valley were Spanish soldiers led by Pedro Fages, who entered the valley through Tejon Pass in 1772 (Wallace 1978b:459). Other Europeans followed in 1806 when Lieutenant Gabriel Moraga led a group of Spanish explorers into the San Joaquin Valley to locate new lands for missions (Clough and Secrest 1984:25–27). It was on this expedition that Moraga gave the Merced River its official name (El Rio de Nuestra Señora de la Mercedes [River of Our Lady of Mercy]) when he and his troops reached its bank after a long hot trek through the valley. The expansion of missions in California ceased by the early 1820s as a result of Mexico’s independence from Spain (Clough and Secrest 1984:26), and the Mexican government granted several large tracts of land (ranchos) to individuals during the 1830s and 1840s. The region remained sparsely populated, and the arid valley climate was not conducive to dry farming. Nevertheless, the establishment of the ranchos not only provided the legal basis for property rights for years to come but also marked the beginnings of the Central Valley’s first industry—cattle ranching.

The discovery of gold in the Sierra Nevada and the accession of California to the Union were watershed events in the history of the state and county. During the late 1840s and early 1850s, prospectors from across the nation and around the world flocked to California to mine the precious ore. The first settlements in the county emerged in the foothill areas along the Merced River and included Snelling and Forelorn Hope, later renamed Hopeton (Outcalt 1925:4).

Established in 1855, Merced County was carved out of the northwest portion of Mariposa County. The first county seat was at the Turner and Osborn Ranch on Mariposa Creek but shortly moved to the Snelling Ranch, where a courthouse was constructed in 1857. Except for

fertile areas along the banks of the major waterways, the Central Valley remained largely undeveloped. To the speculators that came to the Sierra Nevada from San Francisco and other western ports, the valley probably represented little more than a dry stretch of land to be traversed before reaching the goldfields to the east. The momentum of the gold rush could not be sustained, and by the early 1850s most of the miners and the merchants who relied on their patronage began to look to other pursuits. With the coming of the railroad and the advent of intensive irrigation, the focus of the county shifted from the foothills to the valley. The founding of the City of Merced in the early 1870s coincided with the arrival of the Central Pacific Railroad (later renamed the Southern Pacific).

Beginning in the 1870s, Merced County also saw a change in its economic leadership. Cattle ranching, which boomed during the 1850s and 1860s with the influx of miners and homesteaders to the valley, gave way to agriculture, specifically wheat farming. Throughout the valley, wealthy real estate moguls were applying a similar formula, purchasing large tracts of land for subdivision, referred to as “colonies,” and selling the parcels to be used for small and medium-sized farming operations. Critical to the marketing and success of these colonies was the development of a reliable water conveyance system that could transform dry soils into arable land. A network of canals soon spread across the valley floor.

2.4.1 Merced Irrigation District

Emerging from the aggregation of various irrigation canals and ditches that were privately constructed between 1870 and 1922, the Merced Irrigation District (MID) formed as a public entity in 1919 (McSwain 1978). The MID quickly became the leading irrigation district in Merced County and was providing irrigation for roughly 180,000 acres of farmland by 1920 (McSwain 1978). Designed as a publicly owned company, the MID operated through the collection of taxes from landowners. Taxes were based on the crop type and acreage size. Ditch tenders were employed by the MID to maintain laterals and help reduce the frequency of conflicts between agricultural landowners. Plans for a dam began in 1921, and by 1927 the New Exchequer Dam was constructed on the Merced River with fully operational hydroelectric power facilities. Excess generated power was sold to the San Joaquin Power and Light Company, providing another source of income for the company.

Unfortunately for the MID, between the months of October and March, the reservoir would remain empty, thus stopping the sale of excess hydroelectric power. Additionally, hydroelectric revenues dropped during a drought between 1928 and 1932. The result was catastrophic for the MID, and by 1932 the district filed for bankruptcy. Through federal loans and Roosevelt’s New Deal plan, the MID regained economic stability, and by 1936 the company was once again operational (Dice 2010). From 1935 to 1937, the MID gained access to funding through the New Deal’s Reconstruction Finance Corporation, which allowed MID to line canals and laterals throughout its system. Today, the MID continues to manage a 1,000-square-mile watershed and provide energy services to residents of Merced County.

2.4.2 Railroads in Merced County

Until the 1860s, transportation within central California suffered from serious geographical burdens due to the state’s mountainous terrain, few roads, and limited waterways. Consequently, the transport of goods and passengers was slow, expensive, and unreliable. This resulted in the

isolation of the Central Valley, which was sparsely populated (Orsi 2005). In the spring of 1872, the Southern Pacific Railroad established a stop along the San Joaquin River at Sycamore, which had previously served as a dock for steamers and a had a ferry crossing. Although the Southern Pacific Railroad was the first company to construct a rail line through the San Joaquin Valley, in 1895 a group of wealthy San Francisco investors began to lay out a secondary rail line, the San Francisco and San Joaquin Valley Railroad. This became known as the “Valley Division” route. The Burlington Northern Santa Fe Railroad route, a standard-gauge single-track line, was constructed between 1895 and the early 1900s as part of the Atchison Topeka and Santa Fe Railway Valley Division route that connected Stockton to Bakersfield (Outcalt 1925:41). A private telegraph line that served the railroad’s needs accompanied the route (Smallwood 2009). Amtrak has used the tracks since the 1970s for passengers and freight.

2.4.3 Agriculture

Agricultural diversification in the valley began as early as the 1880s when a slump in the price of wheat induced many farmers to switch to citrus and vine crops. Chinese and Italian immigrants accelerated this process with the introduction of then-exotic vegetables such as eggplant and asparagus as well as sweet potatoes and yams. With the onset of World War II, Japanese Americans living in California were relocated en masse to internment camps. While many individuals suffered financially from the hardships caused by this forced exile and the temporary suspension of their basic constitutional rights, some Japanese crop owners in the colonies placed their farms under a trusteeship of the legal firm of Ritchie, McLaughlin, and Griswald, which protected the colonists’ economic interests during the war (Cabezut-Ortiz 1987:67).

2.4.4 Franklin-Beachwood Community

The Franklin-Beachwood community began with the establishment of the Franklin School, which was a one-room schoolhouse established in 1896 adjacent to Highway 99 (Merced County Planning Department 1983:II-1). Development of the community was slow during the early twentieth century. Only a few structures and roads are depicted on the 1918 USGS Atwater topographic map during this period (USGS 1918). In 1948, the Franklin School was subsumed by the Merced School District, and the original schoolhouse was abandoned. The 1948 USGS quadrangle shows that Franklin School was moved north along Franklin Road and additional structures and roads were developed within the community at this time (Merced County Planning Department 1983:II-1). The 1960 USGS Atwater topographic map shows that major development took place during the 1960s, when there was an expansion of housing and the addition of a mobile home park along Beachwood Drive. Water infrastructure was established in 1965 by a special act of the California Legislature, which created the FCWD. By 1976, the FCWD WWTF ponds are shown along Black Rascal Creek. The Franklin-Beachwood community had a population 6,149 in 2010 and continues to grow with new housing, and this growth has prompted the proposed wastewater treatment expansion. Franklin-Beachwood remains an unincorporated community in Merced County.

3 METHODS

3.1 RECORDS SEARCH

On September 11, 2019, Æ requested a records search from the Central California Information Center (CCIC) of the California Historical Resources Information System (CHRIS) at California State University, Stanislaus. The records search encompassed the Project area and 0.5-mile surrounding area. CCIC staff examined site records, files, maps, and other materials to identify previously recorded resources and prior surveys. Other background research sources included the OHP Historic Property Directory and California Inventory of Historical Resources; historical maps on file at the CCIC; and General Land Office and/or rancho plat maps (Appendix B).

3.2 ARCHIVAL RESEARCH

Prior to the pedestrian survey, Æ conducted archival research to obtain information on the history of land use and to identify the potential for historic-era archaeological deposits to exist within the Project area. Æ reviewed and compiled information from various sources including:

- General Land Office Maps covering years 1855 (<https://glorerecords.blm.gov/default.aspx>);
- United States Geological Survey topographical maps spanning 1918 to 1975 (<https://ngmdb.usgs.gov/topoview/>); and
- Aerial photographs available through the Map Aerial Locator Tool (MALT) maintained by California State University, Fresno (<http://malt.lib.csufresno.edu/MALT/>).

3.3 NATIVE AMERICAN OUTREACH

On September 11, 2019, Æ sent an e-mail to the Native American Heritage Commission (NAHC) requesting a search of its Sacred Lands File and the contact information for local Native American tribal representatives who may have an interest in sharing information about the Project area and surrounding areas. The NAHC responded on September 17, 2019, with its findings and provided direction to contact several Native American tribal representatives who had cultural affiliation with the Project area. On October 3, 2019, Æ sent a letter describing the Project to each tribal representative asking for input regarding cultural resources in the Project area. As recommended by the NAHC, telephone follow-up occurred on October 18, 2019.

Sending information request letters and recording tribal responses are part of Æ's standard tribal outreach best practices for inventory reports and follows guidance provided by the NAHC. Æ's tribal outreach is not intended to fulfill NHPA Section 106 or Assembly Bill (AB) 52 Native American tribal consultation requirements, as government-to-government consultation between

the lead agency and tribal representatives would be necessary. A record of Æ's correspondence with the NAHC and tribal contacts is included in Appendix C.

3.4 PEDESTRIAN SURVEY

On September 13, 2019, Æ Associate Archaeologist Randy Ottenhoff and Staff Archaeologist Sairy Tobin conducted an archaeological and built environment survey of the 26.83-acre Project area. Æ surveyed the Project area for prehistoric and historic-era archaeological material and observed the environment within the immediate FWCD right-of-way for historic-era buildings, objects, or structures using a combination of intensive and nonintensive survey techniques. Intensive survey used parallel transects spaced 5–15 meters apart walked over areas of visible ground surface. Survey excluded private residential properties. Nonintensive survey included areas paved with concrete or asphalt. These areas were visually inspected from a vehicle. Æ staff took representative photographs of the Project area using an Olympus TG 860 digital camera and recorded observations on an Æ Survey Field Record. Staff also collected locational information using a Trimble Global Positioning System (GPS) unit. All photographs, field notes, and GPS data are on file at Æ's office in Fresno, California.

3.5 BURIED SITE SENSITIVITY ASSESSMENT

Æ conducted a geologic review of the Project area to identify the potential for buried cultural resources. Sources consulted include geological maps, historical maps, geologic/sediment databases, regional geoarchaeological studies, and soil surveys for the Project area. These sources provided information regarding the natural watercourses in the area as well as data about local soils and sediments, parent rock formations, and historical vegetation and land use. A review of this information fostered an understanding of hydrological and geological forces that may contribute to the formation of paleosols that have potential to contain buried archaeological deposits within the Project area. Soils data formed the basis of age estimations for soils in the Project area and provided information about percolation rate, depth of duripan, soil salinity, and alkalinity (pH level), which are key factors useful in predicting the potential for archaeological deposits to be encountered in primary context and the likely degree of artifact preservation. No subsurface testing was completed for this report.

4 RESULTS

4.1 RECORDS SEARCH

On September 17, 2019, the CCIC responded to Æ's records search request (Records Search File No. 11184I). The CCIC identified seven previous investigations conducted within the FCWD boundary and five of these intersect the Project area (ME-08148, -06858, -00672, -02972, and -03092). Four of the investigations were negative archaeological surveys, and one was a literature search that did not identify resources within the Project area. Twenty-seven investigations were identified within a 0.5-mile radius of the Project area (see Appendix B). None of the seven investigations within the FCWD boundary intersect with segments of the Project area identified for survey. One cultural resource, the Black Rascal Canal (P-24-001909, Merced Irrigation District), was identified within the FCWD boundary, however, the canal does not intersect the Project area. An additional 20 historic-era buildings or structures are recorded in the surrounding 0.5-mile area outside the FCWD boundary.

4.2 ARCHIVAL RESEARCH

Historical map and aerial imagery observations typically inform Æ surveyors about the Project area's historical background. This information is used to identify potential cultural resources or sensitive landforms that may contain cultural deposits within the Project area prior to survey. The archival results for the Project area did not identify any potential historic-era resources in areas identified for survey, although several historic-era structures in the surrounding 0.5-mile area were noted. Archival findings also provided an understanding of the historical development of the Franklin-Beachwood community between 1855 and the present, which is described in Section 2.4.4.

4.3 NATIVE AMERICAN OUTREACH

In its September 24, 2019, response to Æ's request, the NAHC stated that its search of the Sacred Lands File did not identify cultural resources of tribal importance in the Project area or surrounding 0.5-mile area (see Appendix C). The NAHC provided a list of tribal representatives from four tribes with ancestral ties to the region encompassing the Project area and recommended communication with these tribes to identify the location of any cultural resources with special importance to the tribe within the Project area. Æ contacted the following tribal representatives in writing on October 3, 2019:

- Chairperson Valentin Lopez of the Amah Mutsun Tribal Band;
- Chairperson Robert Ledger of the Dumna Wo-Wah Tribal Government;
- Chairperson Katherine Perez of the North Valley Yokuts Tribe; and
- Chairperson William Leonard of the Southern Sierra Miwuk Nation.

One response from Chairperson Robert Ledger was received during Æ's telephone follow-up on October 17, 2019. Chairperson Ledger requested a qualified professional archaeologist and tribal monitor selected by the Dumna Wo-Wah Tribe be present during all ground-disturbing construction activities, particularly in areas of proposed pond improvements, new pond or basin construction, and new pipeline installation. Chairperson Ledger also requested to be included in NHPA Section 106 and CEQA Assembly Bill 52 government-to-government consultation regarding the proposed Project. Æ responded with clarification that tribal outreach was for background research purposes only and was not part of NHPA Section 106 or AB 52 Native American tribal consultation. Æ has had no further contact with Chairperson Ledger. The FCWD is responsible for any follow-up consultation efforts with the Dumna Wo-Wah Tribe. No additional responses from other tribal representatives have been received to date.

4.4 PEDESTRIAN SURVEY

4.4.1 Ground Surface Visibility

The majority of the sewer pipelines proposed for replacement are discontinuous underground segments within the FCWD's right-of-way and are in paved roads, alleys, and the backyards of private residences in the community of Franklin-Beachwood (Figure 4-1). Paved roads had no ground surface visibility (Figure 4-2), but an unpaved alley off Drake Avenue afforded 30–80 percent visibility (Figure 4-3). The proposed percolation ponds are in a recently tilled agricultural field with 80–100 percent ground visibility at the time of survey (Figure 4-4). The corridor for the proposed pipeline that will transfer water to newly constructed ponds had 100 percent ground visibility (Figure 4-5).

4.4.2 Findings

Æ archaeologists conducted a pedestrian survey of all unpaved ground within the Project area. No evidence of prehistoric or historic-era archaeological sites, features, artifacts, or isolates were observed in areas of exposed ground surface in the Project area. Æ did not survey privately owned property between Wolf and Lance streets as the sewer segment ran beneath private backyards. Æ's survey of Pond 3 was partially obstructed due to water in the pond at the time of survey, but all areas consisting of unpaved roads around the pond and proposed pipeline corridors were surveyed (Figure 4-6). Complete survey coverage was achieved in the proposed pond areas north of the water treatment facility. Modern debris such as a toy truck lying on the ground and candy wrappers were observed in the proposed pond areas. No historic-era structures, buildings, or objects were observed within the Project. Intensive survey coverage was used for 23.61 acres (88 percent), nonintensive coverage encompassed 1.95 acres (0.07 percent), and 1.13 acres (0.04 percent) were not surveyed.

4.5 BURIED SITE SENSITIVITY ASSESSMENT

This section assesses the potential for intact buried archaeological deposits in the Project area to a maximum depth of 14 feet bgs and identifies the conditions affecting preservation of cultural materials, should any exist. Estimating the general sensitivity of soils to contain buried archaeological material is based on various factors, including the Project area's distance from water, age of geological deposits, landform, ground slope, and identification of soil types within the Project area and their respective characteristics (Rapp and Hill 2006; Waters 1992).

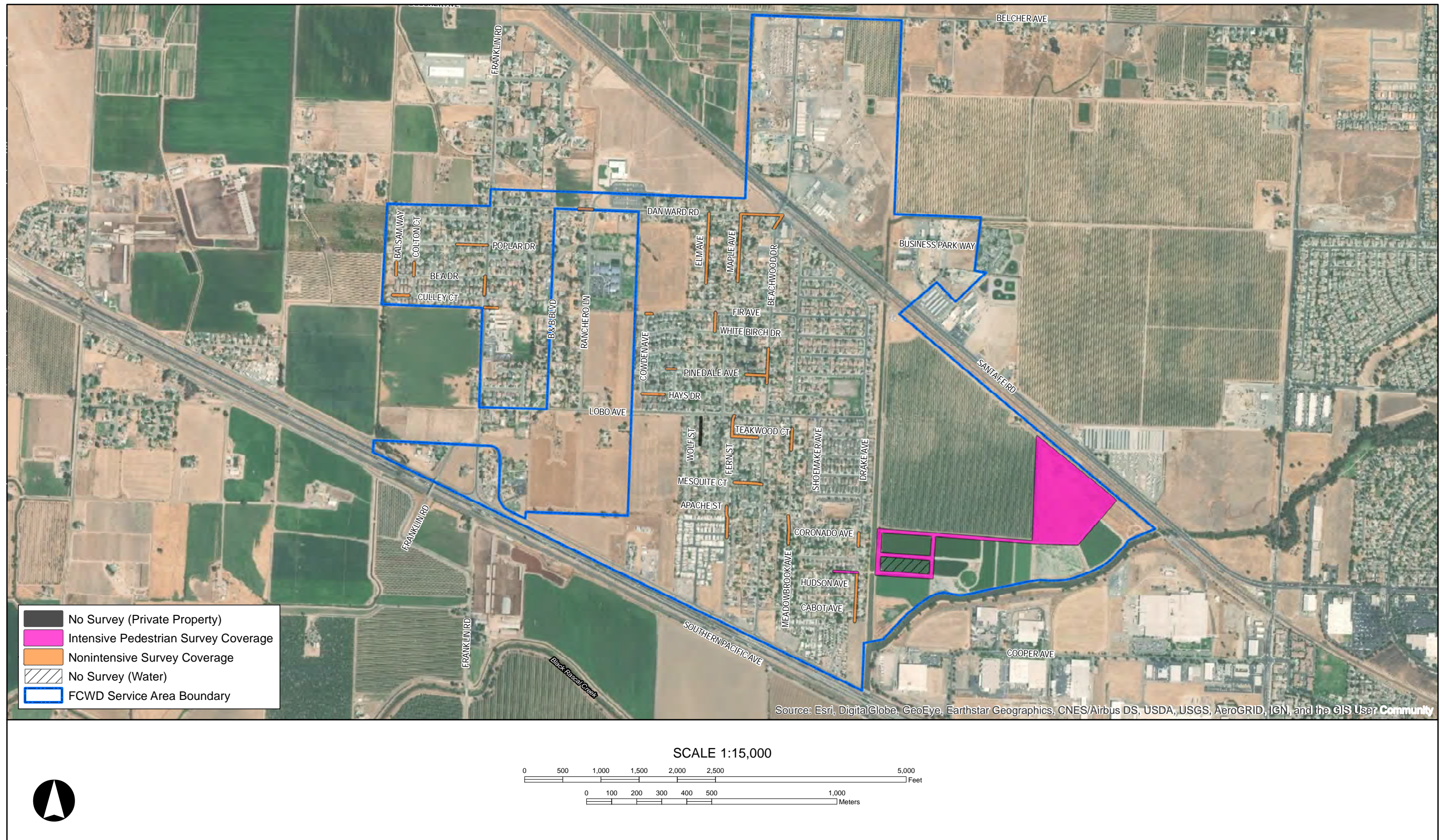


Figure 4-1 Survey coverage within the Project area.



Figure 4-2 Representative image of paved road segments in Project area; overview of Bea Court, looking east.



Figure 4-3 Alley perpendicular to Drake Avenue with 30–80 percent ground visibility, looking north.



Figure 4-4 Representative image of ground visibility within proposed pond areas, looking south.



Figure 4-5 Overview of Pond 3 with segment of proposed pipeline corridor visible in foreground, looking southeast.



Figure 4-6 Proposed pipeline corridor for transportation of influent water to Ponds 13, 14, and 15, looking south.

The potential for buried prehistoric resources increases with proximity to natural watercourses. Major water sources closest to the Project area are Black Rascal Creek, which is within the FCWD boundary and immediately adjacent to the Project area, and Bear Creek. Although not in the FCWD service area, Bear Creek is less than 0.5-mile south of the FCWD boundary and would have provided resources to consume as well as harvest for technological materials in prehistoric times. Other rivers in the vicinity include the Merced River, approximately 10 miles northwest of the Project area, and the Chowchilla River, which is approximately 15 miles southeast of the Project area. Smaller ephemeral freshwater sources, such as Black Rascal and Bear creeks, likely drew people to the area in prehistory for hunting and gathering activities as well as short- and long-term settlement.

4.5.1 Geomorphology and Hydrology

Geologically, the Project area is underlain by Tertiary (66–2.5 million years ago) and Quaternary (2.5 million years to present) deposits (Department of Water Resources 2004:2). The Project area lies within the San Joaquin River Hydrologic Region, San Joaquin Valley Groundwater Basin, Merced Groundwater Subbasin (MGS). This subbasin contains older and younger alluvial deposits derived from igneous, sedimentary, and metamorphic parent material dating from the middle to late Pleistocene (approximately 50,000–11,500 cal B.P.) and Holocene age (11,500 cal B.P. to present) (High Speed Rail Authority 2011; Meyer et al. 2010:32, 41). Radiocarbon studies of Pleistocene deposits associated with the Merced River demonstrate that deep alluvial sediments dating to the Holocene often cap Archaic and Early Period sites. Depositional events

do not appear to be associated with Tioga glacial advances. Instead archaeological sites of this time period, occurring at roughly 10,000 cal B.P., were subject to burial from gradual sediment deposition resulting from mass flood events and the incremental effects of wind, rain, and soil freeze/thaw patterns across millennia (Meyer et al. 2010; Rapp and Hill 2006). Mass flood events occurred infrequently during the Holocene (last 10,000 years) but have the greatest potential for rapid and complete burial of prehistoric landscapes. Meyer et al. (2010) and Onken (2019) have documented paleosols as deep as 35 feet bgs in the Central Valley region.

4.5.2 Landscape Chronology

The Project area is on an alluvial fan with old stream terraces near watercourses situated within floodplains (High Speed Rail Authority 2011). The area is relatively flat as a result of human modification and has an approximate 0–15 percent slope (High Speed Rail Authority 2011; Soil Survey Staff 2018a, 2018b, 2018c, 2018d, 2018e, 2018f). The Landlow soil series dominates the Project area and consists of clay and silty clay loam (Soil Survey Staff 2018a, 2018b). Secondary soil types in the Project area include San Joaquin Loam, Atwater loamy sand, Greenfield sandy loam, and Alamo clay (Soil Survey Staff 2018c, 2018d, 2018e, 2018f). The Landlow series is recorded to a maximum depth of 5 feet and is characterized as slightly alkali silty clay loam that increases in clay content with depth. A duripan is documented at approximately 6 feet 6 inches (Rodney et al. 1962:50, Soil Survey Staff 2018a, 2018b).

In general, all soils within the Project area are classified as slightly acidic to slightly alkaline with pH levels between 6.5 and 8.5 (0–2 millimhos per centimeter) (Rodney et al. 1962:29, 43, 51, 66). Most soils have a maximum recorded depth of 5 feet but may continue below this depth (Alamo Clay; 12–24 inches deep). All soils in the Project area have moderate to slow permeability with high runoff. These soil characteristics make the area a productive landscape for agricultural practices.

4.5.3 Potential for Buried Sites

Activities that can cause total or partial destruction of archaeological deposits include natural disasters such as mass flooding or earthquakes, bioturbation caused by ground-dwelling animals, and human activity such as infrastructural development or agricultural activities (e.g., plowing or using a disc cultivator). The latter have significantly modified soils in the Project area over the last century, both through mechanical disturbance and chemical additives that have been utilized to increase rooting depth of agricultural crops and water infiltration as well as prevent insect and fungal infestation of crops. All these actions can result in partial to complete loss of archaeological provenience along the vertical and/or horizontal axes.

Neutral and alkaline soils (pH 7 and higher) with low salinity tend to preserve all classes of archaeological materials, whereas acidic soils (pH 0–6) or well-drained soils with high saline content typically accelerate decomposition of organic materials and metal artifacts (Kibblewhite et al. 2015). Acidic soils with high to very high drainage often deteriorate and severely fragment bone and can fully dissolve organic materials such as basketry or cordage. In addition, long-term use of insecticides and fungicides, which is common in agricultural fields, intensifies the chemical breakdown of bone, shell, and other organic cultural deposits (Kibblewhite et al. 2015; Rapp and Hill 2006).

In general, given that the Project lies in proximity to several creeks and rivers, and is situated on older alluvial fans or along old stream terraces, there is moderate to high potential that prehistoric archaeological materials would be found deeply buried within the vertical Project area. However, if prehistoric cultural materials were to exist, the fact that much of the Project area has been subject to infrastructural development and agricultural activities for more than 100 years suggests poor preservation within an estimated depth of 0–6 feet bgs. Thus, the likelihood of discovering intact or well-preserved buried archaeological deposits between 0 and 6 feet bgs is low.

