PUBLIC REVIEW DRAFT

PROGRAMMATIC INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

FOR THE

LOCKEFORD COMMUNITY SERVICES DISTRICT WASTEWATER FACILITIES MASTER PLAN

Lockeford, CA

January 3, 2023

Prepared for:
LOCKEFORD COMMUNITY SERVICES DISTRICT
17725 N. Tully Road
Lockeford, CA 95237

Prepared by:
BaseCamp Environmental, Inc.
802 W. Lodi Avenue
Lodi, CA 95240

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17725 N. Tully Road
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209-727-5035

Prepared by:

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN THIS DOCUMENT

AB	Assembly Bill
ADWF	average dry weather flow
ARB	California Air Resources Board
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CSD	(Lockeford) Community Services District
CUPA	Certified Unified Program Agency
dB	decibel
DTSC	Department of Toxic Substances Control
EDU	equivalent dwelling unit
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
gpm	gallons per minute
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	Day-Night Average Level
L_{eq}	average or equivalent continuous sound level
LOS	Level of Service
mgd	million gallons per day
MRZ	Mineral Resource Zone
NO_x	nitrogen oxide
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter 10 micrometers or less in diameter
$PM_{2.5}$	particulate matter 2.5 micrometers or less in diameter
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SOI	Sphere of Influence

SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
VMT	vehicle miles traveled
USFWS	U.S. Fish and Wildlife Service
WDR	Waste Discharge Requirement
WWTP	Wastewater Treatment Plant

NEGATIVE DECLARATION

A. General Project Information

Project Title:	Lockeford Community Services District (CSD) Wastewater Facilities Master Plan
Lead Agency Name and Address:	Lockeford Community Services District 17725 N. Tully Road Lockeford, CA 95237
Contact Person and Phone Number:	Joseph Salzman, General Manager 209-727-5035
Project Location:	Lockeford, California and vicinity
Project Sponsor Name and Address:	Lockeford Community Services District 17725 N. Tully Road Lockeford, CA 95237
General Plan Designation:	Designations vary throughout the project area
Zoning:	Zoning varies throughout the project area
Project Description:	The proposed project is the adoption and implementation of a multi-phase Wastewater Facilities Master Plan (Master Plan). The Master Plan addresses a range of planned improvements to the CSD's wastewater collection, treatment, and disposal systems that will be needed to serve anticipated new development within the CSD's existing service area and Sphere of Influence. The project would also provide for beneficial reuse of treated effluent to recharge the underlying groundwater basin through recharge ponds for the purpose of replenishing the CSD potable water source. Improvements associated with the Master Plan are also intended to provide the CSD with options for compliance to comply with recent revisions to the Regional Water Quality Control Board's Basin Plan for nitrate control in effluent discharges, and, to a lesser extent, for salt.

Surrounding Land Uses and Setting:	The proposed Master Plan covers the CSD's existing service area and its Sphere of Influence. The service area includes the community of Lockeford and nearby developed areas. The Sphere of Influence includes areas planned for future development, such as the Lockeford Vista, Lockeford Oaks and Kautz properties. Beyond the developed areas is rural land used for agricultural production.
Other Public Agencies Whose Approval is Required:	San Joaquin County (encroachment permits), California Department of Transportation (encroachment permits), Central Valley Regional Water Quality Control Board for Waste Discharge Requirements, Division of Drinking Water of the SWRCB for approval of Title 22 Engineering Report.
Have California Native American affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?	AB 52 notification has been sent to tribes requesting project notification. Only Confederated Villages of Lisjan Nation requested project notices. Tribe has requested additional information about the project. No consultation initiated.

B. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project. These include as a whole or by individual project components impacts that would be "Potentially Significant Impact" prior to mitigation, as indicated by the checklist and associated discussion in Section 3.0 of the attached Initial Study.