Below 6 feet 6 inches the duripan likely acts as a barrier that protects lower alkaline soils from rapid water percolation that would otherwise introduce acidic or chemical additives to deeper and older buried archaeological deposits. Thus, bone, shell, and other organic material may be moderately or well preserved (if present) in sediments 6 feet bgs and deeper. Paleosols at this depth have an unknown chronology, yet given the aforementioned rich hydrological system within the Project vicinity and likelihood of hunter-gatherer activities during the Archaic to Late Period, there could be potential for buried archaeological remains. Unfortunately, the available soils data do not allow for an assessment of preservation or presence of archaeological deposits without subsurface geoarchaeological testing to identify paleosols present below 6 feet. Therefore, the conclusion that there is low probability of encountering intact and well-preserved archaeological deposits below the ground surface is specific to the uppermost Project area (i.e., 0–6 feet bgs). However, Pond 3 will be excavated to 14 feet bgs. Thus, Æ recommends a Workers' Environmental Awareness Program (WEAP) be provided before ground-disturbing activities begin. A WEAP would provide construction workers and field supervisors with training in how to recognize archaeological materials and/or human remains during ground disturbing activities as well as provide a process for reporting inadvertent finds, should any occur during implementation of the Project.

5 SUMMARY AND RECOMMENDATIONS

Æ performed a historic properties inventory for the FCWD Sewer Rehabilitation Project in Merced County. The FCWD proposes to repair an aging sewer system by installing new sewer lines parallel to the existing lines and upgrading wastewater treatment facilities. As a subconsultant to QK Inc., Æ conducted a historic property inventory of the Project area to determine if archaeological or historical built environment cultural resources are present within the Project area. Accordingly, Æ performed background research, obtained a CHRIS records search from the CCIC, requested a search of the NAHC Sacred Lands File, completed outreach to local tribal representatives, assessed the sensitivity of soils in the Project area to contain buried cultural resources, and conducted an intensive pedestrian archaeological and built environment survey of the Project area.

The CCIC reported seven prior cultural studies in the FCWD boundary and 27 within the surrounding 0.5-mile area. One cultural resource, the Black Rascal Canal (P-24-001909) was identified within the FCWD boundary but is not in the Project area. Twenty previously recorded historic-era cultural resources are recorded outside the FCWD boundary in the surrounding 0.5-mile area (see Appendix B). No other cultural or tribal resources were identified in the Project area as a result of the NAHC Sacred Lands File search. Æ's buried site sensitivity assessment revealed that there is low probability of encountering well-preserved cultural deposits in primary context within 0–6 feet bgs in the Project area; however, due to a lack of subsurface data specific to the Project area there is potential for Project activities to disturb intact paleosols that may contain archaeological deposits below the duripan, especially during ground disturbing activities at Pond 3.

Consistent with federal and state statutes and regulations, Æ recommends that a Secretary of the Interior qualified archaeologist administer a WEAP prior to Project activities that would involve ground disturbance in previously undisturbed soils. The WEAP would be provided to all Project personnel who may be present during ground-disturbing activities. In addition, Æ recommends that in the event of a discovery of archaeological remains during Project development or ground-disturbing activities in the Project area, all work within 50 feet of the find should be halted until a qualified archaeologist can identify the discovery and assess its significance. In addition, if human remains are uncovered during construction, the Merced County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 requires that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendant, who will be afforded the opportunity to recommend treatment of the human remains following guidelines set forth in California PRC 5097.98.

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APPENDIX A

Personnel Qualifications

Areas of Expertise

- Cultural resource management
- Ethnography
- Tribal consultation
- Zooarchaeological, paleoethnobotanical, and lithics analysis

Years of Experience

- 19

Education

Ph.D., Anthropology/Feminist Studies, University of California, Santa Barbara, 2018

M.A., Anthropology (Archaeology/Cultural Resource Management emphasis), University of California, Santa Barbara, 2010

B.A., Anthropology, University of California, Santa Barbara, 2002

A.A., Liberal Arts and Sciences, Ventura College, 1999

Registrations/Certifications

- Registered Professional Archaeologist 39362477

Professional Affiliations

- American Anthropological Association
- American Cultural Resources Association
- Santa Barbara Museum of Natural History
- Society for American Archaeology
- Society for California Archaeology
- World Archaeological Congress

Professional Experience

2018–	Senior Archaeologist, Applied EarthWorks, Inc., Fresno, California
2015–2018	Interim Cultural Resources Supervisor and Senior Archaeologist/Ethnographer, Aspen Environmental Group
2007–2009	Archaeologist (GS-9), U.S. Department of Agriculture, Los Padres National Forest
2005–2007	Archaeologist (GS-7), U.S. Department of Agriculture, Los Padres National Forest
2004–2005	Archaeological Contractor, Padre, Inc., Ventura, California
2000–2005	Archaeologist (GS-4/5), U.S. Department of Agriculture, Los Padres National Forest

Technical Qualifications

Ms. Dyste has 19 years of experience in cultural resources management and meets the Secretary of the Interior's qualification criteria as an archaeologist and ethnographer. She has extensive experience preparing environmental documents and managing complex projects pursuant to applicable federal, state, and local regulations. Her work includes senior review or prime authorship of cultural resources documents for National Historical Preservation Act Section 106, National Environmental Policy Act, and California Environmental Quality Act compliance, including public and tribal comment and response; development of research designs; design and implementation of cultural resources plans. Ms. Dyste is qualified to conduct archaeological survey, including the supervision of small to large sized field crews, as well as zooarchaeological, paleoethnobotanical, lithics, and ethnographic analyses. She is able to analyze cultural spatial patterns via use of Total Station and Geographic Information Systems software. Ms. Dyste's Assembly Bill 52 and NHPA Section 106 tribal consultation services are informed by her knowledge and training in Native American jurisprudence, cultural sensitivity training, and graduate seminars in Native American environmental law, indigenous research methodologies, and community-based Participatory Action Research with tribal and special interest groups. She has project experience in coastal, highlands, grasslands, desert, and remote mountain settings across the state of California, although her academic region of specialty is in central and southern California with a focus on Salinan, Esselen, northern/interior/coastal Chumash prehistoric and modern political tribal groups. Ms. Dyste is a native Spanish speaker and assists clients with the translation of English to Spanish signage and public notices.

Areas of Expertise

- Cultural resource management
- Federal and California/Nevada regulations
- Design and implementation of pedestrian survey and subsurface site testing
- Rock art recordation and analysis
- Spatial analysis

Years of Experience

- 15

Education

Ph.D., Archaeology, University of Central Lancashire, 2015

B.A., Anthropology, University of California, Davis, 2004

A.A., Liberal Arts, American River College, Sacramento, 2001

Registrations/Certifications

- Registered Professional Archaeologist 17098
- Permitted Oregon Qualified Archaeologist

Professional Affiliations

- Society for American Archaeology
- Society for California Archaeology

Professional Experience

2018–	Associate Archaeologist, Applied EarthWorks, Inc., Fresno, California
2017–2018	Cultural Resource Specialist II, ICF, Sacramento, California
2016–2017	Cultural Resource Specialist II, HDR Engineering, Inc., Sacramento, California
2010	Field Technician, Chambers Group, LLC, Reno, Nevada
2007–2010	Field Archaeologist, Pacific Legacy, Sacramento, California
2007–2009	Staff Archaeologist, Abercrombie's Archaeology Consultants, Reno, Nevada
2006	Field Technician, ASM Affiliates, Reno, Nevada
2004–2007	Field Archaeologist, Kautz Environmental, Reno, Nevada

Technical Qualifications

Dr. Ottenhoff has 15 years of experience in cultural resources management and meets the Secretary of the Interior's qualification criteria as an archaeologist. He has extensive experience managing field projects pursuant to applicable federal, state, and local regulations for projects in the Sierra Nevada, including projects with historic-period artifact scatters and mines as well as prehistoric sites. Dr. Ottenhoff has served as sole and co-author of numerous technical reports, including Class/Phase I Inventory and Class III federal reports as well as letter reports summarizing the methods and results of project monitoring. He is familiar with National Historical Preservation Act Section 106, National Environmental Policy Act, and California Environmental Quality Act compliance, including public and tribal comment and response; development of research designs; and design and implementation of cultural resources plans. He is qualified to conduct archaeological survey, including the supervision of small to medium-sized field crews, as well as field and laboratory processing of artifact assemblages. Dr. Ottenhoff has project experience in coastal, highlands, grasslands, desert, and remote mountain settings across the state of California and is certified to conduct archaeological investigations in Oregon.

APPENDIX B

Records Search and Archival Research

*Archaeological site location information is exempt from the Freedom of Information Act (FOIA) and California Public Records Act (CPRA).



CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 9/17/2019

Records Search File No.: 11184I

Access Agreement: 116

Project: Franklin Water District

Diana T. Dyste
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

DDyste@appliedearthworks.com

Dear Ms. Dyste:

The Central California Information Center received your record search request for the project area referenced above, located on the Atwater 7.5' quadrangle in Merced County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCalC, the locations of resources/reports are provided in the following format: ☐ custom GIS maps ☒ shapefiles ☐ hand-drawn maps

Summary Data:

Resources within project area:	1 District: P-24-001909 (Merced Irrigation District) (no information or shape file provided as per your request)
Resources within ½-mi radius:	20: All historic-era structures or buildings (see Resource Database List, Detail and Spreadsheet, attached)
Reports within project area:	7: ME-00672, 2972, 3092, 6468, 6858, 7959, 8148
Reports within ½-mi radius:	27: ME-00630, 663, 693, 1799, 2759, 2915, 2930, 3995, 4009, 5173, 5419, 5498, 5499, 5500, 5501, 5924, 6034, 6169, 6230, 6345, 7319, 7352, 8025, 8026, 8284, 8541, 8663

Resource Database Printout (list):

Resource Database Printout (details):

Resource Digital Database Records:

Report Database Printout (list):

Report Database Printout (details):

Report Digital Database Records:

Resource Record Copies:

☒ enclosed ☐ not requested ☐ nothing listed

☒ enclosed ☐ not requested ☐ nothing listed

☒ enclosed ☐ not requested ☐ nothing listed

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Report Copies:☐ enclosed ☒ not requested ☐ nothing listed**OHP Historic Properties Directory:**☒ enclosed ☐ not requested ☐ nothing listed

RE: Bridges: P-24-000652, 653, 654

P-24-001881, 002047, 2106, 2108

Archaeological Determinations of Eligibility:☐ enclosed ☐ not requested ☒ nothing listed**CA Inventory of Historic Resources (1976):**☐ enclosed ☐ not requested ☒ nothing listed**Caltrans Bridge Survey:**☒ enclosed ☐ not requested ☐ nothing listed

State Bridges 39-0066, 67, 68

Local Bridge 39C-0025

Historical Literature:☐ enclosed ☐ not requested ☒ nothing listed**Historical Maps:**☒ enclosed ☐ not requested ☐ nothing listed

Atwater 7.5' (1948)

Atwater 15' (1961)

Atwater 7.5' (1960; PR 1976)

Local Inventories:☐ enclosed ☐ not requested ☒ nothing listed**GLO and/or Rancho Plat Maps:**☒ enclosed ☐ not requested ☐ nothing listed

T7S R13E, Sheet 44-476, 1852-1907

Shipwreck Inventory:☒ not available at CCIC; please go tohttp://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp**Soil Survey Maps:**☒ not available at CCIC; please go to<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office *(\$976.05), payable within 60 days of receipt of the invoice.

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: Laurie Marroquin CSU Stanislaus Financial Services
lamarroquin@csustan.edu

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-00630	NADB-R - 1361428	1980	Napton, L. K.	Cultural Resources Survey of Santa Fe Drive Between Buhach Road and Highway 59 in Merced County, California.	CSU Stanislaus for Merced Co. Department of Public Works	
ME-00663	NADB-R - 1361463	1978	Parker, J. W.	Archaeological Evaluation of a Proposed Road Widening Project of State Route 59 in Merced County, California. PM 15.3/16.1	Caltrans	
ME-00672	NADB-R - 1361476	1982	Peak & Associates, Inc.	Merced County Streams Project, California Intensive Cultural Resources Survey (Downstream Channel Improvements).	Peak & Associates, Inc., for USACE Sacramento District	
ME-00693	NADB-R - 1361488	1980	Swenson, L.	Archaeological Survey Report for Two Proposed Bridge Widening Projects and One Bridge Improvement Project in Merced County, California: 10-MER-99 PM 9.35 (Mariposa Creek), 10-MER-59 PM 16.01 (Black Rascal Creek) & PM 16.27 (Black Rascal Creek).	Caltrans District 10	
ME-01799	NADB-R - 1361464	1975	Peak, A. S.	Cultural Resource Assessment of the City of Merced Project for Land Disposal of Wastewater, Merced County, California.	Peak & Associates, Inc.	24-000234
ME-02759	NADB-R - 1366255	1995	Hatoff, B., B. Voss, S. Waechter, S. Wee, and V. Bente	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project; Final. [multivolume report]	Woodward Clyde Associates; for Mojave Pipeline Company	24-000084, 24-000085, 24-000086, 24-000087, 24-000088, 24-000089, 24-000090, 24-000091, 24-000092, 24-000093, 24-000094, 24-000095, 24-000096, 24-000097, 24-000110, 39-000064, 39-000065, 39-000074, 39-000075, 39-000077, 39-000078, 39-000079, 39-000080, 39-000081, 39-000082, 39-000083, 39-000084, 39-000085, 39-000086, 39-000087, 39-000088, 39-000089, 39-000090, 39-000091, 39-000092, 39-000093, 39-000094, 39-000095, 39-000096, 39-000097, 39-000098, 39-000099, 39-000100, 39-000101, 39-000102, 39-000103, 39-000104, 39-000105, 39-000106, 39-000107, 39-000108, 39-000109, 39-000112, 50-000063, 50-000070, 50-000071, 50-000072, 50-000073, 50-000074, 50-000075, 50-000076, 50-000077, 50-000078, 50-000079, 50-000080, 50-000083

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-02915	NADB-R - 1366246	1996	Jensen, P. M.	Archaeological Survey Report (ASR) - Negative, Proposed Tracy Fiberoptics Data Transmission Line. Caltrans Rights-of-Way at Six State Highway Crossings. Caltrans District 3, Portions of Merced, Stanislaus, San Joaquin, California	Jensen and Associates for North State Resources	
ME-02930	NADB-R - 1366248	1996	Jensen, Peter	Archaeological Inventory Survey; Tracy to Fresno Longhaul Fiberoptics Data Transmission Line, Portions of Fresno, Madera, Merced, Stanislaus, and San Joaquin Counties, California.	Jensen & Associates; for North State Resources, Inc.	39-000088, 39-000098, 39-000104
ME-02972	NADB-R - 1362852	1997	Napton, L. Kyle	Cultural Resource Investigations of the Proposed Merced Irrigation District, Atwater-Merced 115-kV Loop, Merced County, California.	CSU Stanislaus, Institute for Archaeological Research for Russell Associates	24-000088, 24-000089, 24-000090, 24-000091
ME-03092	NADB-R - 1362856	1997	Napton, L. Kyle	Cultural Resources Investigations of the Proposed Merced Irrigation District, Atwater-Merced 115-kV Loop, Merced County, California, Addendum 1: Cultural Investigations Along Revised Atwater-Merced Routes, Color Press Substation Add.	CSUS Institute for Archaeological Research for Russell Associates	
ME-03995	NADB-R - 1366234	2000	Nelson, W. J.	Cultural Resource Survey for the Level (3) Communications Long Haul Fiber Optics Project; Segment WS04: Sacramento to Bakersfield.	Far Western Anthropological Research Group, Inc., for Parsons Brinckerhoff Network Services	39-000002, 39-000321, 39-000354, 50-000001, 50-000439
ME-04009	NADB-R - 1363811	2000	Hibbard, C.	Negative Archaeological Survey Report. 10-MER-59, PM 16.2, 18.5, CU 10-170, EA 10-5C5000	Caltrans	
ME-05173	NADB-R - 1361471	2003	Baloian, M.	Cultural Resources Survey for the BNSF/Quebecor Rail Line Extension Project, Merced County, California.	Applied Earthworks, Incorporated	
ME-05419	NADB-R - 1365303	2002	Peak, M.	Department of Transportation Negative Archaeological Survey Report, 10-MER-59, P.M. 17; Fahrens Park Project.	Peak and Associates, Inc. for Caltrans	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-05498	NADB-R - 1366182	2004	Leach-Palm, L., P. Mikkelsen, J. King, J. Hatch, and B. Larson	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume I: Summary of Methods and Findings	Far Western Anthropological Research Group, Inc.; for Caltrans District 10	24-000076, 24-000082, 24-000147, 24-000434, 24-000488, 24-000568, 24-000569, 24-000574, 24-000575, 24-000634, 24-000639, 24-000733, 24-001641, 24-001643, 24-001679, 24-001685, 24-001703, 24-001782, 24-001787, 24-001800
ME-05499	NADB-R - 1365423	2004	Leach-Palm, L., J. King, J. Hatch, and B. Larson	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways, Merced County, California: State Routes 33, 59, 140, and 152; Volume I - Report and Appendices.	Far Western Anthropological Research Group, Inc., et al.; for Caltrans District 10	24-000076, 24-000082, 24-000147, 24-000434, 24-000488, 24-000574, 24-000575, 24-000634, 24-000639, 24-000733, 24-001641, 24-001643, 24-001679, 24-001685, 24-001703, 24-001782, 24-001787, 24-001800
ME-05500	NADB-R - 1365424	2004	Leach-Palm, L., J. King, J. Hatch, and B. Larson	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume II E: Merced County.	Far Western Anthropological Research Group, Inc., et al.; for Caltrans District 10	24-000076, 24-000082, 24-000147, 24-000434, 24-000488, 24-000574, 24-000575, 24-000634, 24-000639, 24-000733, 24-001641, 24-001643, 24-001679, 24-001685, 24-001703, 24-001782, 24-001787, 24-001800
ME-05501	NADB-R - 1366194	2004	Rosenthal, J. S. and J. Meyer	Cultural Resources Inventory of Caltrans District 10 Rural Conventional Highways; Volume III: Geoarchaeological Study	Far Western Anthropological Research Group, Inc.; for Caltrans District 10	24-000076, 24-000082, 24-000147, 24-000434, 24-000488, 24-000568, 24-000569, 24-000574, 24-000575, 24-000634, 24-000639, 24-000733, 24-001641, 24-001643, 24-001679, 24-001685, 24-001703, 24-001782, 24-001787, 24-001800, 24-001804
ME-05924	NADB-R - 1365861	2005	Kaptain, N. and B.	A Cultural and Paleontological Resources Study for Eight KB Home Projects, Stanislaus, Merced, Madera, and Tulare Counties, CA	LSA Associates	24-000552
ME-06034	NADB-R - 1365864	2006	Jones, K. and D. C. Young	Final Extended Phase 1 Report Geoarchaeological Investigations for the West Merced Overhead and Bear Creek Structures Replacement 10-MER-99 K.P. 25.4/27.8 (P.M. 15.8/17.3) EA : 10-0K0200, Merced County CA	Pacific Legacy, Inc. & PAR Environmental Services, Inc.	
ME-06169	NADB-R - 1366310	2006	Ray, B.	Historic Property Survey Report, West Merced / Bear Creek Structure Replacement, City of Merced, Merced County, California, 10-MER-99, P.M. 15.8/17.3, 10-0K0200	Caltrans	24-000097, 24-001854

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-06169		2006	Ray, B.	Archaeological Survey Report, West Merced/Bear Creek Structures Replacement, City of Merced, Merced County, California 10-MER-99, PM 15.8/17.3 10-0K0200	California Department of Transportation	
ME-06169		2005	Brady, J.	Historic Resource Evaluation Report, State Route 99, West Merced Overhead and Bear Creek Bridge Replacements, Merced County, CA KP 25.42/27.88, PM 15.8/17.3 EA: 10-0K020	California Department of Transportation	
ME-06230	NADB-R - 1366346	2006	Nettles, W.	Cultural Resources Survey for the Willow Creek Specific Plan/ EIR, City of Atwater, Merced County, California	Applied Earthworks, Inc.	24-000086, 24-000088, 24-000090, 24-001833, 24-001834, 24-001835, 24-001836, 24-001837, 24-001838, 24-001839, 24-001840, 24-001841, 24-001842, 24-001843, 24-001844, 24-001845, 24-001846, 24-001847
ME-06345	NADB-R - 1366575	2006	SWCA Environmental Consultants	Cultural Resources Final Report of Monitoring and Findings for the QWest Network Construction Project, State of California. SWCA Project No. 10715-180.	SWCA Environmental Consultants, for Qwest Communications	
ME-06468	NADB-R - 1366693	2007	Byrd, B. F., S. Waechter, M. Bunse, and M. Darcangelo	Archaeological Survey Report for the Atwater-Merced Expressway Project, Merced County, California	Far Western Anthropological Research Group, Inc.	24-000090, 24-000091, 24-000575, 24-000658, 24-001860, 24-001861, 24-001862, 24-001909
ME-06858	NADB-R - 1367124	2008	Holman, M. and R. Hellmann	An Archival Study to Identify Potential Cultural Resources Located in the City of Atwater General Plan and Program EIR Project Area, Merced County, California.	Holman & Associates, for Jerry Haag, Environmental Consultant, Berkeley, CA	24-001833
ME-07319	NADB-R - 1367646	2010	Gurdikian, B.	American Recovery and Reinvestment Act (ARRA) Funded Broadband Technology Opportunities Program Fiber Optic Network Infrastructure Project 2236 Franklin Road, Merced, Merced County, CA (NTIA100811F)	Level 3 Communications	
ME-07352	NADB-R - 1367693; OHP PRN - FHWA050324D	2005	U.S. Department of Transportation, Federal Highway Administration, and the State of California Department of Transportation.	16th Street/Olive Avenue Widening Project, Merced County, California, 10-MER-59, P.M. 15.3/16.6, OE5900; Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment.	U. S. DOT, FHWA, and Caltrans	24-000652, 24-000653, 24-000654, 24-001881, 24-002047, 24-002105, 24-002106, 24-002107, 24-002108, 24-002109, 24-002110, 24-002111, 24-002112, 24-002113, 24-002114, 24-002115, 24-002116, 24-002117, 24-002118

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-07959		2007	JRP Historical Consulting, LLC.	Historical Resources Inventory and Evaluation Report, Atwater-Merced Expressway Project, Merced California.	JRP Historical Consulting, LLC. For Merced County Association of Governments	24-000085, 24-000086, 24-000088, 24-000090, 24-000091, 24-000092, 24-000096, 24-000488, 24-000552, 24-000574, 24-000577, 24-000581, 24-000606, 24-000608, 24-001679, 24-001771, 24-001783, 24-001834, 24-001835, 24-001838, 24-001840, 24-001842, 24-001843, 24-001847, 24-001882, 24-001883, 24-001884, 24-001885, 24-001886, 24-001887, 24-001889, 24-001890, 24-001891, 24-001899, 24-001909, 24-002010, 24-002011, 24-002012, 24-002013, 24-002014, 24-002015, 24-002016, 24-002017, 24-002018, 24-002019, 24-002020, 24-002021, 24-002022, 24-002023, 24-002024, 24-002025, 24-002026, 24-002027, 24-002028, 24-002029, 24-002030, 24-002031, 24-002032, 24-002033, 24-002034, 24-002035, 24-002036, 24-002037, 24-002038, 24-002039, 24-002040, 24-002041, 24-002042, 24-002043, 24-002044, 24-002045, 24-002046, 24-002047, 24-002051, 24-002052
ME-08025	Caltrans - 10-MER-59 P.M. 15.3 / 16.6, 10-0E5900; Submitter - Caltrans District 10	2005	Gassner, Brian	Archaeological Survey Report for the Merced 59 Widening Project, Merced County, California, 10-MER-59, P.M. 15.3 / 16.6 (K.P. 24.6 / 26.7), 10-0E5900.	Caltrans District 10.	
ME-08026	Caltrans - EA 10-0E5900; OHP PRN - FHWA050324D	2005	Calpo, J.	Historic Resource Evaluation Report for the Road Widening Project, State Route 59, Merced 10-MER-59, PM 15.3/16.6 (KP 24.6/26.7) Merced County, EA 10-0E5900.	(By and for) Caltrans District 10	24-000652, 24-000653, 24-000654, 24-001881, 24-002047, 24-002105, 24-002106, 24-002107, 24-002108, 24-002109, 24-002110, 24-002111, 24-002112, 24-002113, 24-002114, 24-002115, 24-002116, 24-002117, 24-002118
ME-08148		2015	Napton, L. K.	Cultural Resources Investigations of the Proposed San Joaquin Valley Christian School Project, 55 Acres in Merced County, California	Historical Resources Consultant for Environmental Planning Partners	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ME-08284		2011	AECOM	Cultural Resources Inventory Report for the Central Valley Independent Network Fiber Optic Communications Network Project, California (Calaveras, Merced, San Joaquin, Stanislaus and Tuolumne Counties in the CCalC Area of Responsibility)	AECOM, for Central Valley Independent Network	
ME-08541		2016	Buitenhuys, C.	Archaeological Survey Report For the State Route 59 West Olive Roundabout in Merced, Merced County, California 10-MER-59 P.M. 16.0/16.2 EA:10-1E3500 E-FIS: 1015000106	Caltrans For U.S. DOT FHA	
ME-08663	Other - #9CAX002649/SF90X CVSFB; EBI 6116005102	2016	Supernowicz, D.	Archaeological Sensitivity Assessment, Mobilite Site #9CAX002649/SF90XCVSFB; EBI Project Number: 6116005102	EBI Consulting & Historic Resource Associates for Mobilite LLC	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-24-000088		Other - LG-18; Resource Name - Main Ashe Lateral/Inverted Siphon	Structure	Historic	HP20	1993 (JRP, Woodward-Clyde Consultants); 2006 (W. Nettles, Applied Earth Networks, Inc.); 2007 (Melvin, JRP Historical Consulting)	ME-02759, ME- 02972, ME-06230, ME-07959, SJ- 02759, ST-02759
P-24-000097		Other - SPM-29; Resource Name - Southern Pacific Railroad Line	Structure	Historic	AH07	1994 (JRP Historical Consulting, Woodward-Clyde); 1996 (L. Kyle Napton, CSUS/IAR); 2005 (C. Brewer and W. Konman, Caltrans)	ME-02759, ME- 04741, ME-04772, ME-04773, ME- 04776, ME-06169, ME-06659, ME- 08189, SJ-02759, ST-02759
P-24-000652		Resource Name - Bridge 39-66; OHP PRN - 5340-0010-0000; OHP Property Number - 056641	Structure	Historic	HP19	1979 (Carrol Pursell, UCSB/Calif. Inventory)	ME-07352, ME- 08026
P-24-000653		Resource Name - Bridge 39-67; OHP Property Number - 056642; OHP PRN - 5340-0011-0000	Structure	Historic	HP19	1979 (Carroll Pursell, UCSB/Calif. Inventory)	ME-07352, ME- 08026
P-24-000654		Resource Name - Bridge 39-68; OHP Property Number - 056643; OHP PRN - 5340-0012-0000	Structure	Historic	HP19	1979 (Carroll Pursell, UCSB/Calif. Inventory)	ME-07352, ME- 08026
P-24-001843		Resource Name - Parcel 19; Resource Name - MR3-9	Building, Structure	Historic	HP02; HP04; HP33	2006 (W. Nettles, Applied Earth Works); 2006 (Toffelmier and Kennedy, JRP)	ME-06230, ME- 07959
P-24-001881		Resource Name - Burlington Northern Santa Fe Railroad; Resource Name - Atchison, Topeka & Santa Fe Railroad; OHP Property Number - 130531; OHP PRN - FHWA050324D	Structure	Historic	HP11; HP37	2002 (F. Lortie, Caltrans District 10); 2009 (J. Smallwood, CRM Tech); 2018 (Wisely, Far Western)	ME-06955, ME- 07352, ME-08026, ME-08988
P-24-002023		Resource Name - MR4-7	Building	Historic	HP06	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002024		Resource Name - MR4-8;	Building	Historic	HP02	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002026		Resource Name - MR4-1	Building	Historic	HP02; HP33	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002027		Resource Name - MR4-2	Building	Historic	HP02; HP33	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002028		Resource Name - MR4-3	Building	Historic	HP02	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002029		Resource Name - MR4-4	Building	Historic	HP02	2007 (Toffelmier and Kennedy, JRP)	ME-07959
P-24-002030		Resource Name - MR4-5	Building	Historic	HP02	2007 (Toffelmier and Kennedy, JRP)	ME-07959

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-24-002041		Resource Name - MR4-6	Building	Historic	HP03; HP06	2007 (Toffelmier and Kennedy,	ME-07959
P-24-002047		Resource Name - Black Rascal Creek and Canal; OHP Property Number - 163829; OHP Property Number - 179673; Caltrans - Map Reference # 13 10-MER-59, PM 15.3/16.6; OHP PRN - FHWA050324D	Structure	Historic	AH06	2002 (F. Lortie, Caltrans District 10); 2006 (M. Bunse and S. J. Melvin, JRP Historical Consulting)	ME-07352, ME-07959, ME-08026
P-24-002048		Resource Name - Hesse Lateral	Structure	Historic	AH06	2007 (Melvin, JRP)	
P-24-002050		Resource Name - East Ashe Lateral	Structure	Historic	AH06	2007 (Melvin, JRP)	
P-24-002106		Resource Name - Highway 59, State Route 59; Caltrans - Map Reference No. 2, 10-MER-59, PM 15.3/16.6; OHP Property Number - 179594; OHP Property Number - 163816; OHP Property Number - 179672; OHP PRN - FHWA050324D	Structure	Historic	HP37	2002 (F. Lortie, Caltrans District 10)	ME-07352, ME-08026
P-24-002108		Resource Name - Irrigation features-two siphons, and former railroad berm; Caltrans - Map Ref. # 14, 10-MER-59, PM 15.3/16.6; OHP Property Number - 179681; OHP Property Number - 179676; OHP Property Number - 179682; OHP PRN - FHWA050324D	Structure, Site	Historic	AH07; HP20	2002 (F. Lortie, Caltrans District 10)	ME-07352, ME-08026

Map and Aerial Imagery Consulted

Date	Name	Author	Reference	Notes
1950	ABF-4G-33	Kern County, California, aerial survey	1950 Kern County, California, aerial survey No. 1950 ABF-4G-33, http://cdmweb.lib.csufresno.edu/cdm/singleitem/collection/aerial/id/656/rec/1 , accessed through Map and Aerial Locator Tool (MALT), Henry Madden Library, California State University, Fresno, September, 9 2019.	Residential development is noted along Beachwood Drive. The railroad is along the south side of Santa Fe road. Black Rascal Creek is noted adjacent to the current waste water facilities.
1918	Atwater CA 1:31,680	U.S. Geological Survey	1918 Atwater, CA. 1:31,680 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 9, 2019.	Franklin schoolhouse is noted beside historic Highway 99. Some houses exists throughout the community.
1948	Atwater, CA 1:24,000	U.S. Geological Survey	1948 Atwater, CA. 1:24,000 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 10, 2019.	The Franklin school is shown moved to rest alongside of Franklin Avenue. More development of the community is noted.
1956	San Jose, CA 1:250,000	U.S. Geological Survey	1956 San Jose, CA 1:250,000 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 9, 2019.	The Franklin-Beachwood community is not shown in detail.
1960 (1961 Ed)	Atwater, CA 1:24,000	U.S. Geological Survey	1960 (1961 Ed) Atwater, CA. 1:24,000 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 10, 2019.	Shown is a large expansion of the Franklin-Beachwood community. More houses are shown and the development of a trailer park is evident.
1960 (1963 Ed)	Atwater, CA 1:24,000	U.S. Geological Survey	1960 (1963 Ed) Atwater, CA. 1:24,000 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 10, 2019.	No change noted from the 1961 USGS map.
1960 (1978 Ed)	Atwater, CA 1:24,000	U.S. Geological Survey	1960 (1978 Ed) Atwater, CA. 1:24,000 scale. U.S. National Geologic Map Database, Historical Topographic Map Collection (TopoView), https://ngmdb.usgs.gov/topoview/ , accessed September 10, 2019.	The Franklin/Beachwood community has an increase of houses and the FCWD WWTF percolation ponds are shown north and immediately adjacent to Black Rascal Creek.
1/31/1853	T6S, R12E	General Land Office	1853 General Land Office Survey Plat, Township 6 South, Range 12 East, Mt. Diablo Meridian, DM ID 317133. U.S. Department of the Interior, Bureau of Land Management General Land Office Records, https://glorerecords.blm.gov , accessed September, 10 2019.E5	No roads, structures, or other infrastructure shown.
1/31/1855	T21S, R25E	General Land Office	1855 General Land Office Survey Plat, Township 21 South, Range 25 East, Mt. Diablo Meridian, DM ID 317135. U.S. Department of the Interior, Bureau of Land Management General Land Office Records, https://glorerecords.blm.gov , accessed September, 6 2019.	No roads, structures, or other infrastructure shown.
4/8/1957	ABF-1957 6T-116	U. S. Department of Agriculture, Agricultural Stabilization and Conservation Service	1957 Flight ABF-1957 6T-116 , Sacramento County, California, http://mil.library.ucsb.edu/ap_indexes/frameFinder/ , accessed through the University of California, Santa Barbara Library FrameFinder, Fresno, September 10, 2019.	No roads, structures, or other infrastructure shown.

APPENDIX C

Native American Outreach



Native American Outreach Log for the FCWD Sewer Rehabilitation Project

Organization	Name	Position	Letter	E-mail	Phone	Summary of Contact
Native American Heritage Commission	Nancy Gonzalez-Lopez	Staff Services Analyst		09/11/19		Request sent and response received 9/24/2019. The results of the Sacred Lands File were negative.
Amah Mutsun Tribal Band	Valentin Lopez	Chairperson	10/03/19		10/17/19	Outreach letter sent - RO; Follow-up phone call resulted in voice message. No response received -RO
Dumna Wo-Wah Tribal Government	Robert Ledger	Chairperson	10/03/19		10/17/19	Outreach letter sent - RO. Follow-up phone call resulted in conversation with Chairperson Robert Ledger. Tribe has concerns with new pipe being layed next to pre-existing pipe, the potential of prehistoric impacts during boring, the creation of the new ponds to five feet and the new depth of Pond 3 to 14 feet below the surface. The Chairperson asked for an A&E and tribal monitor to be present during all ground disturbing activity.- RO
North Valley Yokuts Tribe	Katherine Perez	Chairperson	10/03/19		10/17/19	Outreach letter sent - RO; Follow-up phone call resulted in voice message. No response received -RO
Southern Sierra Miwuk Nation	William Leonard	Chairperson	10/03/19		10/17/19	Outreach letter sent - RO; Follow-up phone call resulted in voice mailbox full and could not accept new messages. -RO

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
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West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: <http://www.nahc.ca.gov>
Twitter: @CA_NAHC



September 24, 2019

Diana Dyste
Applied Earth Works

VIA Email to: DDyste@appliedearthworks.com

RE: Franklin Water District Project, Merced County

Dear Ms. Dyste:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Nancy Gonzalez-Lopez".

Nancy Gonzalez-Lopez
Staff Services Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
Merced County
9/24/2019**

Amah Mutsun Tribal Band

Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley
Yokut

***Dumna Wo-Wah Tribal
Government***

Robert Ledger, Chairperson
2191 West Pico Ave.
Fresno, CA, 93705
Phone: (559) 540 - 6346
ledgerrobert@ymail.com

Foothill Yokut
Mono

North Valley Yokuts Tribe

Katherine Perez, Chairperson
P.O. Box 717
Linden, CA, 95236
Phone: (209) 887 - 3415
canutes@verizon.net

Costanoan
Northern Valley
Yokut

Southern Sierra Miwuk Nation

William Leonard, Chairperson
P.O. Box 186
Mariposa, CA, 95338
Phone: (209) 628 - 8603

Miwok
Northern Valley
Yokut
Paiute

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Franklin Water District Project, Merced County.



EXAMPLE

1391 W. Shaw Ave., Suite C
Fresno, CA 93711-3600
O: (559) 229-1856 | F: (559) 229-2019

October 3, 2019

Valentin Lopez, Chairperson
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA 95632

RE: Franklin County Water District Sewer Rehabilitation Project in Merced County, California

Dear Mr. Valentin Lopez,

Applied EarthWorks, Inc. (Æ), under contract to QK Inc. (QK), is providing cultural resource services for the Franklin County Water District (FCWD) Sewer Rehabilitation Project (Project) in Merced County, California. The Project will improve the existing FCWD sewer infrastructure through the systematic noninvasive repair and/or replacement of pipelines as well as expand the current wastewater treatment facility (WWTF). The sewer line is 21,723 feet long. The majority of the line will be abandoned in place and a new sewer line installed parallel to the existing line. The sewer system lies under street asphalt, beneath front yards, dirt-surfaced alleys within the County right-of-way. Some repairs may be accomplished without excavation using recent technology design while other sections of the sewer where connection to the former system is needed will be excavated. Proposed improvements at the WWTF is an aeration activated sludge facility constructed in a new earthen embankment in the western portion of the existing evaporation/percolation Pond 3. The basin will be excavated to increase the floor depth of Pond 3 from 4.7 feet to 14 feet below the ground surface. In addition, proposed new ponds (13, 14, and 15) will be built on approximately 20 acres of vacant agricultural land that lies to the north of Ponds 11 and 12. These ponds will be excavated to a depth of 5-feet for impounding wastewater.

The Project's Area of Potential Effects (APE) is in Sections 14, and 15, of Township 7S, Range 13E of the U.S. Geological Survey (USGS) Atwater 7.5-minute topographic quadrangle. Records searches at the Native American Heritage Commission (NAHC) and California Historic Resources Information System (CHRIS), however, used a more expansive search area based on the boundary of the FCWD (see Figures 1 and 2). The search of the NAHC Sacred Lands File did not indicate the presence of archaeological or tribal cultural resources in the FCWD or surrounding 0.5-mile area. A search of the CHRIS at the Central California Information Center (CCIC) identified no cultural resources in the APE and 22 previously recorded historic-era structures and buildings within the surrounding 0.5-mile area.

Æ completed an intensive archaeological and built environment survey on September 13, 2019. A pedestrian survey was used in all open and unpaved ground areas. In segments that are paved with no view of the underlying soils, the survey was conducted from a vehicle. No evidence of prehistoric or historic-era archaeological sites, features, artifacts, or isolates were observed in the APE.

The NAHC provided your name and address as someone who might have an interest in sharing information regarding sacred sites, tribal cultural resources, or other resources of importance in the APE. Please note that all information shared with Æ regarding this Project is considered best practices for cultural resource inventories and is not government-to-government consultation under Assembly Bill 52



or NHPA Section 106. Æ understands and takes measures to protect the confidentiality of archaeological site locations, cemeteries, or sacred places, as required by law. Æ will not disclose locational information in any document available to the general public.

If you would like to discuss information relevant to this Project, please contact Diana Dyste by phone (559) 229-1856 x23, email at ddyste@appliedearthworks.com, or send a letter to my attention using the address in the header above.

Sincerely,

Diana T. Dyste,
Senior Archaeologist

encl.: (2)

Figure 1 CHRIS and NAHC 0.5-mile map for the Franklin Water District Project

Figure 2 NAHC map for the Franklin Water District Project

APPENDIX C
BIOLOGICAL ASSESSMENT REPORT

BIOLOGICAL ANALYSIS REPORT - REVISED

FRANKLIN COUNTY WATER DISTRICT FRANKLIN COUNTY WATER DISTRICT REHABILITATION PROJECT



SEPTEMBER 2019



BIOLOGICAL ANALYSIS REPORT - REVISED

FRANKLIN COUNTY WATER DISTRICT REHABILITATION PROJECT

Prepared for:

Franklin County Water District
2126 North Drake Avenue
Merced, CA 95348
Contact Person: Brenda Way, General Manager
Phone: (209) 723-1353

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601 Pollasky Avenue, Suite 301
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September 2019

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ACRONYMS AND ABBREVIATIONS

BAR	Biological Analysis Report
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWHR	California Wildlife Habitat Relationships
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FCWD	Franklin County Water District
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
Project	Franklin County Water District Rehabilitation Project
QK	Quad Knopf, Inc.
SR	State Route
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WWTF	Wastewater Treatment Facility

EXECUTIVE SUMMARY

Quad Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential for sensitive biological resources to be impacted by proposed wastewater system improvements by the Franklin County Water District (FCWD) in Merced County, California.

The FCWD has proposed improvements to an existing wastewater collection and treatment system that will address aging infrastructure and prevent unsanitary conditions for an approximately 1.36-square mile service area including the unincorporated community of Franklin-Beachwood and surrounding area (Project). The FCWD service area consists of approximately 22,000 linear feet of sewer mains and approximately 67 acres of existing and future wastewater treatment facilities located on the southeast boundary of the FCWD. The proposed improvements to the sewer line consist of rehabilitating approximately 4,896 linear feet of sewer mains using trenchless construction methods, replacing approximately 16,827 linear feet of sewer mains using conventional construction methods, upgrading the existing wastewater treatment facility to add an extended aeration activated sludge facility, and constructing an additional percolation pond to increase the facility's disposal capacity.

Based on the results of a database and literature review and reconnaissance site visits conducted on December 6, 2016 and June 20, 2019, six special-status species were determined to have the potential to occur within the Biological Study Area: western pond turtle (*Actinemys [=Emys] marmorata*), American badger (*Taxidea taxus*), western burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillei*) and San Joaquin kit fox (*Vulpes macrotis mutica*). Of these, western pond turtle, western burrowing owl, Swainson's hawk, American badger and San Joaquin kit fox were determined to have the potential to be impacted by the Project. Direct impacts would be limited to injury or mortality of individual special-status species and or young during the breeding season. Habitat loss is also an identified direct impact but is expected to be negligible. No indirect impacts would occur because disturbance to surface habitats would be minimal. All construction work areas will be located within the existing roadway or will be previously paved except for the new wastewater treatment sludge facility, which will be located in grassland habitat adjacent to the wastewater treatment facility. The Project is not expected to impact any other sensitive resource, and would not conflict with local policies or ordinance, or conservation plans.

Avoidance and minimization measures are recommended which, when implemented, will reduce Project impacts to biological resources to a less than significant level.

SECTION 1 - INTRODUCTION

Quad Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential for sensitive biological resources to be impacted by the proposed Franklin County Water District Rehabilitation Project (Project). The Project, as proposed by the Franklin County Water District (FCWD), would provide wastewater system improvements for the unincorporated communities of Franklin and Beachwood and the surrounding area in Merced County, California.

1.1 - Project Location

The FCWD is located approximately one-mile northwest of the City of Merced in Merced County, California (Figure 1-1 and 1-2). The FCWD service area is bounded by a railroad line and agricultural lands to the north, the El Capitan Canal to the east, State Route (SR) 99 to the south, and agriculture to the west. The FCWD is located within Sections 10, 14, 15, 16, 22 and 23, Township 7 south, Range 15 east, Mount Diablo Base and Meridian.

1.2 - Project Description

FCWD owns and operates a districtwide sanitary sewer collection system that currently services approximately 1,706 connections, primarily residential. The system is comprised of approximately 78,309 linear feet of 6-, 8-, 10-, and 12-inch diameter clay and plastic PVC pipelines, 174 manholes, and 36 cleanouts. Portions of the FCWD sewer collection system are severely deteriorated and in need of replacement or rehabilitation.

The FCWD has proposed improvements to the existing wastewater collection and treatment system that will address aging infrastructure and prevent unsanitary conditions for an approximately 1.36-square mile service area including the unincorporated community of Franklin-Beachwood and surrounding area.

The proposed improvements to the sewer line consist of rehabilitating approximately 4,896 linear feet of sewer mains using trenchless construction methods, replacing approximately 16,827 linear feet of sewer mains using conventional construction methods, upgrading the existing wastewater treatment facility (WWTF) to add an extended aeration activated sludge facility, and constructing an additional percolation pond to increase the facility's disposal capacity. The segments of the sewer collection system recommended for replacement have been selected based on sorted National Association of Sewer Service Companies ratings and the condition of the existing sewer mains. Sewer mains will be replaced using the conventional construction method of dig and replace. Where possible, trenchless sewer rehabilitation will be employed using cured-in-place methods to reduce surface disturbance over traditional dig and replace methods, reduce the number of traffic and pedestrian detours, reduce the need for tree removal, decrease construction noise, and reduce air pollution from construction equipment. Spot repairs may be required to address additional defects in the sewer collection system that do not require full pipe replacement or rehabilitation.



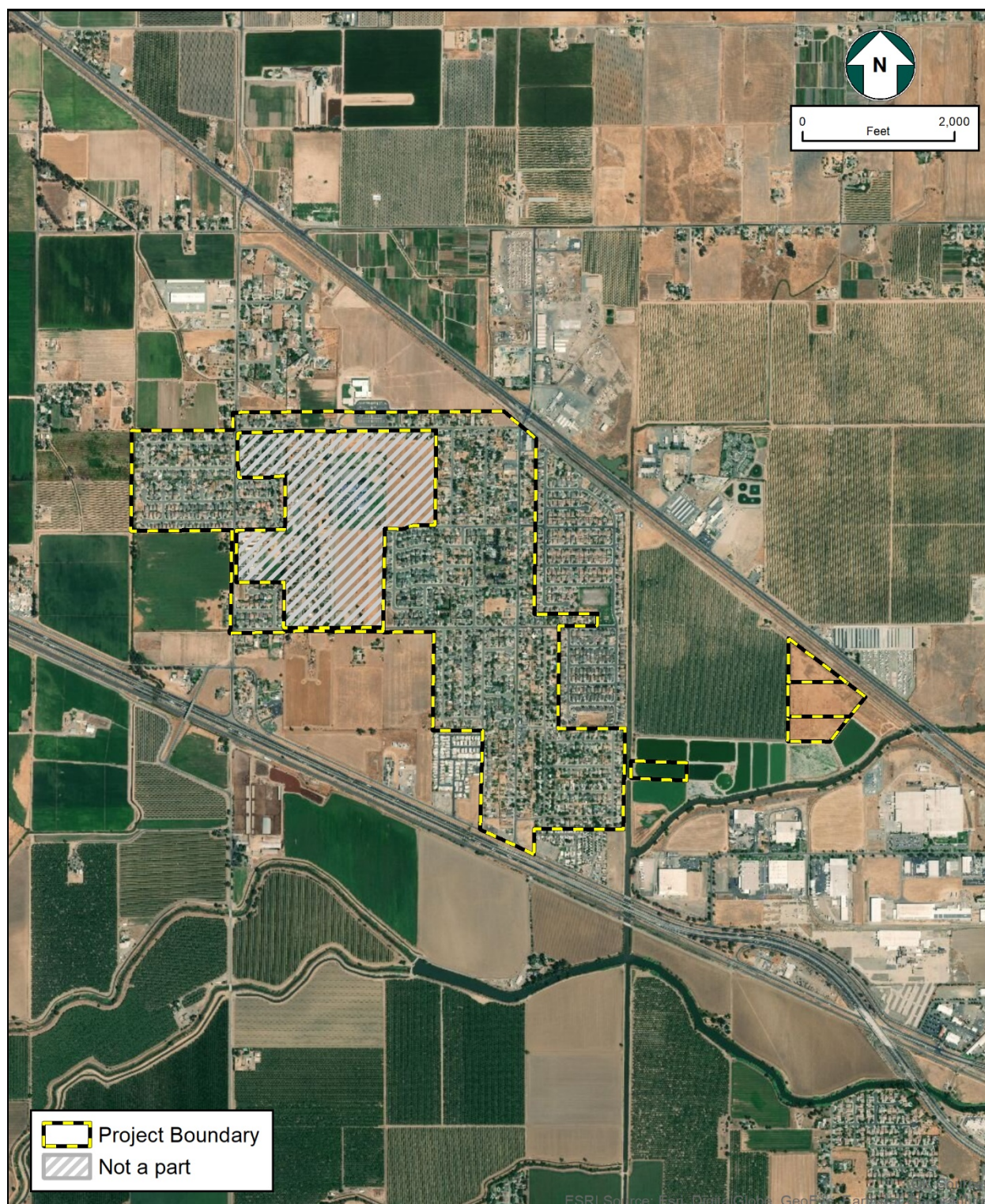


Figure 1-2
Project Location Map,
Franklin County Water District Rehabilitation Project,
Merced County, California



At the WWTF, existing evaporation/percolation Pond No. 3 will be decommissioned for the construction of a new extended aeration activated sludge facility. The existing lift station will remain in place. Approximately 51 linear feet of 12-inch pipe will be required to convey influent wastewater from the lift station to the aerated lagoon reactor. An inlet structure will be used to mix influent wastewater with return activated sludge before entering the proposed aerated lagoon reactor. Mixed liquor will flow across the aerated lagoon reactor and will enter a distribution box that will split flow between two clarifiers. Mixed liquor will settle in the clarifier and clear liquid will overflow into a peripheral weir channel and into the pump station. Settled sludge will be recirculated back to the aeration basin or wasted to a sludge drying bed. Treated effluent will be conveyed to the facility's evaporation/percolation ponds, including a new pond that will be constructed to increase the plant's disposal capacity from 0.4 million gallons per day to 0.44 million gallons per day.

Construction is anticipated to begin in April 2021 and would take approximately one year. Vehicles and equipment that may be needed to support the proposed wastewater system improvements could include:

- Forklifts
- Tractors/Loaders/Backhoes
- Concrete/Industrial Saws
- Excavators/Bulldozers/Loaders
- Plate compactors
- Signal Boards
- Air Compressors
- Cement and Mortar Mixers
- Cranes
- Generator Sets
- Welders
- Pavers
- Rollers

Staging/laydown for materials and equipment will primarily occur within the FCWD facility on the east side of the service area. Temporary staging may occur within the immediate vicinity of pipeline repair locations as needed. Staging for construction of the new percolation pond will occur within the same parcel or within the FCWD facility.

1.3 - Purpose, Goals, and Objectives

The purpose of this BAR is to identify where potential sensitive biological resources may occur within the Project site, determine how those resources may be impacted by the proposed Project, and recommend avoidance, minimization, and mitigation measures to reduce the potential for impact to a less than significant level. This BAR has been prepared to support an analysis of biological conditions as required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and to support regulatory permit applications, if needed.

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) used for this BAR includes everything within the limits of the Project boundary as shown in Figure 1-2.