	Aesthetics		Agriculture/Forestry Resources	✓	Air Quality
✓	Biological Resources	✓	Cultural Resources		Energy
✓	Geology/Soils		Greenhouse Gas Emissions	✓	Hazards/Hazardous Materials
✓	Hydrology/Water Quality		Land Use		Mineral Resources
✓	Noise		Population/Housing		Public Services
	Recreation	✓	Transportation	✓	Tribal Cultural Resources

✓	Utilities/Service Systems	✓	Wildfire	✓	Mandatory Findings of Significance

C. Lead Agency 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 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the 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.

LOCKEFORD COMMUNITY SERVICES DISTRICT

_____ _____

Joseph Salzman, General Manager Date

1.0 INTRODUCTION

1.1 Project Brief

This document is a Programmatic Initial Study/Mitigated Negative Declaration (IS/MND) for proposed adoption and implementation of the Lockeford Community Services District (CSD) Wastewater Facilities Master Plan, hereinafter referred to as the "Master Plan" or the "project." The multi-element Master Plan addresses planned wastewater collection, treatment, and disposal facilities, in and adjacent to the unincorporated community of Lockeford in northeastern San Joaquin County (Figures 1-1 through 1-4). This IS/MND has been prepared in compliance with the requirements of the California Environmental Quality Act (CEQA). For the purposes of CEQA, the Lockeford CSD is the Lead Agency for the project. The Lockeford CSD is assumed to be the proponent for each of the wastewater system improvements described in the Master Plan.

The Master Plan estimates wastewater flows and characteristics generated by the Lockeford community over a 30-year planning period and describes improvements to the existing CSD wastewater collection, treatment, and disposal systems needed to provide wastewater conveyance, treatment and disposal resulting from population growth and development. At the same time, the Master Plan seeks to put the CSD's treated effluent to beneficial use in recharging the underlying groundwater aquifer as a program to replenish the CSD's groundwater supply. The Master Plan is also intended to provide approaches for the CSD to comply with recent revisions to the Central Valley Regional Water Quality Control Board (RWQCB) Basin Plan for nitrate control in effluent discharges and to a lesser extent salt. The Master Plan will be presented to the LCSD Board of Directors in March 2023; the Master Plan is available for review on request.

Adoption of a utility Master Plan is not necessarily subject to CEQA review, since plan adoption would have no direct effects on the physical environment. The LCSD has, however, decided to provide CEQA review for the Master Plan and the likely physical improvements associated with Plan implementation in this Programmatic IS/MND. The purpose of the Programmatic IS/MND is to comprehensively define the potential environmental effects of the planned Master Plan improvements. The programmatic review can then be used to streamline the future CEQA review of individual improvement projects. Methods for conducting CEQA review of future improvement projects using the Programmatic IS/MND are described in Section 1.3.

1.2 Purpose of Initial Study

CEQA requires that public agencies document and consider the potential environmental effects of the agency's discretionary actions that meet CEQA's definition of a "project." Briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project may include the agency's direct activities as well as activities that involve public agency approvals or funding. Guidelines

for an agency's implementation of CEQA are found in the "CEQA Guidelines" (Title 14, Chapter 3 of the California Code of Regulations).

Provided that a project is not exempt from CEQA, the first step in the agency's consideration of its potential environmental effects is the preparation of an Initial Study. The purpose of an Initial Study is to determine whether the project would involve "significant" environmental effects, as defined by CEQA. If the Initial Study does not identify significant effects, then the agency prepares a Negative Declaration. If the Initial Study notes potential significant effects and identifies mitigation measures that would reduce these significant effects to a level that is less than significant, then the agency prepares a Mitigated Negative Declaration. If a project would involve significant effects that cannot be readily mitigated, then the agency must prepare an Environmental Impact Report. The agency may also decide to proceed directly with the preparation of an Environmental Impact Report without an Initial Study.