2.2 - Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the Project,
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA),
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW),
- Other species included on the CDFW's Special Animals List,
- Plant species with a California Rare Plant Rank (CRPR) in categories 1 or 2,
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No.** Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Yes.** Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Protocol surveys were conducted, but negative results do not exclude the potential for a species to occur.
- **Present.** Species was observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on sensitive biological resources in the Project vicinity:

- CDFW's Biogeographic Information and Observation System (BIOS; CDFW 2019a)
- CDFW's California Natural Diversity Database (CNDDB; CDFW 2019b)
- CDFW's California Wildlife Habitat Relationships (CWHR) System Guide to Wildlife Habitats (Mayer and Laudenslayer 1988)

- CDFW's Special Animals List (CDFW 2019c)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2019)
- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation system (USFWS 2019a)
- USFWS Critical Habitat Mapper (USFWS 2019b)
- USFWS National Wetlands Inventory (NWI; USFWS 2019c)
- USGS National Hydrography Dataset (NHD; USGS 2019)
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2019)
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2019a)
- NRCS Lists of Hydric Soils (NRCS 2019b)
- Current and historical aerial imagery (Google LLC 2019, Netronline 2019)
- Topographic maps (USGS 2019)

For each of these data sources, the search was focused on the *Atwater, California* USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight (8) quadrangles. For the CNDDDB, an additional 10-mile search radius was queried.

The CNDDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDDB, but at a much lower spatial resolution. Much of the information in these databases is obtained opportunistically and is often focused on protected lands or on lands where development has been proposed. Neither database represents a comprehensive survey for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status resource could be present. Additionally, the NWI and Web Soil Survey provide comprehensive data, but at a low resolution requiring confirmation in the field.

The results of the database inquiries were reviewed to develop a list of sensitive resources that may be present within the vicinity of the Project. The existing conditions of the southeast corner of the BSA, were gathered from two reconnaissance site visits where three new WWTF sewer ponds are proposed to be located. The analysis was conducted using the findings of the current conditions found as well as using current and historic aerial imagery (Google LLC 2019). The list of sensitive resources was then evaluated against the existing conditions to determine which resources have the potential to occur, and then the potential for impacts to those resources as a result of implementation of the Project. A reconnaissance-level survey of the full BSA was not conducted because the Project is not proposing any new extensions to the existing sewer network. Only existing, compromised pipes will be repaired or replaced under the existing paved roadway, and no new or natural areas are anticipated to be impacted by Project activities.

2.4 - Reconnaissance-Level Field Surveys

Reconnaissance surveys of the WWTF expansion area were conducted via a combination of pedestrian and windshield surveys achieve 100% visual coverage. General tasks completed during the survey included:

- Characterizing vegetation associations and habitat conditions on the Project site;
- Determining if a formal delineation of wetlands and waters should be conducted;
- Inventorying plant and wildlife species occurring on and near the Project site;
- Assessing the potential for federally listed special status plant and wildlife species to occur on and near the Project site; and
- Assessing the potential for raptors and migratory birds to occur on and near the Project site.

SECTION 3 - REGULATORY SETTING

Regulated or sensitive resources that were studied and analyzed include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the Merced County General Plan).

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statutes are provided in Appendix A.

- CEQA
- FESA
- CESA
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- 2030 Merced County General Plan

SECTION 4 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. The environmental setting of the BSA was documented during reconnaissance site surveys conducted by QK biologists (Table 4-1).

Table 4-1. Field Survey Personnel and Timing.

Date	Personnel	Weather Conditions	Survey Type
12/6/2017	T. Schade	49°F to 53°F, calm breeze, fog	Reconnaissance
6/27/2019	C. Wingert	49°F to 86°F, breezy, partly cloudy	Reconnaissance

4.1 - Physical Characteristics

The Project is situated in a region dominated by agricultural and urban development on the eastern Central Valley floor. Land within the boundaries of the BSA has been developed for urban uses. Physical characteristics of the BSA are described below. Representative photographs of the BSA are included in Appendix B.

4.1.1 - TOPOGRAPHY

The BSA is located on the eastern floor of the Central Valley, west of the Sierra Nevada foothills. The topography of the Project is relatively flat with elevational ranges from roughly 155 to 170 feet above mean sea level.

4.1.2 - CLIMATE

The area where the BSA is located is characterized by a Mediterranean climate of hot summers and wet, mild winters. Average high temperatures range from 55°F in January to 97°F in July, with daily temperatures exceeding 100°F several days in the summer (WWRC 2019). Average low temperatures range from 35°F in December to 61°F in July. Precipitation occurs primarily as rain, most of which falls from November to April. Precipitation may also occur as a dense fog during the winter known as Tule fog. Rain rarely falls during the summer months.

4.1.3 - LAND USE

Land use surrounding the BSA is dominated by agriculture and scattered rural residences to the north, mostly undeveloped land to the east, SR 99 and agricultural lands to the south, and agricultural lands to the west (Google LLC 2019). Land within the BSA is primarily urban residential.

4.1.4 - SOILS

The BSA is underlain by seven soil types (Figure 4-1; NRCS 2019a).

Alamo Clay, 0 to 1 Percent Slopes

The Alamo series consists of moderately deep to hardpan, poorly drained soils that formed in alluvium from mixed sources (NRCS 2019a). Alamo soils occur in nearly level basins and drainageways on alluvial fan remnants and floodplains at elevations of 50 to 500 feet. They formed in fine textured alluvium mixed rock sources. The climate is dry subhumid with hot dry summers and cool moist winters. This soil is poorly drained, is ponded or with very slow runoff, and has very slow permeability. It is used mainly for pasture, but some areas are used for dry-farmed grains, or rice. Vegetation consists of annual grasses, forbs and weeds. This soil is considered hydric under category 2: map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that: a) based on the range of characteristics for the soil series, will at least in part meet one or more field indicators of hydric soils in the United States, or b) show evidence that the soil meets the definition of a hydric soil.

Atwater Loamy Sand, Deep Over Hardpan, 0 to 3 Percent Slopes

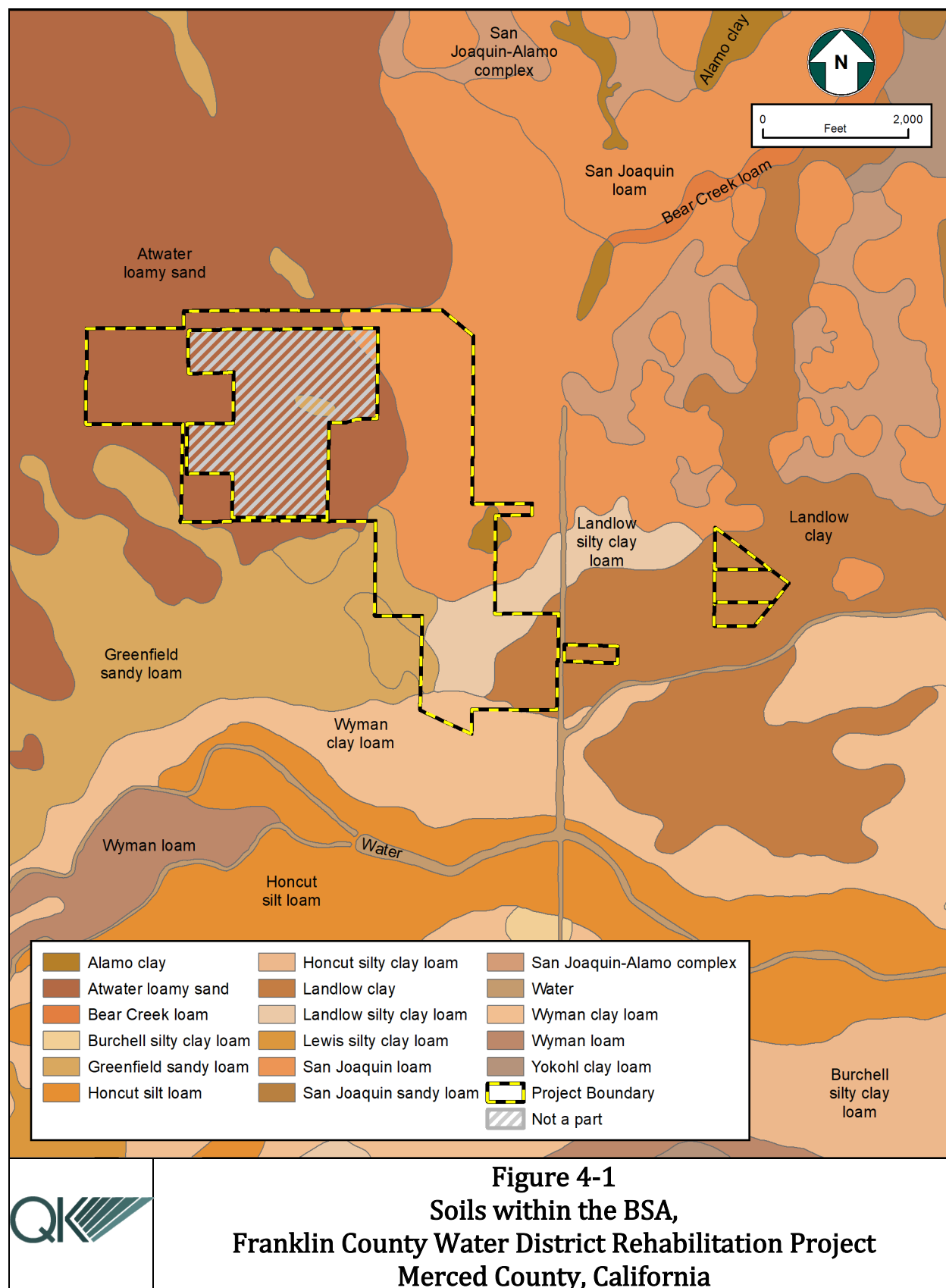
The Atwater series consists of very deep, well drained soils formed in granitic alluvium. Atwater soils occur on gently undulating to rolling dunes formed from granitic alluvium (NRCS 2019a). They occur at elevations of less than 500 feet, in a semiarid, mesothermal climate with mean annual rainfall of 9 to 20 inches, with hot, dry summers and cool, moist winters. This soil is well drained with moderately rapid permeability and slow runoff. These soils are used mainly for production of truck crops, grapes, tree fruits, nuts, grain, and alfalfa. Vegetation consists of annual grasses, weeds, and low-growing shrubs. This soil is not considered hydric (NRCS 2019b).

Greenfield Sandy Loam, Deep Over Hardpan, 0 to 3 Percent Slopes

The Greenfield series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources (NRCS 2019a). Greenfield soils are on alluvial fans and terraces at elevations of 100 to 3,500 feet. This soil is well drained and has slow to medium runoff. It is used for the production of a wide variety of irrigated field, forage and fruit crops, and also for dryland grain and pasture. The vegetation on uncultivated areas consists of annual grasses, forbs, some shrubs and scattered oak trees. This soil is not considered hydric (NRCS 2019b).

Greenfield Sandy Loam, Deep Over Hardpan, Poorly Drained Variant, 0 to 1 Percent Slopes

This soil type differs from the one above in that it is derived from granitic sources alone and is poorly drained (NRCS 2019a). This soil is considered hydric under category 4: map unit



components that are frequently flooded for long durations during the growing season that: a) based on the range of characteristics for the soil series, will at least in part meet one or more field indicators of hydric soils in the United States, or b) show evidence that the soils meet the definition of a hydric soil (NRCS 2019b).

Landlow Silty Clay Loam, 0 to 1 Percent Slopes

The Landlow series has dark grayish brown clay A horizons, dark grayish brown mottled (NRCS 2019a). This series has imperfectly drained soil. At the depth of 30 to 40 inches, it has a weakly lime-cemented hardpan that can be hard and nodular. This soil has moderate organic matter. Landlow soils are on nearly level basins of valley plains at elevations of 25 to 150 feet. They formed in moderately fine textured alluvium. The climate is subhumid, mesothermal with warm dry summers and cool moist winters. This soil has slow runoff and slow permeability. These soils are used for rice, field crops, row crops and housing. This soil is considered hydric under category 4: map unit components that are frequently flooded for long duration or very long duration during the growing season that: a) based on the range of characteristics for the soil series, will at least in part meet one or more field indicators of hydric soils in the United States, or b) show evidence that the soils meet the definition of a hydric soil (NRCS 2019b).

Landlow Clay, 0 to 1 Percent Slopes

The Landlow series has dark grayish brown clay A horizons, dark grayish brown mottled (NRCS 2019a). Landlow soils are on nearly level basins of valley plains at elevations of 25 to 150 feet. They formed in moderately fine textured alluvium. The climate is subhumid, mesothermal with warm dry summers and cool moist winters. This soil has slow runoff and slow permeability. These soils are used for rice, field crops, row crops, and housing. This soil is considered hydric under category 4: map unit components that are frequently flooded for long durations during the growing season that: a) based on the range of characteristics for the soil series, will at least in part meet one or more field indicators of hydric soils in the United States, or b) show evidence that the soils meet the definition of a hydric soil (NRCS 2019b).

San Joaquin Loam, 0 to 3 Percent Slopes

The San Joaquin series consists of well and moderately well drained soils that formed in alluvium derived from mixed but dominantly granitic rock sources and is moderately deep to a duripan (NRCS 2019a). This soil type occurs on undulating low terraces with slopes of 0 to 9 percent. San Joaquin soils are on hummocky, nearly level to undulating terraces at elevations of about 20 to 500 feet. Some areas have been leveled. They formed in alluvium from mixed but mainly granitic rock sources. The climate is dry with hot dry summers and cool moist and foggy winters. Well and moderately well drained. Some areas are subject to rare or occasional flooding. It is used for cropland and livestock grazing. This soil is considered hydric under category 4: map unit components that are frequently flooded for long duration or very long duration during the growing season that: a) based on the range of characteristics for the soil series, will at least in part meet one or more field indicators of

hydric soils in the United States, or b) show evidence that the soils meet the definition of a hydric soil (NRCS 2019b).

Wyman Clay Loam, 0 to 3 Percent Slopes

Wyman Clay Loam is a well-drained soil that formed from alluvium derived from volcanic rock on nearly level to strongly sloping terraces and alluvial fans (NRCS 2019a). It is not prone to flooding or ponding. Wyman soils are found at elevations below 2,500 feet in association with Mediterranean climates. This soil type is used extensively for orchards and grains fields. This soil type is not considered hydric (NRCS 2019b).

4.1.5 - HYDROLOGY

One ponding basin is located within the Project boundary; this is WWTF evaporation/percolation Pond No. 3, which will be decommissioned. This pond is mapped by the NWI as L1UBKx, for excavated and artificially flooded limnetic lakes with an unconsolidated bottom (USFWS 2019c; Figure 4-2). Other WWTF ponds are located adjacent to the Project boundary.

There are four NWI-mapped drainages that occur within the Project or along the Project perimeter (Figure 4-2). Each of these drainages are classified as R5UBFx for riverine features that are excavated, are semipermanently flooded but have unknown perennial flows, and have an unconsolidated bottom. One of these drainages parallels Santa Fe Road where the new WWTF ponds are proposed (USFWS 2019c). This drainage is not actually within the Project boundary but is immediately adjacent. This drainage may connect to Black Rascal Creek, which appears to connect with Bear Creek.

A second drainage, shown to occur along a dirt road to the west of the existing WWTF ponds, was confirmed to no longer be functionally present during the June 2019 site visit (Quad Knopf, Inc. 2019; Appendix C).

A third drainage is shown to occur along Lobo Avenue in a portion of the area where land is still in agricultural use, but that drainage was placed into a pipe prior to 1998 where homes now occur near the intersection of Lobo Avenue and Beachwood Drive (Google LLC 2019, USFWS 2019c, USGS 2019; Figure 4-2).

The fourth drainage that is shown along the westernmost Project boundary is still present according to aerial imagery (Figure 4-2). This drainage appears to connect to the Hesse Lateral, which appears to flow into the Hinds Lateral and into Bear Creek (USGS 2019). Bear Creek crosses the East Side Canal and eventually connects to the San Joaquin River.

The BSA is located within a FEMA 0.2% annual chance flood hazard zone in the northern portion of the Project site and located within a FEMA 1% annual chance flood hazard zone in the southern and eastern portion, as well as the western edge of the Project site (FEMA 2019; Figure 4-3).

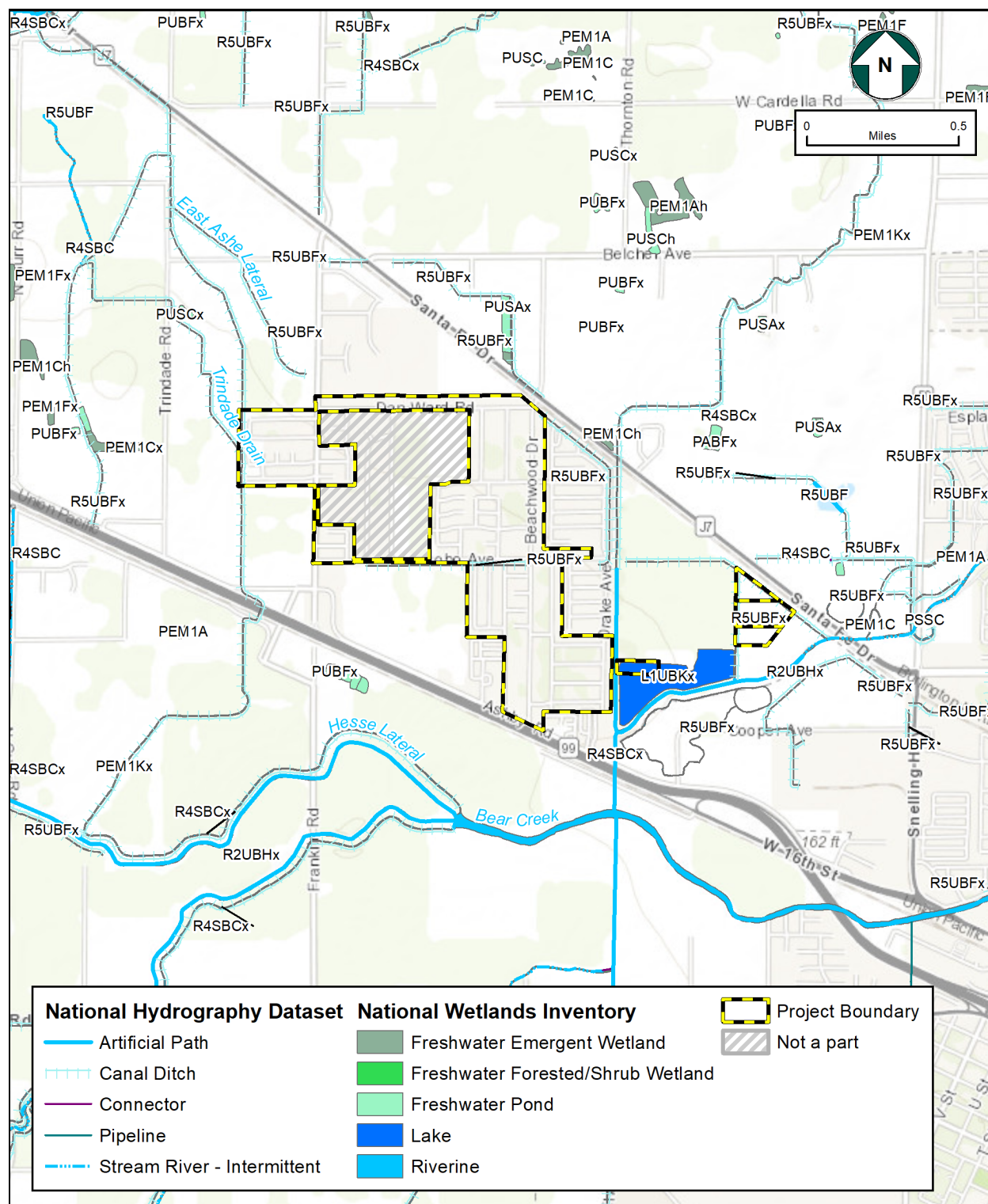


Figure 4-2
NWI and NHD Records of Aquatic Resources,
Franklin County Water District Rehabilitation Project,
Merced County, California

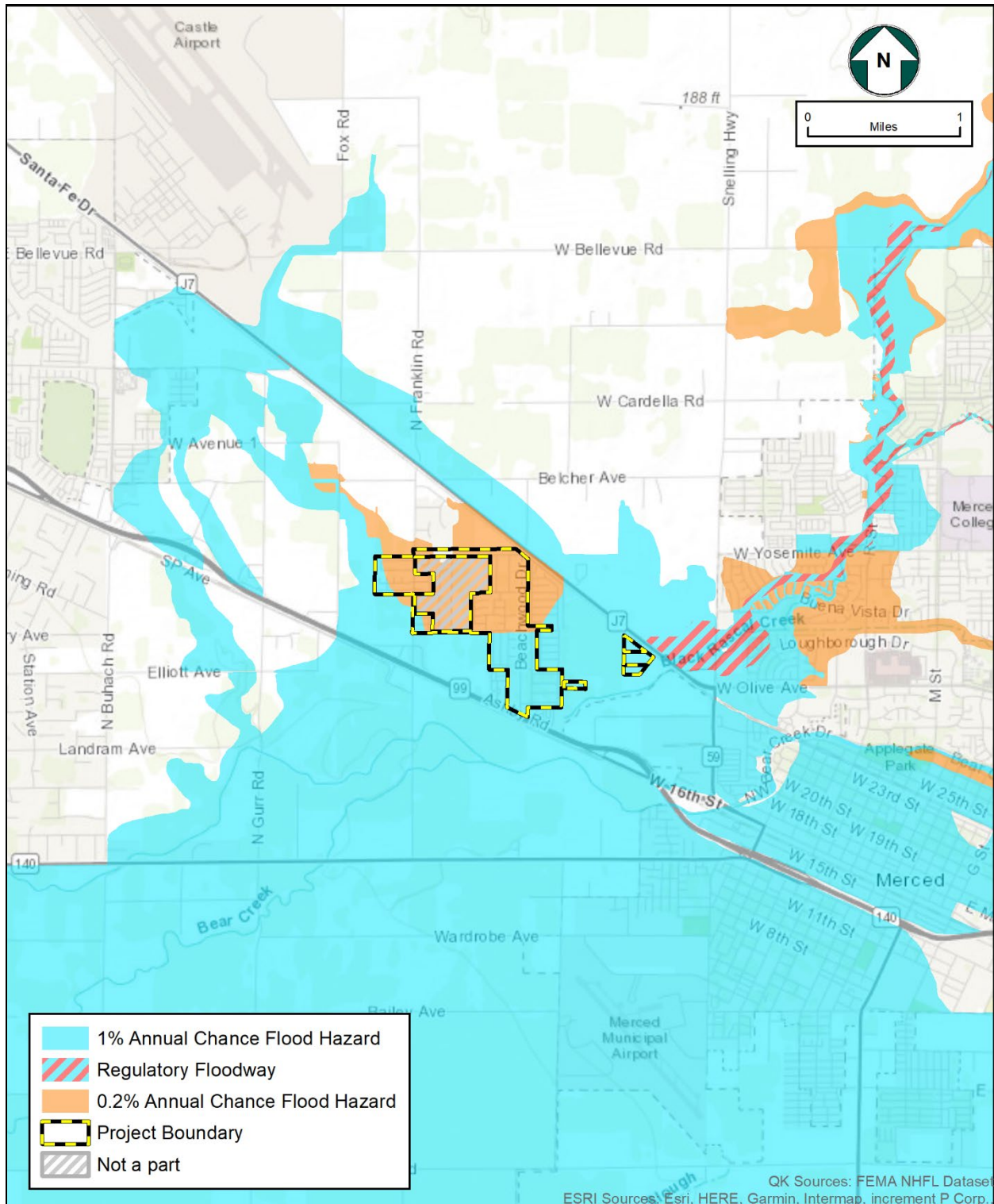


Figure 4-3
FEMA Flood Zones,
Franklin County Water District Rehabilitation Project,
Merced County, California



4.2 - Vegetation and Other Land Cover

Four CWHR habitat types are present within the BSA: urban, annual grassland, riverine, and lacustrine (Mayer and Laudenslayer 1988). The riverine and lacustrine habitats were described above in Section 4.1.5. The remaining two are described below.

Urban

Urban is a subcategory of Developed Habitats in the CWHR. The majority of the BSA is comprised of urban habitat, which includes paved roads and parking lots, residences, commercial and industrial buildings (and associated dirt parking lots where present), parks, schools, and the railroad corridor. Vegetation commonly associated with this habitat includes ornamental herbs (grass lawns and weeds), shrubs, hedges, and trees.

Annual Grassland

Annual grassland habitat is most prominent in the eastern most portion of the site adjacent to the existing WWTF. Other small pockets of annual grassland existing on the periphery of the BSA, usually where agricultural fields have been fallowed. Annual grassland habitats within the Project site have been previously disturbed. Within the grassland habitat adjacent to the WWTF is an approximately 12-foot tall stockpile of dirt that has been overgrown with grasses and forbs. The site had been plowed in recent months, except for the stockpile, likely for fire control. Annual grasslands are dominated by non-native grasses and may contain scattered forbs. Species observed near the WWTF included, but was not limited to, wild oats (*Avena fatua*), ripgut (*Bromus diandrus*), hairy leaved sunflower (*Helianthus annuus*), yellow starthistle (*Centaurea solstitialis*), and fiddleneck (*Amsinckia* sp.). A complete list of plants observed is provided in Appendix D.

4.3 - General Wildlife Observations

Wildlife observed near the WWTF included gull (*Larus* sp.), great egret (*Ardea alba*), killdeer (*Charadrius vociferus*), spotted sandpiper (*Actitis macularius*), Canada goose (*Branta canadensis*), great blue heron (*A. herodias*), bufflehead (*Bucephala albeola*), black-necked stilt (*Himantopus mexicanus*), double-crested cormorant (*Phalacrocorax auritus*), song sparrow (*Melospiza melodia*), American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*) and house finch (*Haemorhous mexicanus*). Species such as house finch, house sparrow (*Passer domesticus*), scrub jay (*Aphelocoma californica*), mourning dove (*Zenaida macroura*), opossum (*Didelphis virginiana*), and coyote (*Canis latrans*) commonly occur in urban areas.

SECTION 5 - SENSITIVE BIOLOGICAL RESOURCES

Local, state, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence to be on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed on the project site and evaluates the potential for the project site to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDDB and CNPS, species occurrence records from other sites in the vicinity of the survey area, previous reports for the Project site, and the results of surveys of the Project site. The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Potential.** Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Protocol surveys were conducted, but negative results do not exclude the potential for a species to occur.
- **Present.** Species was observed on the site or has been recorded (e.g., CNDDDB, other reports) on the site recently (within the last 5 years).

The results of this evaluation are provided in Appendix E.

5.1 - Special-Status Species

Table 5-1 presents the list of special-status plant and animal species determined to have potential to occur on-site and identifies if the Project may affect the species and threaten the viability of the species population. Those species with potential to be affected by the Project are discussed in the subsections below.

Table 5-1
Special-Status Species with Potential to Occur On-Site

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected by Project? Yes/No	Viability Threat? Yes/No
Reptiles			
<i>Actinemys [=Emys] marmorata</i> western pond turtle	-/- SSC	No	No
Birds			
<i>Athene cunicularia</i> burrowing owl	-/- SSC	Yes	No
<i>Buteo swainsoni</i> Swainson's hawk	-/ST -/-	Yes	No
Mammals			
<i>Eumops perotis californicus</i> western mastiff bat	-/- -/SSC	Yes	No
<i>Lasiurus blossevillii</i> western red bat	-/- -/SSC	Yes	No
<i>Taxidea taxus</i> American badger	-/- -/SSC	Yes	No
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST -/-	Yes	No

Source: CDFW 2019b 2019d, 2019e, USFWS 2019b

FE Federally Endangered
ST State Threatened
SSC State Species of Special Concern

5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified 31 special-status plant species known to occur or with potential to occur within the vicinity of the Project (Appendix E). None of those species were determined to have a potential to occur within the BSA based on the habitat conditions observed during the reconnaissance site visit and in aerial imagery.

5.1.2 - SPECIAL-STATUS ANIMAL SPECIES

The literature review identified 38 special-status animal species known to occur or with potential to occur in the vicinity of the project (Appendix E). Of those, six species were determined to have the potential to occur on-site:

- **Western pond turtle** (*Actinemys [=Emys] marmorata*) – State Species of Special Concern
- **Burrowing owl** (*Athene cunicularia*) – State Species of Special Concern

- Swainson's hawk (*Buteo swainsoni*) – State Endangered
- Western mastiff bat (*Eumops perotis californicus*) – State Species of Special Concern
- Western red bat (*Lasiurus blossevillii*) – State Special Status Species
- San Joaquin kit fox (*Vulpes macrotis mutica*) – federally Endangered, State Threatened

Western Pond Turtle**ACTINEMYS [=EMYS] MARMORATA**

Status: State Species of Special Concern

Western pond turtles are highly aquatic and diurnally active, and are found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky/muddy bottoms (Nafis 2019, Zeiner et al. 1990). A key component of suitable habitat for this species is basking areas near water, such as logs, rocks, vegetation mats, and vegetated banks. Western pond turtles are primarily found in freshwater but may enter brackish water and even seawater. They dig nests for egg-laying on land near water. The species is found throughout much of California, ranging from north of San Francisco Bay area southward, including the Central Valley. Threats to the species include habitat loss, degradation, and fragmentation, particularly as aquatic habitats become developed or otherwise disturbed. Repeating drought conditions in California potentially lead to local extirpations, sometimes with little potential for natural recolonization, leading to a concern for the continued existence of this species in some areas.

Within the BSA, habitat that may support western pond turtles is limited to the existing drainages and the WWTF. The WWTF provides the most stable and permanent source of aquatic habitat. Western pond turtles have been documented living at sewage treatment facilities in the San Joaquin Valley (Germano 2010) and the proximity of the WWTF to Black Rascal Creek increases the potential for this species to occur in the WWTF ponds.

Western Burrowing Owl**ATHENE CUNICULARIA**

Status: State Species of Special Concern

Western burrowing owls are found throughout much of California, primarily in arid and semi-arid habitats, including deserts (Poulin et al. 2011, Zeiner et al. 1990). Burrowing owls are the only species of owl in North America that use subterranean burrows for nesting and shelter. They prefer open habitats with few scattered shrubs or trees. Burrows used by this species are created by other fossorial mammals, especially California ground squirrels (*Otospermophilus beecheyi*). They are also the most diurnally active owl in North America, with peak activity levels during the crepuscular periods (dawn and dusk). Burrowing owls are known to occur in developed habitats, including urban and agricultural habitats, provided there are burrows available in relatively undisturbed areas (e.g., canals, drainage basins, abandoned railroad tracks). They consume primarily small rodents and insects, with rodents being particularly important during the breeding season. Diet will vary based on habitat conditions; the species has been observed hunting bats around parking lot light poles

at night (Hoetker and Gobalet 1999). Primary threats to burrowing owls include habitat loss, degradation, and fragmentation, particularly where burrows are present (Poulin et al. 2011, Zeiner et al. 1990). Use of pesticides to reduce rodent and insect populations may threaten burrowing owls in urban and agricultural habitats caused by secondary poisoning transferred through their prey.

The nearest occurrence was recorded in 2007 less than three miles to the south at the Merced Municipal Airport (EONDX 70100; CDFW 2019b). The species is presumed extant in the area. Within the BSA, suitable habitat for burrowing owls is limited to the WWTF and adjacent grassland habitat, and possibly other drainage canals depending upon the level of disturbance from humans and domestic animals.

Swainson's Hawk

BUTEO SWAINSONI

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard et al. 2010, Zeiner et al. 1990). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging, and have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity for successful nest sites.

The nearest recorded occurrence was of a 2008 observation of a nest in a eucalyptus (*Eucalyptus* sp.) along Trinidad Road, less than 0.25 mile from the BSA (EONDX 83238; CDFW 2019b). Based on review of aerial imagery and information from the initial site visits, there are trees that could support nesting Swainson's hawks. These trees are mostly on the periphery of the BSA and further beyond. The annual grassland adjacent to the WWTF could support foraging, and there is ample foraging habitat throughout the vicinity on grassland and dryland grand fields.

Western Mastiff Bat

EUMOPS PEROTIS CALIFORNICUS

Status: State Species of Special Concern

Western mastiff bats occur in open, semi-arid to arid habitats, and urban habitats, throughout the southeastern San Joaquin Valley and Coast Ranges from Monterey County southward (Zeiner et al. 1990). They feed primarily on insects captured in flight. Roosts typically include cliff faces, high buildings, trees, and tunnels. Nursery roosts are most often found in tight crevices in rocks or buildings. Maternity season begins in March and generally ends in September.

The nearest occurrence was recorded in 1991 less than two miles to the east in the city of Merced (EONDX 66400, CDFW 2019b). The species is presumed extant in the area. Within

the BSA, there may be suitable day and night roosts in some of the larger trees, though nursery roost options are lacking.

Western Red Bat***LASIURUS BLOSSEVILLII***

Status: State Species of Special Concern

Western red bats are locally common from Shasta County south to the Mexican border, west of the Sierra Nevada and Cascade crests (Zeiner et al. 1990). They migrate between summer and winter ranges but may be found year-round in the Central Valley. They are most often found in forests and woodlands from sea level up through mixed conifer forest but are not found in deserts. Western red bats feed on insects over grasslands, shrublands, croplands, and open areas in forests and woodlands. They roost primarily in trees on the edges of habitats near streams, fields, or urban areas. They also require water. Their maternity season is from May through July.

The nearest occurrence was recorded nearly 10 miles from the BSA, about 1.3 miles south-southeast of Four Corners, in 1999 (EONDX 69746, CDFW 2019b). Within the BSA, trees on the periphery may provide suitable roost habitat, and there is suitable foraging habitat in the annual grassland adjacent to the WWTF.

American Badger***TAXIDEA TAXUS***

Status: State Species of Special Concern

American badgers occur most often in open, drier stages of grasslands, shrub, and forest habitats where friable soils are present (Zeiner et al. 1990). They use dens and burrows for sleeping, hunting, storing food, and breeding (CDFG 1995b, Zeiner et al. 1990). Normally, they have a single den entrance that is approximately 8 to 12 inches in an elliptical or half-moon shape, similar to their body shape. Dens are usually found in friable soils. They may have multiple dens in an area and can dig a new den each night. During cooler nights the entrance to the den may be partially plugged with soil to help regulate temperatures (CDFG 1995b).

American badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground (CDFG 1995b). American badgers primarily feed on small mammals that they capture by digging out the prey's burrows. Such prey may include pocket gophers, mice, chipmunks, and ground squirrels. Other prey may include birds, bird eggs, reptiles, invertebrates, and carrion (CDFG 1995b). American badgers are somewhat tolerant of human activities but avoid cultivated agricultural habitats.

The nearest occurrence was recorded nearly 10 miles south of Merced. The sighting occurred prior to 1986, though the specific date is unknown. Within the BSA there is suitable grassland habitat adjacent to the WWTF. They are not expected to occur elsewhere in the BSA due to the highly developed nature of the urban areas.

San Joaquin Kit Fox***VULPES MACROTIS MUTICA***

Status: Federally Endangered and State Threatened

San Joaquin kit foxes are a subspecies of kit fox that is endemic to the Central Valley of California (USFWS 1998, 2010). They are found primarily in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley. They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. San Joaquin kit foxes are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land. San Joaquin kit foxes use subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be visible above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

The nearest occurrence was an adult seen in 1999 traveling through backyards along the Livingston Canal (EONDX 42082; CDFW 2019b). A natal group had been seen in the same area in the early 1980's. Suitable habitat is present within the vicinity of the Project limits in grassland habitat adjacent to the WWTF. This species is highly adaptable to human-altered landscapes and can be found in urban developed areas, particularly where there is open space, such as parks, schools, and stormwater basins.

Nesting Birds

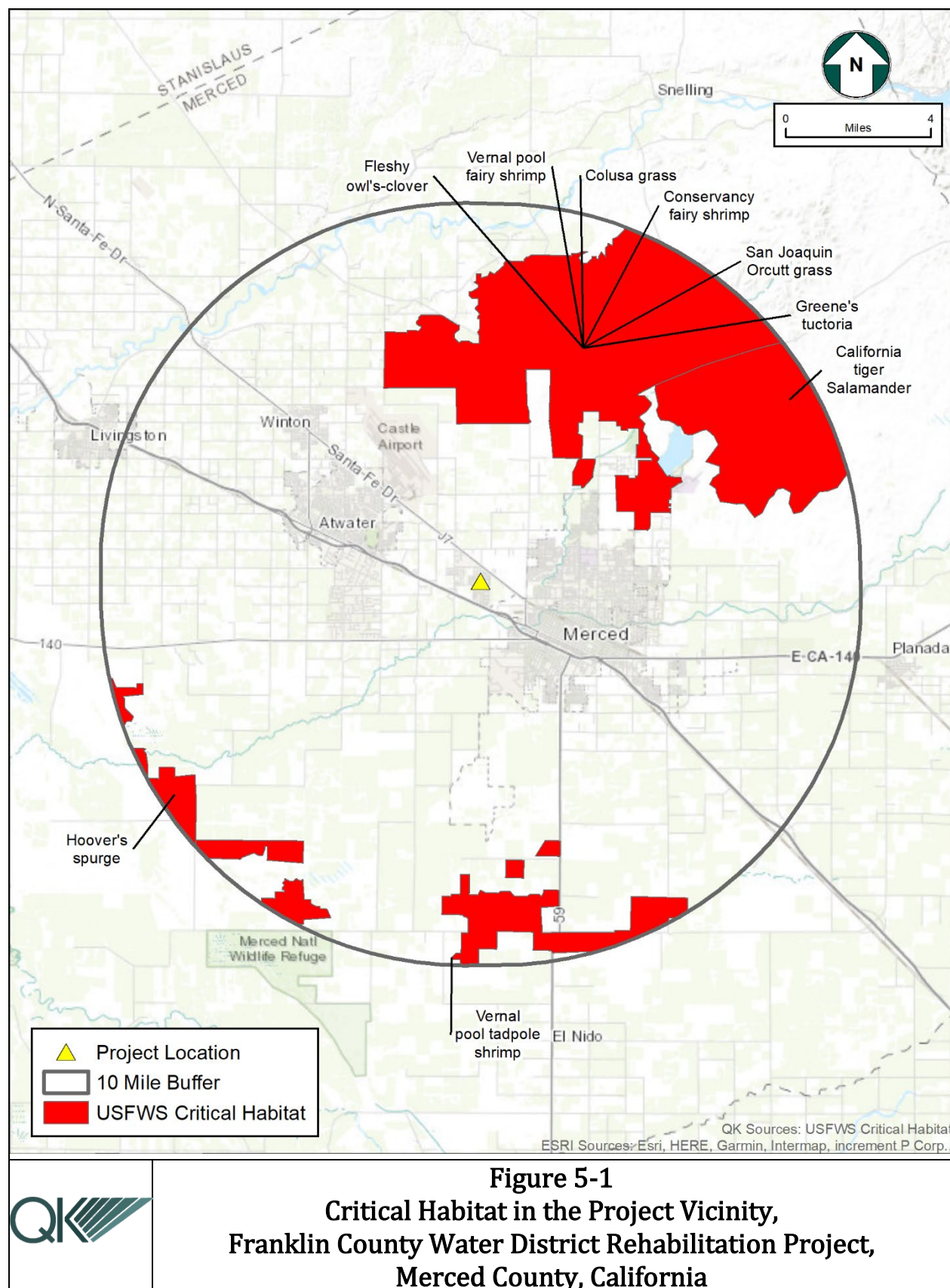
In addition to the special-status species above, habitat conditions within the BSA could support a range of nesting birds from ground nesting species, such as killdeer (*Charadrius vociferous*), to common songbirds, such as house finch, to raptors, such as red-tailed hawks.

5.2 - Sensitive Natural Communities***5.2.1 - SENSITIVE PLANT COMMUNITIES***

The database and literature review identified two sensitive plant communities within the vicinity of the Project: Northern Claypan Vernal Pool and Northern Hardpan Vernal Pool (CDFW 2019b). Given the developed nature of the Project site, the only location where these sensitive plant communities could be found was near the WWTF; however, site visits did not find any evidence of vernal pool habitat at this location. Neither sensitive plant communities are present.

5.2.2 - CRITICAL HABITATS

The BSA does not overlap any federally-designated critical habitats (Figure 5-1; USFWS 2019a).



5.3 - Jurisdictional Aquatic Resources

A formal delineation of waters of the U.S. and State has not been conducted for this Project. However, based on a review of the NWI and NHD data, and as discussed in Section 4.1.5, two of the drainages may connect to Bear Creek, which connects to the San Joaquin River, which connects to the Sacramento River at the Sacramento-San Joaquin Delta, and the Pacific Ocean, a Traditional Navigable Water. The other two drainages do not appear to be connected to any other drainages and may be man-made ditches. The WWTF is located adjacent to Black Rascal Creek, but it is assumed that wastewater is not released into the creek because of potential contamination concerns.

5.4 - Wildlife Movement

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes [*Canis latrans*], mule deer [*Odocoileus hemionus californicus*]). They can also be small-scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The Project is not located within any identified wildlife linkages or corridors identified by the California Essential Habitat Connectivity Project (Spencer et al. 2010) or the Recovery Plan for *Upland Species of the San Joaquin Valley, California* (USFWS 1998). The drainages on and adjacent to the site may provide localized movement corridors for animal species that are adaptable to human-altered landscapes, though they are disturbed and many drainages lack natural riparian habitat.

5.5 - Resources Protected by Local Policies and Ordinances

The BSA falls within the Franklin/Beachwood Community Specific Plan, which includes a section on Open Space and Recreation but does not discuss biological resources (Merced County 1983). The accompanying Initial Study noted that development of the community could result in reduction of plant and animal diversity but determined that preservation of agricultural habitat would reduce the impact to those resources. This community plan is scheduled for update by 2019 to comply with the 2030 Merced County General Plan (Merced county 2013).

The Merced County 2030 General Plan contains a number of policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies (Merced County 2013). Included within the General Plan is an implementation program for project applicants to conduct a biological resource review and address significant impacts through implementation of State and federal mitigation standards.

5.6 - Habitat Conservation Plans

The Project is within the boundaries of the PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan; however, that plan applies only to PG&E maintenance projects and does not apply to the currently proposed Project. The Project site does not overlap any other habitat conservation plans (CDFW 2019a).

SECTION 6 - IMPACT ANALYSIS AND AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

This section provides an analysis of the potential for special-status biological resources to be impacted by the proposed Project. The analysis was developed using the CEQA Appendix G questions, but also provides sufficient information to support NEPA documentation.

The following impact analysis is based on the Project description, including the following assumptions:

- The Project includes replacement and repair of existing sewer lines, decommissioning of WWTF Pond No. 3, and construction of a new extended aeration activated sludge facility.
- Surface conditions above the replaced line will be paved roads. Habitat loss will be limited to annual grassland adjacent to the WWTF where the new sludge facility will be construction.
- Implementation of the Project may occur at any time of year.
- All construction will occur during daylight hours.
- No trees will be removed.
- No drainages will be impacted.

6.1 - Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

- 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.*

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

Impact Analysis

As discussed in Section 5, no special-status plant species were determined to have a potential to occur within the BSA because of existing habitat and soil conditions. No impacts to special-status plant species will occur.

6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES

Western Pond Turtle

Direct impacts could include death or injury to individual animals and loss of habitat. Direct impacts to western pond turtles could occur if they are present in the WWTF ponds when

Pond 3 is decommissioned. Direct impacts to nests could occur if nests are present in surround upland habitat when construction occurs. Indirect impacts are unlikely given the short duration and limited nature of impacts relative to the WWTF where the species is most likely to occur.

Western Burrowing Owl

Direct impacts could include injury or death of individuals, including abandonment of nests, if occupied burrows are adjacent construction areas. Noise and vibration from construction of the Project, plus the presence of construction workers (specifically for the grassland habitat adjacent to the WWTF), could alter the normal behaviors of nesting adults, resulting in harm or death to eggs or nestlings. Direct impacts could also include the loss of suitable foraging habitat for construction of the new sludge facility; however, there is ample foraging habitat to support burrowing owls in the vicinity of the Project. No indirect impacts are anticipated given the short duration of construction and limited nature of impacts to suitable habitat.

Swainson's Hawk

Direct impacts to Swainson's hawks could occur if replacement of sewer lines occur near an active nest or in foraging habitat during the nesting season. No trees are expected to be removed, but noise and vibration from construction of the Project, plus the presence of construction workers, could alter the normal behaviors of nesting adults, resulting in harm or death to eggs or nestlings. Loss of grassland habitat for construction of the sludge facility would also be considered a direct impact, but the parcel is small and there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction in any given area and no loss of suitable nesting habit would occur.

Western Mastiff Bat

Direct impacts may occur if western mastiff bats are disturbed from day roosts by construction activities, but such disturbance is likely to be minimal because this species commonly occurs in urban habitats. Suitable maternity roosts are lacking. Loss of foraging habitat would be negligible because there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction and the limited nature of impacts to suitable habitat.

Western Red Bat

Direct impacts may occur if western red bats are disturbed from day roosts by construction activities, but such disturbance is likely to be minimal because this species commonly occurs in urban habitats. Loss of foraging habitat would be negligible because there is ample foraging habitat in the vicinity. No indirect impacts are anticipated given the short duration of construction and the limited nature of impacts to suitable habitat.

American Badger

Direct impacts to American badger could occur if they are present in the grassland habitat when construction occurs. These direct impacts could include death or injury to individuals or young, including from abandonment of young if adults are stressed. Direct impacts could also include entrapment of adults or young if there are trenches nearby, as well as loss of suitable habitat. The loss of suitable habitat could result in indirect impacts through increased competition with conspecifics for limited resources over the long-term.

San Joaquin Kit Fox

San Joaquin kit foxes are known to occur in urban settings; as such, the entire Project site can be considered suitable habitat for this species (Figure 6-1). Most of the Project site where sewer line repair and replacement would occur is highly developed for residential uses. San Joaquin kit foxes would likely only occur in these areas transiently for foraging and movement but may encounter Project activities in doing so. Construction of the additional basin near the WWTF would develop a large portion of annual grassland habitat that could support San Joaquin kit fox for foraging, movement, and shelter. Staging/laydown for materials and equipment would not create additional habitat impacts as they will primarily occur within the FCWD facility on the east side of the service area. Temporary staging may occur within the immediate vicinity of pipeline repair locations as needed. Staging for construction of the new percolation pond will occur within the same parcel or within the FCWD facility.

Direct impacts resulting in injury or death of pups could occur if an active natal den is located near the construction area, causing the adults to alter normal behaviors. Direct impacts by vehicles is a concern for San Joaquin kit foxes in urban environments, but the proposed Project would not cause an appreciable increase in traffic at night when the species is active. Direct impacts could also include entrapment in trenches or pipes during construction and loss of suitable habitat. The loss of suitable habitat for construction of the additional basin could result in indirect impacts through increased competition with conspecifics for limited resources over the long-term.

Nesting Birds

The Project site may contain suitable habitat that could support a wide variety of nesting bird species protected under the Migratory Bird Treaty Act and the California Fish and Game Code. While no trees or shrubs are anticipated to be removed, Project activities adjacent to nesting birds could result in direct impacts to the nests from noise and vibration caused by construction activities. If construction in the annual grassland adjacent to the WWTF occurs during the nesting season, active nests for ground nesting species could be impacted. No indirect impacts are anticipated as the amount of suitable nesting habitat that would be lost is negligible and ground nesting species are adaptable to changing habitat conditions.

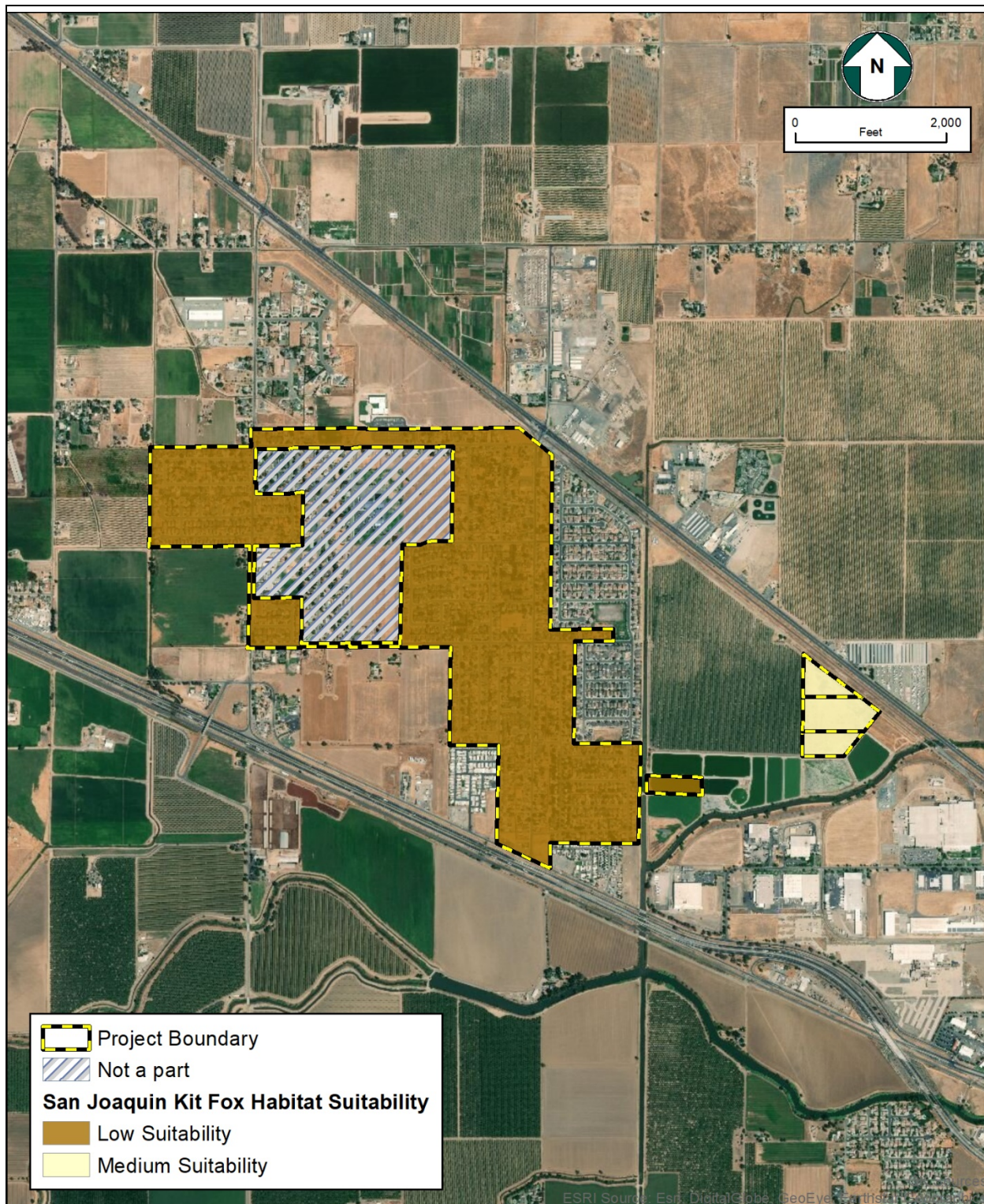


Figure 4-1
Suitable Habitat for San Joaquin Kit Fox
Franklin County Water District Rehabilitation Project,
Merced County, California



Avoidance, Minimization, and Mitigation Measures

The limited disturbance footprint for this Project and the short duration of activities at any given location, coupled with implementation of avoidance and minimization would reduce impacts of the Project to special-status wildlife species to level that would be less than significant. Given the negligible impacts to bat species, no measures are recommended for those species. The following measures are recommended to avoid and minimize impacts to western pond turtle, burrowing owl, Swainson's hawk, American badger, and San Joaquin kit fox.