The CSD has determined that an Initial Study will be prepared to evaluate the project and its potential for significant environmental effects. This Initial Study describes the proposed project and its environmental setting, discusses the potential environmental effects of Master Plan implementation, and identifies feasible mitigation measures that would avoid or eliminate significant environmental effects or reduce them to a level that would be less than significant. The Initial Study considers the project's potential for significant environmental effects in the following subject areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance (including Cumulative Impacts)

This Initial Study concludes that implementation of the project would have potentially significant environmental effects, all of which would be avoided or reduced to a level that would be less than significant with recommended mitigation measures listed in Table 1-1 of the Initial Study. These mitigation measures would be applicable to the future with individual wastewater improvement projects described in the Master Plan and as documented would reduce the environmental impacts of the individual projects to a less than significant level. The Lockeford CSD has accepted all the recommended mitigation measures. As a result, the CSD has prepared a Mitigated Negative Declaration (page vi) and has issued a Notice of Intent to adopt the IS/MND.

1.3 Use of Initial Study in Future CEQA Reviews

The project is the adoption of a Master Plan for a range of future improvements to the Lockeford CSD wastewater system. These improvements would consist of individual projects, each of which could have direct effects on the physical environment and therefore would require CEQA review. The purpose of this IS/MND is to evaluate these projects, individually and cumulatively, at a programmatic level, specifically identifying potential effects and mitigation for significant environmental effects that may be associated with one or more of the individual projects.

The CSD intends to use the Programmatic IS/MND as a "tiering" document to streamline the CEQA review of individual projects as they are considered by the CSD. If the potential impacts of an individual project are found to be adequately addressed by the environmental impact analysis in this IS/MND, and the CSD will implement the mitigation measures described in the IS/MND, then the CSD may find that the project is adequately addressed by the IS/MND. Depending on the circumstances, the CSD may also adopt an Addendum or supplement to the IS/MND that makes minor changes specific to the individual project, in accordance with CEQA Guidelines Sections 15162 - 15164.

Alternatively, if an existing facility is proposed to be replaced by another facility on the same site with substantially the same purpose and capacity, the replacement project would be eligible for a Class 2 categorical exemption under CEQA Guidelines Section 15302. Being exempt, such a project would not require review under the Programmatic IS/MND Under this circumstance, a Notice of Exemption would be prepared and submitted to the County Clerk to document completion of the CEQA review.

If an individual project has impacts that are not described in this IS/MND, then the CSD would conduct a CEQA review that is focused on the impacts not covered by this IS/MND. This can be accomplished with either a project-specific IS/MND or a subsequent IS/MND prepared in accordance with CEQA Guidelines Section 15162.

1.4 Project Background

The Lockeford CSD is a special district empowered to provide water supply; sewage collection, treatment, and disposal; and park and recreation services to the unincorporated community of Lockeford, which had an estimated 2020 population of 3,016 (Lockeford CSD 2021). The existing CSD service area consists of approximately 894 acres situated between the Mokelumne River and Bear Creek, including the recently annexed 105 acres known as the Kautz property. The CSD existing of Sphere of Influence, includes the service area and an additional 140 acres for a total of 1,034 acres.

Existing CSD Wastewater System (CEQA Baseline)

The CSD operates an existing wastewater system that collects wastewater from residences and businesses in the CSD service area, treats the collected wastewater, and disposes of the treated wastewater. The CSD wastewater collection system consists of six- to eight-inch diameter gravity flow sewer lines (Figure 2-1. In addition, the system also includes six and

eight-inch force mains that conduct wastewater collected in the gravity system at the Locke and Bear Creek Pump Stations to the wastewater treatment plant.

Wastewater collected by the gravity lines is conveyed to the Locke Road and Bear Creek pump stations; each pump station has two pumps, although the Locke Road pump has greater horsepower (20 vs. 7.5 for Bear Creek). These main pump stations are connected by a six-inch diameter force main. Two other pump stations, Lockhaven and Bluff Drive, serve existing residential areas not subject to additional development; wastewater flows from these areas are pumped to the main pump stations through interconnecting gravity sewers. Currently, total system conveyance capacity is limited by the Locke Road and Bear Creek pump stations; the capacities of both pump stations are reached during peak wet weather flow conditions, which, if exceeded, can lead to sanitary sewer overflows. The Bear Creek Pump Station, as it exists, is also limited by the wet well dimensions (five feet in diameter), and station expansion is limited by adjacent residential properties on three sides and North Tully Road right-of-way on the fourth (Lockeford CSD 2021).