BIO-MM-1 Pre-activity Surveys for Western Pond Turtle. Within 14 days of the start of Project activities at the WWTF and adjacent grassland habitat, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of this species. The surveys should cover the ponds plus surround upland habitat within 50 feet of the ponds. Pedestrian surveys achieving 100% visual coverage should be conducted. If a western pond turtle is found on-site, the qualified biologist may relocate the animal downstream more than 500 feet from the Project disturbance footprint.

BIO-MM-2 Pre-activity Surveys for San Joaquin Kit Fox, American Badger, and Burrowing Owl. Within 14 days of the start of Project activities in any specific area, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of these species. The surveys should cover the Project site plus a 500-foot buffer. Pedestrian surveys achieving 100% visual coverage should be conducted. Multiple surveys are anticipated to be needed, which would be phased with construction of the Project. If no evidence of these species is detected, no further action is required.

BIO-MM-3 Avoidance of Burrows for San Joaquin Kit Fox, American Badger, and Burrowing Owl. If dens/burrows that could support any of these species are discovered during the pre-activity surveys conducted under BIO-MM-2, the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

San Joaquin Kit Fox

- Potential Den – 50 feet
- Atypical Den – 50 feet (includes pipes and other man-made structures)
- Known Den – 100 Feet
- Natal/Pupping Den – 500 feet

American Badger Dens (occupied)

- Natal Den (February 1 – July 1) – 250 feet
- Non-Natal Den – 50 feet

Burrowing Owl (active burrows)

- April 1 – October 15 – 500 feet
- October 16 – March 31 – 100 feet

BIO-MM-4 **Avoidance and Minimization Measures for San Joaquin Kit Fox, American Badger, and Burrowing Owl.** The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix F; USFWS 2011) and apply to all three species.

- Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on county roads and State and federal highways. Night-time construction speed limits should be 10-mph.
- Off-road traffic outside of designated Project areas should be prohibited.
- All Project activities should occur during daylight hours.
- To prevent inadvertent entrapment of kit foxes or other animals during construction of the project, all excavated, steep-walled holes or trenches more than two (2) feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed.
- Before holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW should be contacted before proceeding with the work.
- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox or burrowing owl is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox or owl has escaped.

- All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No firearms should be allowed on the Project site.
- No pets, such as dogs or cats, should be permitted on the Project site.
- Use of rodenticides and herbicides in Project areas should be restricted.
- A representative should be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or burrowing owl or who finds a dead, injured or entrapped kit fox, tricolored blackbird, song sparrow, or burrowing owl. The representative should be identified during the employee education program and their name and telephone number should be provided to the Service.
- An employee education program should be developed and presented to Project personnel. The program should consist of a brief presentation by persons knowledgeable in kit fox, tricolored blackbird, song sparrow, and burrowing owl, biology, and the legislative protections in place. The program should include the following: a description of each species natural history and habitat needs; a report of the occurrence of each species in the Project area; an explanation of the status of each species and its protections under federal and State laws; and a list of measures being taken to reduce impacts to each species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after project completion will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species should immediately report the incident to their representative. This representative should contact the CDFW and USFWS immediately in the case of a dead, injured or entrapped listed animal.
- The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include

the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

- New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the USFWS.

BIO-MM-5 Pre-activity Nesting Bird Surveys. If Project activities must occur during the nesting season (February 15 to September 31), pre-activity nesting bird surveys should be conducted within seven days prior to the start of construction at the construction site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). The surveys should be phased with construction of the Project. If no active nests are found, no further action is required; however, nests may become active at any time throughout the summer, including when construction activities are occurring. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 350 feet may be required, as determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist. The biologist should have the ability to stop construction if nesting adults show sign of distress.

BIO-MM-6 Pre-activity Surveys for Swainson's Hawk Nests. If Project activities must occur during the nesting season (February 15 to September 31), pre-activity surveys should be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFW 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys should be conducted during at least two survey periods. The survey will be conducted in accordance with the methodology outlined in existing protocols and should be phased with construction of the Project.

If no Swainson's hawk nests are found, no further action is required.

BIO-MM-7 Swainson's Hawk Nest Avoidance. If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist will complete an assessment of the potential for current construction activities to impact the nest. The assessment will consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Minimally, construction activities should not occur within 100 feet of an active nest and

may require monitoring if within 500 feet of an active nest. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.

Significance After Mitigation. Implementation of the mitigation measures above will reduce the level of significance for special-status animal species to a less than significant level.

6.2 - Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

- b) Have a substantial adverse impact 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 US Fish and Wildlife Service.*

No sensitive natural communities are present within the BSA (CDFW 2019a). The Project site does not overlap critical habitat (USFWS 2019a). No impacts to riparian or sensitive natural communities will occur.

6.3 - Jurisdictional Aquatic Resources

The proposed project would have a significant effect on biological resources if it would:

- 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.*

Five aquatic features were identified within the Project boundary, including four drainages and one WWTF pond. A formal delineation of waters of the U.S. and State has not been completed. The presence of wetlands within the drainages has not been verified but is unlikely based on observations of drainage conditions in aerial imagery. Furthermore, the Project is not expected to impact any drainage.

WWTF Pond No. 3 will be decommission as part of the Project. The WWTF ponds are well maintained and do not contain wetland vegetation.

No wetlands would be impacted by implementation of the Project.

6.4 - Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

- d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.*

The project is not located within a mapped wildlife movement corridor or linkage. Drainages and associated riparian habitat, if present, can provide small-scale wildlife movement corridors, but no drainages would be impacted by the Project.

6.5 - Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance*

The proposed Project does not conflict with the 2030 Merced County General Plan, and there are no local ordinances applicable to the Project. Therefore, there are no impacts with respect to local policies and ordinances.

6.6 - Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.*

The PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan is the only conservation plan overlying the proposed Project, but it does not apply to any projects that are not implemented by PG&E (CDFW 2019a). The proposed Project will not conflict with any adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approval local, regional, or State habitat conservation plan.

SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identifications of species presence would be certain. Therefore, the results of the surveys conducted cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

REGULATORY SETTING

FRANKLIN COUNTY WATER DISTRICT REHABILITATION

Regulatory Setting

Federal Laws and Regulations

Federal Endangered Species Act of 1973 (USC, Title 16, Sections 1531 -1543)

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of “harm” includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. “Harass” is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special

management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC, Title 16, Sections 703 - 711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC, Title 33, Sections 1521 - 1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACE implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Applicable State Laws and Regulations

California Environmental Quality Act (California Public Resources Code, Sections 21000 - 21178, and Title 14 CCR, Section 753, and Chapter 3, Sections 15000 - 15387)

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the “fully mitigate” standard of CESA, and other applicable conditions.

Porter-Cologne Water Quality Control Act

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters

deemed ‘isolated’ or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

Various Sections of the California State and Fish and Game Code

SECTION 460 AND SECTIONS 4000-4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

SECTIONS 1600 THROUGH 1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a “stream” is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

SECTIONS 3511, 4700, 5050, AND 5515

The protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

SECTIONS 1900 THROUGH 1913 - NATIVE PLANT PROTECTION ACT

California’s Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of

the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

Merced County General Plan

Development within the community of Franklin/Beachwood is governed by the Franklin/Beachwood Community Specific Plan, adopted in September 1983. There are no goals, policies, objectives within the Franklin/Beachwood Community Specific Plan that specifically address impacts to biological resources.; however, the Franklin community is under the goals and policies outlined in the Merced County General Plan Natural Resources Element.

Table A-1
2030 Merced County General Plan Natural Resources Element Goal and Policies

Goal	
Goal NR-1:	Preserve and protect, through coordination with the public and private sectors, the biological resources of the County.
Policies	
Policy NR-1.1 Habitat Protection (RDR/PSR)	Identify areas that have significant long-term habitat and wetland values including riparian corridors, wetlands, grasslands, rivers and waterways, oak woodlands, vernal pools, and wildlife movement and migration corridors, and provide information to landowners.
Policy NR-1.2 Protected Natural Lands (RDR/PSR)	Identify and support methods to increase the acreage of protected natural lands and special habitats, including but not limited to, wetlands, grasslands, vernal pools, and wildlife movement and migration corridors, potentially through the use of conservation easements.
Policy NR-1.3 Forest Protection (SO)	Preserve forests, particularly oak woodlands, to protect them from degradation, encroachment, or loss.
Policy NR-1.4 Important Vegetative Resource Protection (SO)	Minimize the removal of vegetative resources which stabilize slopes, reduce surface water runoff, erosion, and sedimentation.
Policy NR-1.5 Wetland and Riparian Habitat Buffer (PSR/RDR)	Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.

Policy NR-1.6 Terrestrial Wildlife Mobility (SO)	Encourage property owners within or adjacent to designated habitat connectivity corridors that have been mapped or otherwise identified by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service to manage their lands in accordance with such mapping programs. In the planning and development of public works projects that could physically interfere with wildlife mobility, the County shall consult with the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service to determine the potential for such effects and implement any feasible mitigation measures.
Policy NR-1.7 Agricultural Practices (SO)	Encourage agricultural, commercial, and industrial uses and other related activities to consult with environmental groups in order to minimize adverse effects to important or sensitive biological resources.
Policy NR-1.8 Use of Native Plant Species for Landscaping (SO)	Encourage the use of native plant species in landscaping, and, where the County has discretion, require the use of native plant species for landscaping.
Policy NR-1.9 Rural to Urban Redesignations (MPSP)	Carefully consider the potential impacts on significant habitats from new development when redesignating land from a rural to an urban use.
Policy NR-1.10 Aquatic and Waterfowl Habitat Protection (MPSP)	Cooperate with local, State, and Federal water agencies in their efforts to protect significant aquatic and waterfowl habitats against excessive water withdrawals or other activities that would endanger or interrupt normal migratory patterns or aquatic habitats.
Policy NR-1.11 On-Going Habitat Protection and Monitoring (PSR)	Cooperate with local, State, and Federal agencies to ensure that adequate on-going protection and monitoring occurs adjacent to rare and endangered species habitats or within identified significant wetlands.
Policy NR-1.12 Wetland Avoidance (RDR/PSR/MPSP)	Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.
Policy NR-1.13 Wetland Setbacks (RDR)	Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.
Policy NR-1.14 Temporary Residential Uses (RDR)	Ensure that buildings and structures approved for temporary residential use in significant wetland areas are not converted to permanent residential uses
Policy NR-1.15 Urban Forest Protection and Expansion (SO/MPSP)	Protect existing trees and encourage the planting of new trees in existing communities. Adopt an Oak Woodland Ordinance that requires trees larger than a specified diameter that are removed to accommodate development be replaced at a set ratio.

Policy NR-1.16 Hazardous Waste Residual Repository Location (RDR)	Require new hazardous waste residual repositories (e.g., contaminated soil facilities) to be located at least a mile from significant wetlands, designated sensitive species habitat, and State and Federal wildlife refuges and management areas.
Policy NR-1.17 Agency Coordination (MPSP/IGC/JP)	Consult with private, local, State, and Federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies.
Policy NR-1.18 San Joaquin River Restoration Program Support (MPSP/SO)	Monitor the San Joaquin River Restoration Program efforts to ensure protection of landowners, local water agencies, and other third parties.
Policy NR-1.19 Merced River Restoration Program Support (MPSP/SO)	Support the restoration efforts for the Merced River consistent with the Merced River Corridor Restoration Plan.
Policy NR-1.20 Conservation Easements (SO/IGC/JP)	Encourage property owners to work with land trusts and State and Federal agencies to pursue voluntary conservation easements.
Policy NR-1.21 Special-Status Species Surveys and Mitigation (RDR/SO/IGC)	Incorporate the survey standards and mitigation requirements of state and federal resource management agencies for use in the County's review processes for both private and public projects.

Categories of Implementation Action/Tools

RDR – Regulation and Development Review

MPSP – Infrastructure and Service Master Plans, Strategies, and Programs

FB – Financing and Budgeting

PSR – Planning Studies and Reports

SO – County Services and Operations

IGC – Inter-Governmental Coordination

JP – Joint Partnerships with the Private Sector

PI – Public Information

Source: (Merced County 2013) (Merced County 2013)

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS OF THE *FRANKLIN COUNTY WATER DISTRICT REHABILITATION*



Photograph 1: View of vacant WWTF parcel.
37.320471, -120.525812, looking northeast from the southwest corner.
Photograph taken by Taken by Carie Wingert on June 20, 2019



Photograph 2: View of vacant WWTF parcel
37.321758, -120.512784, looking southwest from the top of the stockpile.
Photograph taken by Carie Wingert on June 20, 2019



Photograph 1: View of vacant WWTF parcel.
37.321758, -120.512784, looking west from the top of the stockpile.
Taken by Carie Wingert on June 20, 2019



Photograph 2: View of remnant ditch along western boundary of WWTF parcel.
37.322615, -120.515767, looking south.
Taken by Carie Wingert on June 20, 2019

APPENDIX C

**PRELIMINARY BIOLOGICAL ASSESSMENT FOR THE FRANKLIN COUNTY WATER DISTRICT SEWER
REHABILITATION PROJECT (QK 2019)
*FRANKLIN COUNTY WATER DISTRICT SEWER REHABILITATION PROJECT***

APPENDIX D

PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA FRANKLIN COUNTY WATER DISTRICT SEWER REHABILITATION PROJECT

Table C-1
Plant Species Observed within the Biological Study Area on 12/6/16 and 6/20/19.
Franklin County Water District Sewer Rehabilitation Project, Merced County, California

Scientific Name	Common Name	Native or Introduced
Trees		
<i>Salix</i> sp.	willow	unknown
	walnut	
Shrubs		
<i>Rubus armeniacus</i>	Himalayan blackberry	introduced; Cal-IPC rating: High
Herbs		
<i>Amsinckia</i> sp.	fiddleneck	
<i>Brassica rapa</i>	mustard	Introduced; Cal-IPC Limited
<i>Carduus pycnocephalus</i>	Italian thistle	Introduced; Cal-IPC Moderate
<i>Centaurea solstitialis</i>	yellow starthistle	Introduced
<i>Conium maculatum</i>	poison hemlock	Introduced; Cal-IPC Moderate
<i>Cirsium vulgare</i>	bull thistle	Introduced; Cal-IPC Moderate
<i>Convolvulus arvensis</i>	field bindweed	Introduced
<i>Cynodon dactylon</i>	Bermuda grass	Introduced; Cal-IPC Moderate
<i>Digitaria</i> sp.	crabgrass	Introduced
<i>Erigeron</i> sp.	hairy fleabane	Native
<i>Erodium botrys</i>	broad leaf filaree	Introduced
<i>Malva parviflora</i>	cheeseweed	Introduced
<i>Rumex crispus</i>	curly dock	Introduced; Cal-IPC Limited
<i>Lactuca serriola</i>	prickly lettuce	Introduced
<i>Salsola tragus</i>	Russian thistle	Introduced; Cal-IPC rating: Moderate
<i>Helianthus annuus</i>	hairy-leaved sunflower	Native
<i>Silybum marianum</i>	milk thistle	Introduced; Cal-IPC Limited
<i>Urtica dioica</i>	stinging nettle	Native
Grasses		
<i>Arundo donax</i>	giant reed	Introduced; Cal-IPC rating: High
<i>Avena fatua</i>	wild oats	Introduced; Cal-IPC Moderate
<i>Juncus</i> sp.	rush	Native
<i>Bromus diandrus</i>	ripgut	Introduced; Cal-IPC Moderate

*Cal-IPC = California Invasive Plant Council.

Rating system: **High** = several ecological impacts; **Moderate** = substantial but not severe ecological impacts; **Limited** = minor ecological impacts or not enough information to justify higher score; **Alert** = species ranked as High or Moderate with limited distribution, but potential to spread; **Watch** = could pose a high risk of becoming invasive in the future.

Table C-2
Animal Species Observed within the Biological Study Area on 12/6/16 and 6/20/19.
Franklin County Water District Sewer Rehabilitation Project, Merced County, California

Scientific Name	Common Name	Native or Introduced
Birds		
<i>Actitis macularius</i>	spotted sandpiper	Native
<i>Ardea alba</i>	great egret	Native
<i>Ardea herodias</i>	great blue heron	Native
<i>Branta canadensis</i>	Canada goose	Native
<i>Bucephala albeola</i>	bufflehead	Native
<i>Buteo jamaicensis</i>	red-tailed hawk	Native
<i>Canis latrans</i>	coyote (scat)	Native
<i>Corvus brachyrhynchos</i>	American crow	Native
<i>Haemorhous mexicanus</i>	house finch	Native
<i>Himantopus mexicanus</i>	black-necked stilt	Native
<i>Larus</i> sp.	gull	Unknown
<i>Melospiza melodia</i>	song sparrow	Native
<i>Phalacrocorax auritus</i>	double-crested cormorant	Native
<i>Zenaida macroura</i>	mourning dove	Native

APPENDIX E

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS FOR THE FRANKLIN COUNTY WATER DISTRICT SEWER REHABILITATION PROJECT

Table D-1
Special-Status Plant Species in the Regional Vicinity of the Project Site
Franklin County Water District Project, Merced County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Plants				
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	-/- 1B.2	Annual herb; occurs in alkaline habitat, in playas, valley and foothill grassland (adobe clay), and vernal pools; blooms March – June; elevation range is between 3 and 196 feet.	No Potential	Suitable habitat absent. The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. No adobe soils present.
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	-/- 1B.2	Annual herb; occurs in Chenopod scrubland and grassland habitats, but it also is known to occur in wet areas; most common on alkaline soils; blooms May – Oct; ranges in elevation from 1 to 1,000 feet.	No Potential	Suitable habitat absent. The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. No alkaline soils present.
<i>Atriplex depressa</i> brittlescale	-/- 1B.2	Annual plant; occurs in Chenopod scrubland, grassland, and alkali sink habitats, but it also is known to occur in wet areas; elevation range is between 3 and 1,049 feet.	No Potential	Suitable habitat absent. The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Atriplex minuscula</i> lesser saltscale	-/- 1B.1	Annual plant; occurs in Chenopod scrubland, grassland, and alkali sink habitats, but it also is known to occur in wet areas; ranges in elevation from 15 to 656 feet.	No Potential	Suitable habitat absent. The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. No adobe soils present.
<i>Atriplex persistens</i> vernal pool smallscale	-/- 1B.2	Annual herb; restricted to alkaline vernal pools on the floor of the San Joaquin Valley and is endemic to California; blooms June – Sept; ranges in elevation less than 337 feet.	No Potential	No vernal pools present.
<i>Atriplex subtilis</i> subtle orache	-/- 1B.2	Annual herb; blooms June – Oct; occurs in Chenopod scrubland, grassland, and alkali sink habitats, but it also is known to occur in wet areas. ranges in elevation from 130 to 330 feet.	No Potential	Suitable habitat absent. The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Brasenia schreberi</i> watershield	-/- 2B.3	Perennial rhizomatous herb (aquatic); occurs in wetlands in freshwater marshes and swamps; blooms from June – Sept; ranges in elevation from 98 to 7,217 feet.	No Potential	Marginal habitat may be present in riverine areas where water persists, such as Black Rascal Creek; however, the Project will not affect these riverine areas.
<i>Castilleja campestris</i> var. <i>succulenta</i> succulent owl's-clover	FT/SE 1B.2	Annual herb (hemiparasitic); occurs in the margins of vernal pools, swales and some seasonal wetlands, often on acidic soils; flowers from April – May; ranges in elevation from 80 to 2,300 feet.	No Potential	No wetlands or vernal pools present.
<i>Clarkia rostrata</i> beaked clarkia	-/- 1B.3	Annual herb; occurs in Cismontane woodland, and valley and foothill grasslands; blooms April – May and its elevation ranges from 196 to 1,640 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Cryptantha hooveri</i> Hoover's cryptantha	-/- 1A	Annual herb; blooms April – May; occurs in inland dunes and Valley and foothill grasslands on sandy soils; endemic to California; ranges in elevation less than 262 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Delphinium recurvatum</i> recurved larkspur	-/- 1B.2	Perennial herb; commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland; most common on sandy or clay alkaline soils; blooms Mar – June; ranges in elevation from 10 to 2,592 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Downingia pusilla</i> dwarf downingia	-/- 2B.2	Annual herb; occurs in vernal pools in wetland and riparian areas in valley and foothill grasslands, foothill woodlands; blooms Mar – May; ranges in elevation from 3 to 1,460 feet.	No Potential	No vernal pools present.
<i>Eryngium racemosum</i> Delta button-celery	-/- 1B.1	Annual/perennial herb; occurs in riparian scrub, clay soils on sparsely vegetated margins of seasonally flooded floodplains; blooms June – Oct; ranges in elevation from 15 to 75 feet	No Potential	No riparian scrub or seasonally flooded floodplains present.
<i>Eryngium spinosepalum</i> spiny-sepaled button-celery	-/- 1B.2	Annual/perennial herb; associated with vernal pools and depressions within grasslands; blooms April – May; ranges in elevation from 330 to 840 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Euphorbia hooveri</i> Hoover's spurge	-/- 1B.2	Annual/perennial herb; occurs in vernal pools and depressions within grasslands; blooms April – May; elevation ranges from 330 to 840 feet.	No Potential	No vernal pools present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Extriplex joaquinana</i> San Joaquin spearscale	-/- 1B.2	Annual herb; occurs wetlands and non-wetlands in alkaline soils in chenopod and shadscale scrub, meadows and seeps, playas, valley and foothill grasslands; endemic to California; blooms April – Oct; ranges in elevation from 330 to 840 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. Conditions in the grassland are not alkaline.
<i>Lagophylla dichotoma</i> forked hare-leaf	-/- 1B.1	Annual herb; occurs in Cismontane woodland, and valley and foothill grassland, occasionally on clay soils; blooms April – May; ranges in elevation from 147 to 1,100 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	-/- 1B.1	Annual herb; occurs in coastal marshes and swamps, and playas and vernal pools in the interior of California; blooms Feb – June; ranges in elevation from 0 to 4,002 feet.	No Potential	No wetlands or vernal pools present.
<i>Lepidium latipes</i> var. <i>heckardii</i> Heckard's pepper-grass	-/- 1B.2	Annual herb; occurs in valley and foothill grasslands on alkaline flats; blooms March – May; ranges in elevation from 0 to 656 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. Soils are not alkaline.
<i>Monardella leucocephala</i> Merced monardella	-/- 1A	Annual herb; occurs in valley and foothill grasslands on sandy, mesic soil; blooms May – September; ranges in elevation from 115 to 328 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. Soils are not sandy.
<i>Navarretia nigelliformis</i> ssp. <i>radians</i> shining navarretia	-/- 1B.2	Annual herb; occurs in Cismontane woodland, valley and foothill grassland and in vernal pools, occasionally on clay soils; blooms April – July; ranges in elevation from 249 to 3,280 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing. No vernal pools present.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	-/- 1B.1	Annual herb; occurs in coastal scrub, meadows and seeps, valley and foothill grassland on alkaline soils, and in vernal pools; blooms April – July; ranges in elevation from 0 to 3,970 feet.	No Potential	No suitable soils or vernal pools present.
<i>Neostapfia colusana</i> Colusa grass	-/- 1B.1	Annual herb; occurs in vernal pools with adobe soils; most common in alkali or acidic soils; blooms May – July; ranges in elevation from 16 to 345 feet.	No Potential	No vernal pools or suitable soils present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	-/- 1B.1	Annual herb; occurs in vernal pools; most common in acidic soils that vary in texture from clay to sandy loam; blooms May – September; ranges in elevation from 100 to 2,500 feet.	No Potential	No vernal pools present.
<i>Orcuttia pilosa</i> hairy Orcutt grass	-/- 1B.1	Annual herb; blooms May to September; occurs in vernal pools; often in acidic and saline-alkaline soils; elevation 150 to 655 feet; threatened by agriculture, urbanization, overgrazing, non-native plants, and trampling; only known from a few locations on the Central Valley floor and lower foothills in Madera, Merced, and Stanislaus counties, and the very northern portion of the valley in Butte, Glenn, and Tehama counties.	No Potential	No vernal pools present.
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	FE/SE 1B.1	Annual herb; occurs in Cismontane woodland and valley and foothill grasslands; blooms March – April; ranges in elevation from 45 to 450 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Puccinellia simplex</i> California alkali grass	-/- 1B.2	Annual herb; occurs in Chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools; occurs in alkaline, vernal mesic soil, and in sinks, flats, and lake margins; blooms March – May; ranges in elevation from 6 to 3,051 feet.	No Potential	No vernal pools or suitable wet areas present.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	-/- 1B.2	Perennial rhizomatous herb (emergent); occurs in marshes and swamps, in sandy loam and clay soils; blooms July – Sept; ranges in elevation from 10 to 100 feet.	No Potential	No suitable marshes or swamps present.
<i>Sidalcea keckii</i> Keck's checkerbloom	-/- 1B.1	Annual herb; occurs in Cismontane woodland, and valley and foothill grassland on serpentine and clay soils; blooms April – June; ranges in elevation from 246 to 2,132 feet.	No Potential	The grassland habitat near the WWTF is heavily disturbed and subject to periodic plowing.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	-/- 2B.1	Annual herb; occurs in riparian, meadows, marsh, vernal-pools in freshwater wetlands, wetland-riparian, and non-wetlands; blooms May – Sept; ranges in elevation from 16 to 1,427 feet	No Potential	No suitable aquatic habitats present.
<i>Tuctoria greenei</i> Greene's tuctoria	-/- 1B.1	Annual herb; occurs in small or shallow vernal pools or the early drying sections of large, deep vernal pools in the Central Valley; most common in Anita clay and Tuscan loam soils; blooms May – July; ranges in elevation from 110 to 440 feet.	No Potential	No vernal pools present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
<i>Branchinecta conservation</i> Conservancy fairy shrimp	FE/- -/-	Found in large, cool-water vernal pools with moderately turbid water that generally last until June; shrimp are generally present in vernal pools from early November to early April; average time to maturity is 49 days, but can be as little as 19 days in warmer pools; eggs laid in spring and persist through dry season as cysts; endemic to the Central Valley and surrounding foothills and mountains; only eight (8) known populations; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.	No Potential	No vernal pools present.
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	FT/- -/-	Occur a variety of vernal pool habitats that range from small, clear pools to large, turbid and alkaline pools; more common in pools less than 0.05 acre, typically as part of larger vernal pool complexes; adults active from early December to early May; pools must hold water for at least 18 days, the minimum to complete the life cycle if temperatures are optimal; eggs laid in spring and persist through dry season as cysts; current California distribution includes the Central Valley and coast ranges; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.	No Potential	No vernal pools present.
<i>Branchinecta mesovallensis</i> midvalley fairy shrimp	-/- -/SS	Found in small, warmer, short-lived vernal pools and grass-bottomed swales less than 663 square feet; can reach maturity in as few as eight (8) days and complete multiple hatchings in a single rainy season; eggs laid in spring and persist through dry season as cysts; endemic to small portion of the Central Valley in Southeastern Sacramento, Southern Sierra Foothill, San Joaquin and Solano-Colusa Vernal Pool Regions; range may be larger as this species was only recently described; potential threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.	No Potential	No vernal pools present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	FT/- -/-	Closely associated with elderberry shrubs (<i>Sambucus</i> sp.) for food and reproduction; usually along rivers and streams; eggs laid on bark, and larvae hatch and burrow into the stems; adults eat elderberry leaves and flowers; stem diameter must be minimum one inch; exit holes in stems are most common methods for identification; ranges from southern Shasta County to Fresno County.	No Potential	No elderberry shrubs observed near WWTF, and they are not expected to be present in the urban areas.
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	FE/- -/-	Occur in wide variety of ephemeral wetland habitats from 6.5 square feet to 88 acres in size; majority of occurrences found on High Terrace landforms and Redding and Corning soils; minimum 25 days to mature; average age to reproduction is 54 days; predators of vernal pool fairy shrimp; eggs laid in spring and persist through dry season as cysts; current distribution is in Central Valley and San Francisco Bay area; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.	No Potential	No vernal pools present.
<i>Lindneriella occidentalis</i> California lindneriella	-/- -/-SS	Most widely distributed fairy shrimp in California; found in vernal pools from 10.8 square feet to 13 acres supported by most land forms, geologic formations, and soil types; vernal pool types may include swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities; minimum 31 days to maturity with average 43 days to reproduce; eggs laid in spring and persist through dry season as cysts; current distribution is from Central Valley and coast ranges; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.	No Potential	No vernal pools present.
<i>Lytta molesta</i> molestan blister beetle	-/- -/-SS	Often found on flowers of native plant species; may be associated with dried vernal pools; adults are herbivorous, with many species feeding mostly on flowers, but some feed on foliage; distribution not well understood but known from Central Valley from Contra Costa County to Tulare and Kern Counties.	No Potential	No vernal pools present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Fish				
<i>Hypomesus transpacificus</i> delta smelt	FT/SE -/-	Small fish endemic to the San Francisco Estuary and the larger Sacramento-San Joaquin Delta; moves between freshwater and low salinity water throughout year; most spawning happens in tidally influenced backwater sloughs and channel edgewaters; historical distribution did not extend beyond Mossdale on the San Joaquin River and Sacramento on the Sacramento River.	No Potential	Project site is upstream of Mossdale; species does not occur in the area.
<i>Mylopharodon conocephalus</i> hardhead	-/- -/SSC	Found in small to large streams in low- to mid-elevation in relatively undisturbed habitats; also in lakes or reservoirs; found in clear, cool, deep streams with a slow but present flow; bottom feeders that focus on invertebrates and aquatic plant material from stream substrates; spawning typically on gravel and rocky substrates; widely distributed: Sacramento-San Joaquin and Russian River drainages, Pit River in Modoc County to Kern River; in San Joaquin drainage can be found in tributary streams but rarely in valley reaches of the river; absent from Cosumnes River.	No Potential	Species may occur in Black Rascal Creek, but this is outside of the Project boundary. Other drainages within the boundary are dry much of the year.
<i>Oncorhynchus mykiss irideus</i> steelhead - Central Valley DPS	FT/- -/-	Anadromous fish species, living in saltwater but spawning in fresh water; spawn from December through April; spawn in small, cool streams and tributaries in gravel substrates; seven inch-minimum depth to support migration; ocean and spawning habitats must be connected.	No Potential	No suitable riverine habitat present.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	FT/ST -/WL	Occurs in ephemeral pools or ponds that mimic them, and that remain inundated for 12 weeks or more; can occupy artificial ponds (ranch stock ponds) if ponds are allowed to go dry in the summer; requires nearby upland habitat containing small mammal burrows or crevices that provide refugia; restricted to grasslands and low foothills; lives underground most of the year.	No Potential	No vernal pool habitat present. Closest mapped vernal pool habitat is >3 kilometers (>2 miles) to the northeast, greater than the dispersal distance for this species. Area surrounding project is heavily disturbed for urban and agricultural uses.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Lithobates pipiens</i> northern leopard frog	-/- -/SSC	Highly aquatic; occurs in quiet aquatic habitats with permanent or semi-permanent water; shoreline cover and/or emergent vegetation important; breeds in emergent wetlands; uncommon and localized in California; Found in Modoc County and possibly eastern Lassen County, and along the Colorado River and irrigated areas in Imperial, Tulare, and Kern Counties; may have been introduced in many areas; elevation range from sea level to 7,000 feet.	No Potential	Project is located outside of the known range of the species.
<i>Rana draytonii</i> California red-legged frog	FT/- -/SSC	Occurs primarily in and near ponds in forests, woodlands, grasslands, coastal scrub, and stream sides with plant cover; mostly in lower elevations; breeding habitat may be permanent or ephemeral; estivates in animal burrows or other moist refuges when ephemeral habitat is dry; endemic to California and northern Baja California; found throughout coastal California from Mendocino County south; inland distribution includes northern Sacramento Valley and foothills of Sierra Nevada south to Tulare County (possibly Kern County); elevation from sea level to 5,000 feet.	No Potential	Marginal habitat may be present in Black Rascal Creek, which is outside of the Project boundary.
<i>Spea hammondi</i> western spadefoot	-/- -/SSC	Species relies on vernal pools for breeding where predators cannot become established; open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains; endemic to California and northern Baja California; distribution from Redding south throughout Central Valley and foothills, throughout South Coast Ranges into coastal southern California to Transverse mountains and Peninsular mountains; elevation from sea level to 4,500 feet.	No Potential	No vernal pools present.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Reptiles				
<i>Actinemys [=Emys] marmorata</i> western pond turtle	-/- -/SSC	Highly aquatic and diurnally active; found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky/muddy bottoms; wide variety of habitats; need basking areas near water (logs, rocks, vegetation mats, banks); may enter brackish water and even seawater; digs nest on land near water; range from north of San Francisco Bay area south, including Central Valley.	Potential	Marginal habitat occurs in and adjacent to the Project site at the WWTF. Other drainages may provide movement opportunities during the wet season.
<i>Anniella pulchra</i> northern California legless lizard	-/- -/SSC	Occurs in moist warm loose soil with plant cover in many habitat types, especially dunes, grassland, chaparral, and coastal scrub; moisture is essential; surface cover may include leaf litter, rocks, flat boards; most common in Coast Ranges; scattered occurrences on San Joaquin Valley floor from San Joaquin County south and along the western slope of the Sierra Nevada; elevation range from sea level to 6,000 feet.	No Potential	Grassland habitat present at WWTF, but necessary moisture is lacking.
<i>Gambelia sila</i> blunt-nosed leopard lizard	FE/SE -/FP	Occurs in semiarid habitats within the southern Central Valley and Cuyama Valley; habitats typically are flat and have large open areas with scattered shrubs for refuge; uses small mammal burrows for shelter; spends most of year underground, surfacing in spring/early summer to breed and eat; hatchlings surface in fall to eat; may interbreed with long-nosed leopard lizard in Cuyama Valley; threatened by habitat loss/fragmentation and drought; elevation from 100-2,400 feet.	No Potential	Suitable habitat not present. There are no records of this species within 10 miles of the Project site.
<i>Phrynosoma blainvillii</i> Blainville's [=coast] horned lizard	-/- -/SSC	Prefers sandy/loose soils in grassland, forests, woodlands, and open chaparral; often found along sand washes and dirt roads with scattered shrubs for refuge; specialized in consuming ants; distribution includes coastal California from Baja California north to the Bay Area, southeastern desert regions, southern Central Valley flats and foothills and surrounding mounts on drier, warmer slopes; threatened by habitat loss/fragmentation and spread of invasive ant species displacing native prey; elevation from sea level to 8,000 feet.	No Potential	Suitable habitat absent. The closest recorded occurrence is located 9.56 miles southwest of the Project site.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Thamnophis gigas</i> giant gartersnake	FT/ST -/-	Highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches; prefers vegetation close to water for basking; does not venture more than 200 feet from aquatic habitat; elevation from sea level to 400 feet; endemic to California; currently ranges from Glenn County to southern edge of San Francisco Bay Delta, and from Merced County to northern Fresno County.	No Potential	No suitable habitat present.
Birds				
<i>Agelaius tricolor</i> tricolored blackbird	-/SCT -/SSC	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies are minimum ~50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas. Occurs in densely vegetated valley and foothill grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes; favors native grasslands with a mix of grasses, forbs and scattered shrubs; loosely colonial when nesting; summer resident and breeding in west of Cascade-Sierra Nevada crest from Mendocino to Trinity counties, south to San Diego County; largely insectivorous.	No Potential	No suitable emergent wetland habitat present.
<i>Aquila chrysaetos</i> golden eagle	-/- -/SFP, WL	Occurs in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower and upper montane coniferous forests, pinon & juniper woodlands, valley & foothill grassland; prefers rolling foothills, mountain areas, sage-juniper flats, and desert for foraging; nests in cliff-walled canyons and isolated large trees in open areas; elevational range from sea level to 11,500 feet; may desert nest early in incubation phase if disturbed by humans.	No Potential	The Project does not provide nesting habitat for the species. In central California, nests primarily in open grasslands and oak (<i>Quercus</i> spp.) savanna and to a lesser degree in oak woodland and open shrublands.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Athene cunicularia</i> burrowing owl	-/- -/SSC	Occupies variety of open, semi-arid to arid habitats throughout central and southern California, including desert regions; prefers open habitats with few shrubs or trees; most active around sunrise and sunset; utilizes burrows constructed by mammals year-round for shelter and nesting; well documented in urban areas where patches of undeveloped areas are present (e.g., canals, airports, drainage basins), and in areas of dense agricultural development where, particularly where canals provide burrow habitat; forages primarily for rodents and insects within several miles of burrow, usually in open grassy habitats if available; has been observed hunting bats and insects around parking lot lights; threats include development resulting in habitat loss/fragmentation.	Potential	The Project site could provide foraging and nesting habitat. There are 8 CNDDDB records of this species within 10 miles of the Project site. The closest record is located 1.01 miles west of the Project site.
<i>Buteo regalis</i> ferruginous hawk	-/- -/WL	Does not breed in California; found in open grasslands in Central Valley, Coast Ranges, and Modoc Plateau; preys upon small mammals.	No Potential	The species does not breed in California. The Project does not provide suitable foraging habitat for this species.
<i>Buteo swainsoni</i> Swainson's hawk	-/ST -/-	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late September; forages in grassland, open scrub, and grain fields, primarily for rodents.	Potential	There is potential for this species to be present as a transient or forager. May nest on periphery of Project site or nearby within 0.5 mile of the project site. There are 17 CNDDDB records of this species within 10 miles of the Project site. The closest record is located 0.26 mile east of the Project site.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Charadrius montanus</i> mountain plover	-/- -/SSC	Does not breed in California; winter resident from September-March; occurs in grasslands, open sagebrush, and plowed fields throughout central and southern California, except desert regions; feeds on large insects, especially grasshoppers.	No Potential	This species does not nest in California, and the aggregate occur in large flocks in the winter, usually in large tracts of grasslands. There will be no significant impacts to this species because there is only wintering habitat in California
<i>Haliaeetus leucocephalus</i> bald eagle	FD/SE -/SFP	Permanent resident; occurs in forested habitats near water; restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties; other scattered breeding occurrences throughout California; not found in high Sierra Nevada; common winter migrant near inland waters in southern California; feeds primarily on fish by swooping from hunting perches; will wade into shallow water to pursue fish; will pursue displaced small mammals in flooded fields; scavenges dead fish and other animals; nests in large, old-growth, or dominant live tree with open branchwork near open water; nests most often in stands with less than 40% canopy, usually in largest tree in stand.	No Potential	Habitat for this species is absent from the Project site. This species does not nest on the valley floor and they typically winter in areas with little to no human activity. This species requires perching habitat as well that requires tall trees (<165 feet) to forage.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Mammals				
<i>Antrozous pallidus</i> pallid bat	-/- -/SSC	Occurs throughout California in wide variety of habitats: grasslands, shrublands, woodlands, forests up through mixed conifer; most common in open, dry habitats with rocky areas for roosting; yearlong resident; feeds mainly on insects and arachnids on the ground or by gleaning; day roosts in caves, crevices, mines, and occasionally hollow trees and buildings, including bridges; night roosts in more open sites; maternity colonies form early April with young flying by July or September; needs water; very sensitive to disturbance of roosting sites.	No Potential	Species not expected to occur in urban areas due to sensitivity to disturbance; no suitable trees within WWTF area.
<i>Dipodomys heermanni dixonii</i> Merced kangaroo rat	-/- -/SS	Subspecies occurring on the east side of the San Joaquin Valley (Lower Sonoran Zone) in open, sandy or dusty grassland habitats; recorded at Snelling, near Merced Falls, and below Lagrange, in Merced and Stanislaus counties.	No Potential	Grassland habitat present but subject to periodic plowing and no evidence of kangaroo rat present observed.
<i>Dipodomys ingens</i> Giant kangaroo rat	FE/SE -/-	Occurs in six major geographic units: Panoche Region, Kettleman Hills, San Juan Creek Valley, western Kern County (Lokern, Elk Hills, McKittrick, Taft, and Maricopa), Carrizo Plain Natural Area, and Cuyama Valley; prefers native annual grassland and shrubland habitats with vegetated annual grass and forbs and scattered desert shrubs; found at elevations between 280 to 2,800 feet; burrow on level or gentle slopes with friable, sandy, well-drained soils; nocturnal foraging species; threatened by habitat loss, fragmentation, and degradation, and drought; also threatened by land conversions to agricultural, industrial, and urban developments	No Potential	Grassland habitat present but subject to periodic plowing and no evidence of kangaroo rat present observed.
<i>Dipodomys nitratooides exilis</i> Fresno kangaroo rat	FE/SE -/-	Occurs on alkali open grassland on bare alkaline clay-based soils; nocturnal species; burrows with tunnels approximately 12 to 15 inches below ground; threatened by predation and disease; historically occurred on the valley floor in Kings, Fresno, Madera, and Merced counties, but may be extirpated.	No Potential	Grassland habitat present but subject to periodic plowing and no evidence of kangaroo rat present observed.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Eumops perotis californicus</i> western mastiff bat	-/- -/SSC	Occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward; also in urban areas; feeds on insects captured in flight; roosts in cliff faces, high buildings, trees, and tunnels; nursery roosts most often in tight rock crevices or crevices in buildings; maternity season begins in March with young flying on their own by September.	Potential	Suitable habitat may be present in larger trees and buildings in urban areas.
<i>Lasiurus blossevillii</i> western red bat	-/- -/SSC	Locally common in areas from Shasta County to Mexican border, west of the Sierra Nevada/Cascade crests; migrates between summer and winter ranges; roosts in forests and woodlands from sea level up through mixed conifer forests; not in deserts; feeds on insects over grasslands, shrublands, open woodlands and forests, and croplands; roosts primarily in trees on edge habitats near streams, fields, or urban areas, less often in shrubs; requires water; maternity season from late May through early July; usually does not roost with other bats; rabies is common in this species.	Potential	Suitable roosting and foraging habitat present.
<i>Lasiurus cinereus</i> hoary bat	-/- -/SS	Can be found anywhere in California from sea level to 13,200 feet; winters on coast and in southern California; breeds inland and north of winter range; bear young in woodlands and forests; feeds primarily on moths; roosts in dense foliage of medium-large trees; requires water; prefer open habits or habitat mosaics; maternity season from mid-May through early July; forages with other bat species; high incidence of rabies.	No Potential	No suitable woodlands or forests.
<i>Myotis yumanensis</i> Yuma myotis	-/- -/SS	Common throughout California except desert regions; wide variety of habitats from sea level to 11,000 feet; prefers open forests and woodlands with sources of water; forages for small fly insects over water sources; roosts in buildings, mines, caves, or crevices, occasionally in swallow nests and under bridges; large maternity colonies; maternity season from late May through June, sometimes September.	No Potential	No suitable woodlands or forests.
<i>Perognathus inornatus</i> San Joaquin Pocket Mouse	-/- -/SS	Occurs in dry, open grasslands or scrublands on fine-textured soils in the Central (mostly west side) and Salinas valleys; elevation from 1,100 to 2,000 feet; feeds primarily on seeds; digs burrows for cover and breeding; nocturnal.	No Potential	Grassland habitat present but subject to periodic plowing.

Appendix E – Special-Status Database Search Results

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
<i>Taxidea taxus</i> American badger	-/- -/SSC	Occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils; feeds mostly on fossorial rodents; digs burrows for cover and reproduction; can dig new den each night; litters born mostly in March and April; somewhat tolerant of human activities but avoids cultivated agricultural habitats.	Potential	Suitable grassland habitat present near WWTF. Most of parcel is plowed periodically, but areas not plowed could support dens.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/ST -/-	Endemic to the Central Valley; found primarily in San Joaquin Valley, Carrizo Plain, Salinas Valley, Cuyama Valley, and other small valleys in western foothills; occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils; highly adaptable and documented in urban developed areas; uses burrows year-round for shelter, escape from predators, and rearing young; will use man-made structures, such as pipes, for denning; feeds primarily on small mammals, but will also consume birds, reptiles, insects, and scavenge for human food; intensively-maintained agricultural areas avoided; threatened by habitat loss and fragmentation, vehicle strikes, and disease; current mange outbreak in urban population in Bakersfield and in nearby natural areas.	Potential	Marginal habitat is located in the undeveloped areas on and near the project site. The species could be found on the site as a transient or forager. There are 4 CNDDDB records of this species within 10 miles of the Project site. The closest record is located 3.18 miles northwest of the Project site.

Source: CDFW 2019b 2019d, 2019e, USFWS 2019b, CNPS 2019

CRPR (California Rare Plant Rank):

- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:

- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

FE	Federally Endangered
FT	Federally Threatened
FD	Federally Delisted
SE	State Endangered
ST	State Threatened
SCT	State Candidate Threatened
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
WL	Watch List

APPENDIX F

***U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF
THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE
(USFWS 2011)***

FRANKLIN COUNTY WATER DISTRICT SEWER REHABILITATION PROJECT

APPENDIX D

PALEONTOLOGICAL RESOURCE ASSESSMENT

October 25, 2019

Desmond Johnston
Quad Knopf, Inc.
2816 Park Avenue
Merced, CA 95348
Transmitted via e-mail to Des.Johnston@qkinc.com

RE: Paleontological Identification Report:
Franklin County Water District Sewer Rehabilitation Project, Merced County, California

Dear Mr. Johnston,

Quad Knopf, Inc. retained Applied EarthWorks, Inc. (Æ) to complete a paleontological resource assessment for the Franklin County Water District (FCWD) Sewer Rehabilitation Project (Project), Merced County (County), California (Figure 1). The FCWD is proposing to repair or replace aging wastewater infrastructure that serves the residents of the unincorporated Community of Franklin-Beachwood. The Project will correct a number of deficiencies in the sewer line and improve operation of the existing wastewater treatment facility (WWTF).

Æ's scope of work included desktop review of geologic maps, paleontological literature and museum records searches, and preparation of this paleontological identification letter report. This report, which serves as a summary of findings, was written by staff who meet the qualifications standards of the Society of Vertebrate Paleontology (SVP, 2010) and satisfies the requirements of the California Environmental Quality Act (CEQA). The County is the lead agency for CEQA compliance. In addition, the Project will receive funding from the State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund, which is a federally funded program administered through the U.S. Environmental Protection Agency (USEPA). The SWRCB is the lead agency for federal compliance.

PROJECT DESCRIPTION AND BACKGROUND

The FCWD's service area is northwest of the city of Merced. It is bounded by Black Rascal Creek on the southeast and State Route 99 on the south, and includes the Franklin/Beachwood community as well as adjacent land. The Project area consists of approximately 26.83 acres identified for potential ground disturbance, which includes installation of new sewer line segments as well as excavations in existing and future portions of the WWTF. The Project area is mapped in Sections 14, 15, and 16 of Township 7 South, Range 13 East, Mt. Diablo Base and Meridian, on the Atwater, CA 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle (Figure 2).

The FCWD owns and operates the existing WWTF east of Franklin/Beachwood in the southwest quarter of Section 14 on the north side of Black Rascal Creek. The WWTF consists of a duplex pump lift station, a circular aeration treatment pond, and 12 evaporation/percolation ponds for effluent disposal. The disposal capacity of the effluent ponds is currently limited to approximately 0.4 million gallons per day (MGD), which is less than the facility's permitted capacity of 0.6 MGD. For the Project, the FCWD



proposes improvements to the WWTF to meet this disposal capacity as well as improvements to 21,723 linear feet of the aging sewer line to accommodate the new standard and prevent unsanitary conditions.

Improvements to the sewer line will be accomplished using a combination of traditional and trenchless methods. While all of the 21,723 linear feet proposed for improvement may be replaced, it is anticipated that only specific segments will require replacement, while the rest will only require repair. Segments that only require repair are anticipated to occur in the ground, which will not necessitate excavation in previously undisturbed areas. For segments that will require replacement, and therefore excavation into undisturbed areas, the old segments will be abandoned in place and capped at both ends, and new pipe will be installed parallel to them. Excavation is not anticipated to exceed a depth of 6 feet below ground surface (bgs).

In the existing WWTF, evaporation/percolation Pond No. 3 will be decommissioned for the construction of a new extended aeration-activated sludge facility (Figure 3; modified from AM Consulting Engineers, Inc., 2019:77). The proposed facility will be constructed in a new earthen embankment in the western portion of the existing pond. The basin will be excavated to increase its current depth of 4.7 feet bgs to 14 feet bgs. The existing lift station would remain in place. Approximately 51 linear feet of 12-inch pipe will convey influent wastewater from the lift station to the aerated lagoon reactor. Treated effluent will be conveyed to the other existing evaporation/percolation ponds as well as newly constructed evaporation/percolation Ponds 13, 14, and 15 for disposal. These will be built on approximately 20 acres of vacant land northeast of evaporation/percolation Pond 3, north of existing Ponds 11 and 12. Construction of these three ponds will require excavation to a depth of 5 feet bgs. The inclusion of the new ponds will increase the WWTF's disposal capacity from 0.4 MGD to 0.6 MGD. The anticipated maximum depths of disturbance for all proposed excavations are summarized in Table 1.

Table 1
Anticipated Maximum Depths of Disturbance

Proposed Feature	Maximum Depth (ft)
Sewer Line	6
Sludge Facility	14
Ponds	5

REGULATORY CONTEXT

This Project is subject to federal and state laws in addition to local goals and policies. The following section provides an overview of the relevant laws and regulations.

Federal

The Project will receive funding from the SWRCB Clean Water State Revolving Fund, which is a federally funded program administered through the USEPA. Other than the National Environmental Policy Act, no other federal laws concerning the protection or preservation of paleontological resources pertain to the Project because all improvements are proposed on nonfederal lands.



State

Paleontological resources are protected under CEQA, which requires detailed studies that analyze the environmental effects of a proposed project. If a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. Specifically, in Section VII(f) of Appendix G of the CEQA Guidelines, the Environmental Checklist Form poses the question: “Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” If paleontological resources are identified within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

Local

The County’s *General Plan Recreation and Cultural Resources Element* (County of Merced, 2013) includes paleontological resources under one of its policies:

- **Policy RCR-2.9: Historical and Cultural Resources Investigation, Assessment, and Mitigation Guidelines (RDR/MPSP)**
Establish and adopt mandatory guidelines for use during the environmental review processes for private and public projects to identify and protect historical, cultural, archaeological, and paleontological resources, and unique geological features.

The General Plan also includes the following implementation program for Policy RCR-2.9:

- **Program RCR-B: Historical and Cultural Resources Investigation, Assessment, and Mitigation Guidelines (MPSP/SO)**
Prepare and formally adopt guidelines and standards for the preparation of assessments of historical, cultural, archaeological, and paleontological resources, and unique geological features prepared pursuant to Policy RCR-2.9. At a minimum, the guidelines shall include resource survey guidelines covering personnel qualifications, research and field techniques, investigation and documentation, data collection and recordation, and resource preservation, avoidance, minimization, and mitigation strategies. The guidelines shall specify broad categories of acceptable mitigation consistent with Public Resources Code Section 21083.2 and State CEQA Guidelines Section 15126.4(b), as they may be amended for any identified adverse effects to historic and cultural resources, paleontological resources, or unique geological features.

PALEONTOLOGICAL RESOURCE POTENTIAL

Most professional paleontologists in California adhere to the guidelines set forth by the SVP (2010) to determine the course of paleontological mitigation for a given project on privately owned lands, unless specific city, county, state, or federal guidelines are available and required. The SVP’s guidelines establish detailed protocols for the assessment of the paleontological sensitivity of a project area and outline measures to follow in order to mitigate adverse impacts to known or unknown fossil resources during project development (SVP, 2010).

Following the SVP’s established process, baseline information is used to assign the paleontological sensitivity of a geologic unit(s) (or members thereof) to one of four categories—No Potential,



Undetermined, Low, and High (SVP, 2010). Geologic units are considered to be “sensitive” for paleontological resources and have a High Potential if vertebrate or significant invertebrate, plant, or trace fossils have been recovered anywhere in their extent, even if outside the Project area; or if the units are sedimentary rocks that are temporally or lithologically suitable for the preservation of significant fossils. The SVP considers significant fossils as those that contribute new and useful taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data (SVP, 2010).

METHODOLOGY

No field surveys were conducted for this investigation. To assess the paleontological sensitivity of geologic units exposed at the ground surface and thought to be in the Project area, Æ first reviewed published and unpublished geological maps and paleontological literature. Æ also retained the Natural History Museum of Los Angeles County (NHMLAC) to conduct a record search for fossil localities recorded in their collection. Only NHMLAC vertebrate paleontology records were searched, rather than all of the museum’s paleontology collections, because geologic units near the Project area are more conducive to the preservation of vertebrate fossils than significant invertebrate, plant, or trace fossils (McLeod, 2019). Lastly, Æ conducted a search of the online database of the University of California Museum of Paleontology (UCMP) paleontological collections, which include vertebrate, invertebrate, and plant fossils as well as microfossils from across California.

RESOURCE CONTEXT

The Project area is in the San Joaquin Valley portion of the Great Valley geomorphic province (California Geological Survey, 2002). A geomorphic province is a region of unique topography and geology that is distinguished from other regions based on its landforms and tectonic history (American Geological Institute, 1976). The Great Valley is an alluvial plain, approximately 50 miles wide and 400 miles long, bordered to the west by the Coast Ranges and to the east by the Sierra Nevada (California Geological Survey, 2002). It is divided into the Sacramento Valley portion in the north and the larger San Joaquin Valley portion in the south. The San Joaquin Valley occupies a trough created by the collision of the Pacific and North American plates and is subdivided into several regions by differences in tectonic deformation (Bartow, 1991; Galloway et al., 1999). Specifically, the Project area is in the least-deformed Northern Sierran Block, which consists of the stable east limb of the valley syncline from the Stockton Fault in the north to the San Joaquin River in the south.

Sediments within the San Joaquin Valley have been deposited almost continuously since the Late Jurassic Period, approximately 160 million years ago (Bartow, 1991). Lithologic analyses show the sediments are primarily sourced from the Sierra Nevada, with some contributions from the Coast Ranges (Bartow and Nilsen, 1990). Stratigraphically, offshore and nearshore marine sediments occur at the base of the basin, overlain by continental sediments derived largely from streams draining the mountains to the east as well as lakes in inundated portions of the valley floor (Galloway et al., 1999).

According to Wagner et al. (1991), the surficial geology of the entire Project area and majority of the immediate vicinity consists of Pleistocene geologic units—the Riverbank Formation (Qr) and the Modesto Formation (Qm) (Figure 4). Both are alluvial fan deposits deposited by Black Rascal Creek and Bear Creek (McLeod, 2019). As mapped, the Riverbank Formation covers small portions of the Project area in the eastern part of the FCWD Service Area just south of Santa Fe Drive to the west and east of



Bryant Road, and the Modesto Formation covers the remainder of the Project area. Additionally, Holocene alluvial deposits (Q) are mapped slightly to the south outside the Project area (Figure 4).

The fossiliferous Riverbank Formation was deposited from approximately 450,000 to 130,000 years ago during the Middle and Late Pleistocene, and consists of up to 200 feet of moderately consolidated, massive to well-bedded silty sand and clay primarily derived from the interior of the Sierra Nevada (Arkley, 1962; Marchand and Allwardt, 1981; Helley and Harwood, 1985). Moderately developed brown Snelling soils as well as reddish-brown San Joaquin soil and brown Madera soil with silica-cemented hardpans are typically derived from this formation (Arkley, 1962). The Riverbank Formation preserves vertebrate fossils of Irvingtonian and Rancholabrean age (Middle and Late Pleistocene), including mammoth, camel, saber-toothed cat, dire wolf, ground sloth, turtle, and others (Jefferson, 1991; Dundas et al., 2009), although their occurrences may be localized and unpredictable. LePage (pers. comm., 2019) estimates that deposits of the Riverbank Formation throughout many parts of the Central Valley accumulated at extremely slow rates, which would not have been conducive to the preservation of fossils.

Deposited from approximately 42,400 to 12,000 years ago during the Late Pleistocene, the fossiliferous Modesto Formation unconformably overlies the Riverbank Formation (Marchand and Allwardt, 1981). This geologic unit is composed of up to 100 feet of poorly to moderately consolidated massive to moderately bedded sands and silts primarily derived from the Sierra Nevada (Arkley, 1962; Marchand and Allwardt, 1981; Helley and Harwood, 1985). The Modesto Formation is associated with weakly to moderately developed Hanford, Greenfield, and Dinuba soils (Arkley, 1962). The Modesto Formation preserves vertebrate fossils of Rancholabrean age, including mammoth, bison, horse, ground sloth, rodent, and snake (Jefferson, 1991). Like the lithologically similar Riverbank Formation, fossil occurrences may be localized and unpredictable.

Holocene-age alluvial deposits are generally too young to contain fossilized material (SVP, 2010). While they do not typically yield significant and intact fossil material, they may shallowly overlie other deposits that may preserve fossils, such as the Riverbank and Modesto Formations.

RECORDS SEARCH RESULTS

McLeod (2019) reports no known vertebrate fossil localities in the Project area. However, he reports one NHMLAC locality nearby from sedimentary deposits similar to those in the Project area. LACM 7254 is an elephantoid (Proboscidea) specimen reported southeast of the Project area on the south side of Ash Slough, northeast of Chowchilla. The UCMP online paleontological database includes several fossil localities within Merced County, but none are listed from the geologic units within the Project area or the Holocene alluvial deposits nearby (UCMP, 2019).

FINDINGS AND RECOMMENDATIONS

Based on the results of the NHMLAC records search, McLeod (2019) suggests very shallow excavations in the soil and Quaternary alluvial deposits (Riverbank and Modesto Formations) exposed throughout the Project area may not uncover significant fossil vertebrate remains. However, deeper excavations may well encounter significant fossil vertebrate remains.



Æ used the SVP's (2010) sensitivity criteria to determine the paleontological resource potential of geologic units within the Project area. According to the results of the desktop studies and museum record searches, Æ assigns both the Riverbank and Modesto Formations, and therefore the entire Project area, as High Potential (Figure 5). As such, any excavations that extend below the uppermost soil and sediment layers may impact significant paleontological resources preserved within these units. This includes all Project-related excavations, as they are proposed to reach depths of 5–14 feet bgs. However, due to the localized and unpredictable occurrences of fossils in these units, their High Potential ranking may be subject to change following observations of the subsurface geology during excavation.

Æ recommends development of a Project-specific paleontological resource impact mitigation program (PRIMP) prior to issuance of grading permits for the Project. The PRIMP should be developed by a professional paleontologist (Project Paleontologist, Principal Investigator) who meets SVP (2010) qualifications standards. The PRIMP will specify the steps to be taken to mitigate impacts to paleontological resources. For instance, Worker's Environmental Awareness Program (WEAP) training should be prepared and presented in-person to all field personnel prior to the start of Project-related earth-moving activities. The PRIMP will specify whether construction monitoring is required, and, if so, the frequency of required monitoring (i.e., full-time, spot-check, etc.). The PRIMP also will provide details about bulk-sediment screening, fossil collection, analysis, and preparation for permanent curation at an approved repository. Lastly, the PRIMP will describe the different reporting standards to be used for negative or positive findings during construction activities.

It has been a pleasure assisting you with this Project. If you have any questions, please do not hesitate to contact me at (626) 578-0119 x403.

Sincerely,

Chris Shi
Paleontology Supervisor
Applied EarthWorks, Inc.

Edited and Approved By:

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Attachments: Figures 1–5
References

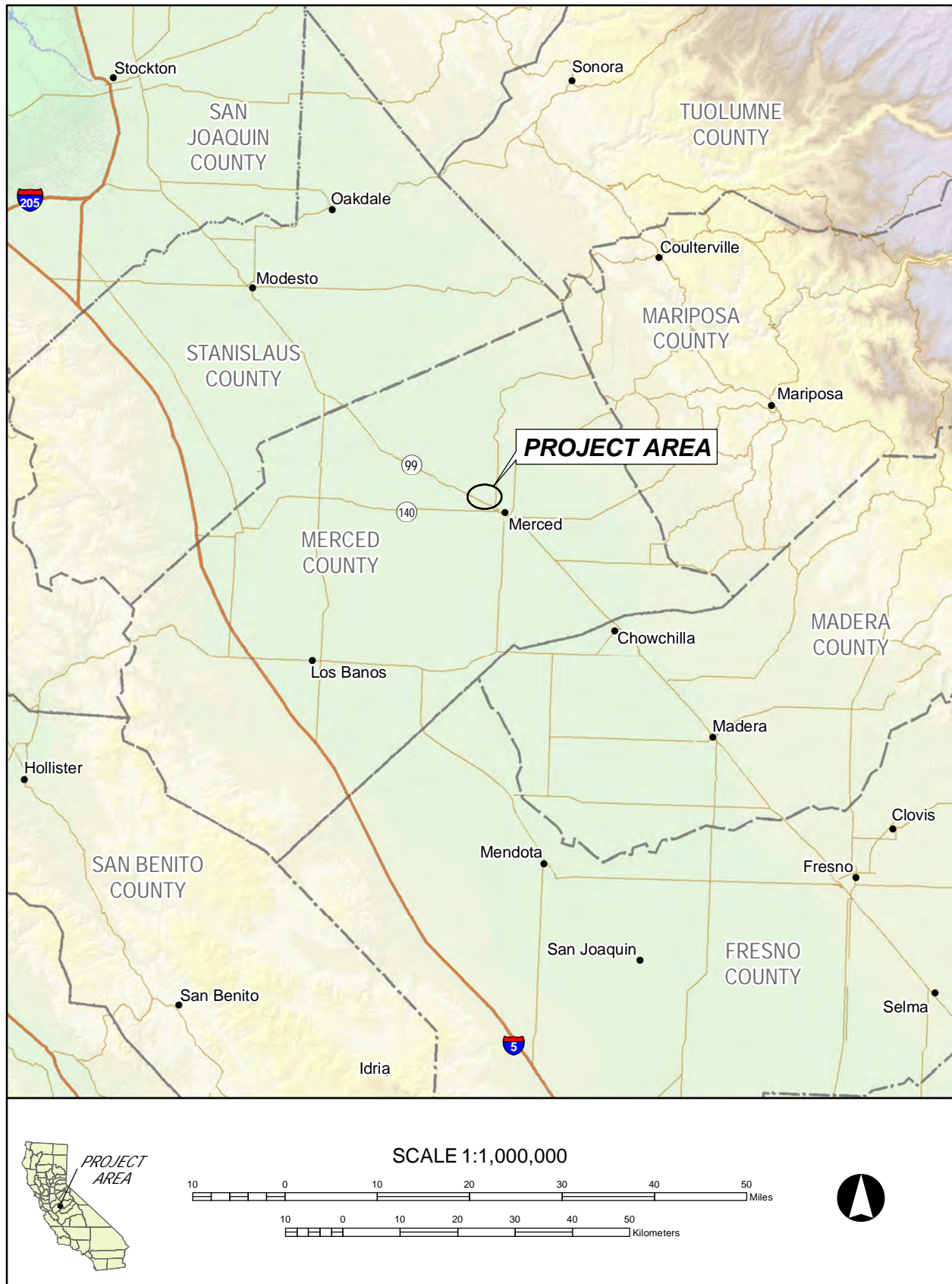


Figure 1 Project vicinity in Merced County, California.

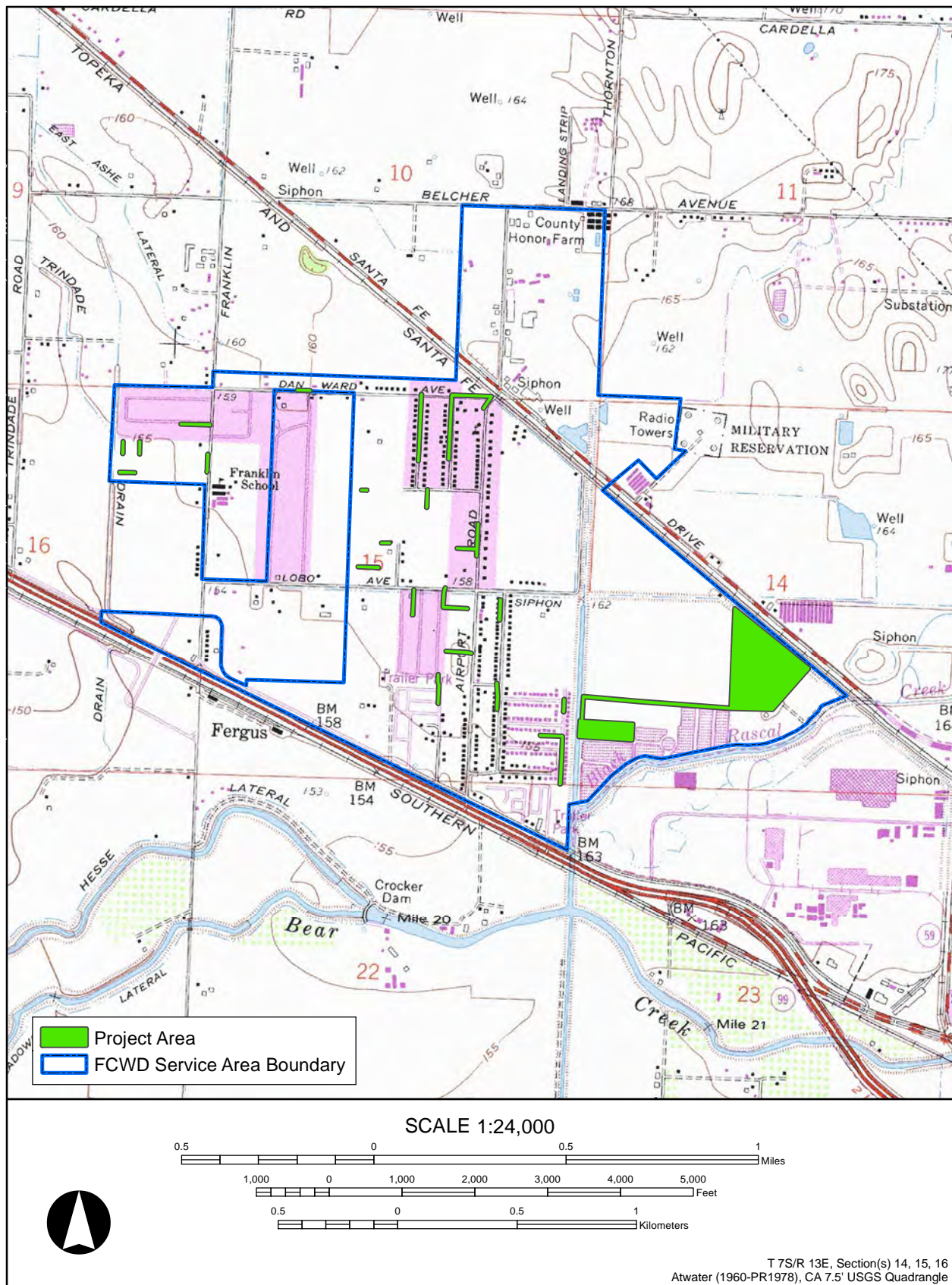


Figure 2 Project location on the USGS Atwater, CA 7.5-minute topographic quadrangle.



Figure 3 Proposed Percolation Ponds 1–15 (AM Consulting Engineers 2019:77).

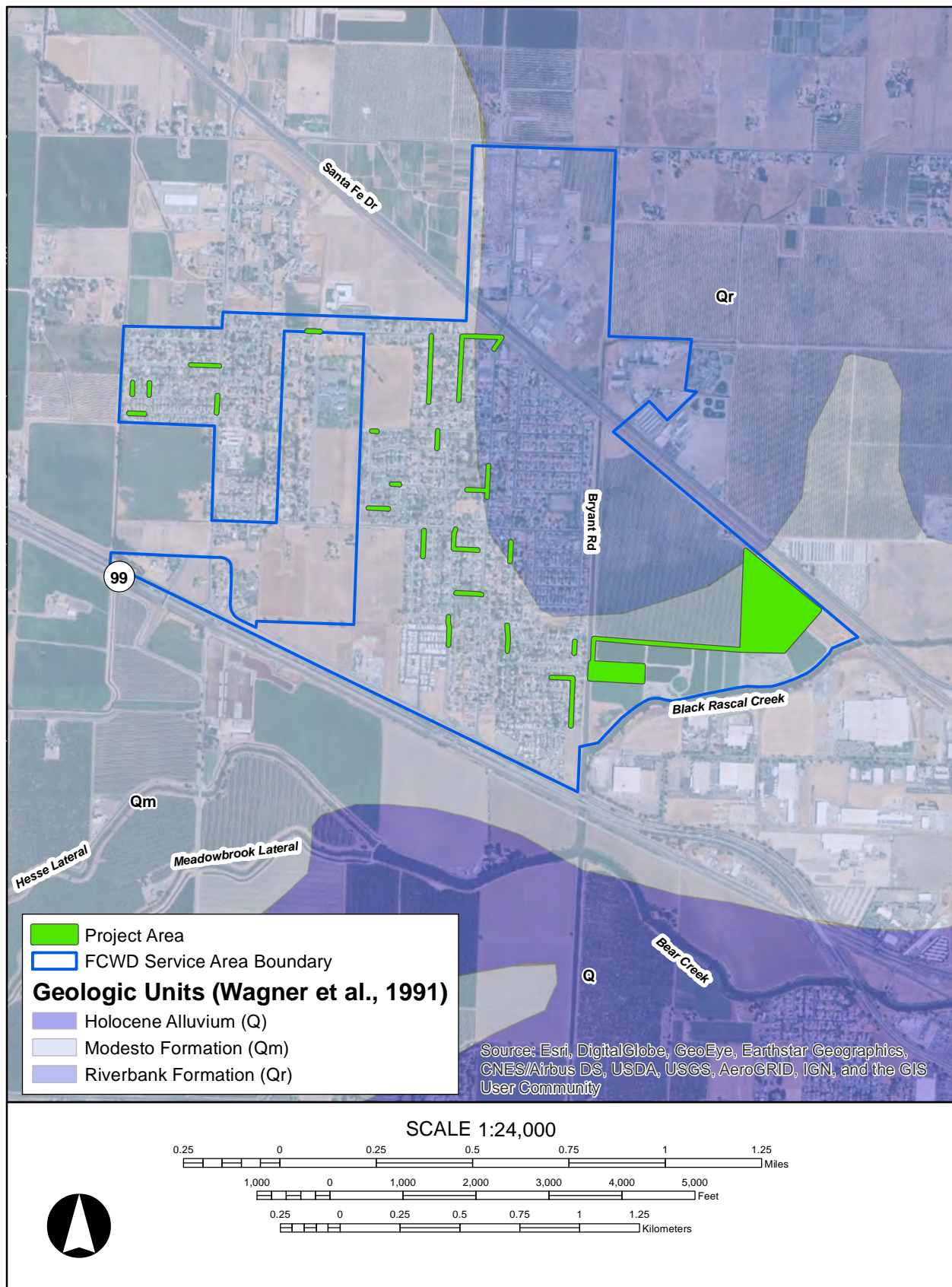


Figure 4 Geologic units in the Project area.

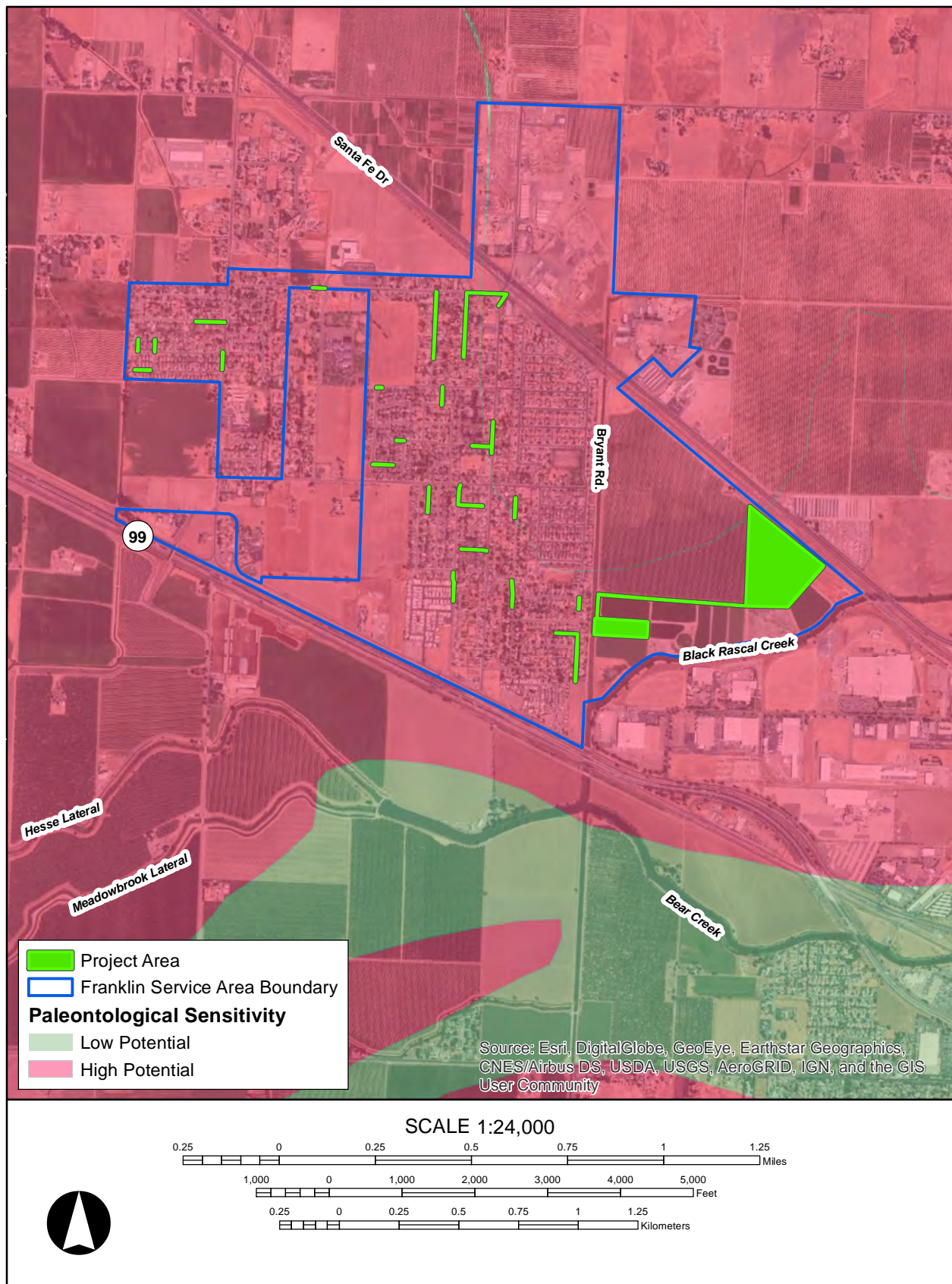


Figure 5 Paleontological sensitivity of the Project area.



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