The wastewater treatment plant (WWTP), located at the southwest corner of Brandt Road and Tully Road, currently treats an average dry weather flow (ADWF) of 0.19 million gallons per day (mgd), approximately 70% of which comes from the Locke Road Pump Station and the remainder from the Bear Creek Pump Station. The WWTP consists of one aerated treatment pond and three effluent storage basins that provide equivalent secondary treatment of wastewater. The storage ponds retain the treated effluent from the aeration treatment pond outside the irrigation season, which is typically from April 1st through October 31st.

Effluent disinfection is employed when effluent is conveyed to the remote storage pond through chlorine injection and contact provided by the effluent piping's 500-foot long, 27-inch diameter reinforced concrete pipe located between storage ponds S-2 and S-3. The existing WWTP chlorination system is housed in the chlorine room of the control building and includes provisions for chlorine gas supply from 150-pound cylinders to two manually set and adjusted wall-mounted gas chlorinators.

The effluent at the WWTP, after disinfection, is discharged via two pumps to a remote storage basin located approximately 1,500 feet south of the WWTP. Effluent disposal from this remote basin is handled by irrigation of pasture grasses on an adjacent 116-acre parcel also owned by the CSD, called Reclamation Area 1(Figure 2-3).A second area, an approximately 60-acre parcel 800 feet southeast of the WWTP, was purchased by the CSD for use as Reclamation Area 2 but is not presently in use. Potential construction of infrastructure and ponds to allow the use of Reclamation Area 2 for effluent disposal is evaluated for in the proposed Master Plan.

Existing Wastewater Master Plan

The CSD adopted its current Wastewater Master Plan in 1997. The 1997 plan anticipated a total of 1,077 equivalent dwelling units (EDUs) in the CSD service area; each EDU was assumed to generate 250 gallons of wastewater per day, for a total ADWF of 0.27 mgd.

The proposed Master Plan projects an overall population growth rate of 0.9% per year, which would result in the addition of 930 residents during the Master Plan's 30-year planning period, for a projected total population of 3,946 residents. Future development is expected to result from 1) infill development of vacant and underdeveloped land within the existing CSD service area; and 2) with new development projects within the District limits and SOI. About 60% of development expected to occur would be new residential units, with the remainder being industrial. Residential development is expected to occur on the Lockeford Vista, Lockeford Oaks, and Kautz properties.

Projected future wastewater flow resulting from anticipated future development would increase to 0.50 mgd, as opposed to the current ADWF of 0.19 mgd. Meeting anticipated needs for wastewater, collection, and disposal from this new development is the primary purpose of the proposed Master Plan.

Lockeford is underlain by the Eastern San Joaquin Groundwater Subbasin. The CSD obtains its water from four groundwater wells, from which the CSD currently withdraws approximately 400 acre-feet of water per year (Lockeford CSD 2021). As documented in the proposed Wastewater Facilities Master Plan, portions of the subbasin southeast of the CSD are critically over drafted, meaning significantly more groundwater is being withdrawn than is being replenished (Master Plan Figure 3-2, see also IS/MND Section 3.10, Hydrology and Water Quality). As a part of a Groundwater Sustainability Agency formed pursuant to the Sustainable Groundwater Management Act, the CSD seeks to offset a portion of its potable water withdrawals by using treated wastewater to recharge and replenish the local groundwater system.

1.5 Environmental Evaluation Checklist Terminology

The project's potential environmental effects are evaluated in the Environmental Evaluation Checklist presented in Chapter 3.0 of this IS/MND. The checklist includes a list of environmental considerations against which the project is evaluated. For each question, the Initial Study determines whether the project would involve 1) a Potentially Significant Impact, 2) a Less Than Significant Impact with Mitigation Incorporated, 3) a Less Than Significant Impact, or 4) No Impact.

> A Potentially Significant Impact occurs when there is substantial evidence that the project may involve a substantial adverse change to the physical environment, i.e., the environmental effect may be significant, and mitigation measures have not been defined that would reduce the impact to a level that would be less than significant. If there is a Potentially Significant Impact entry in the Initial Study, then an EIR is required.
>
> An environmental effect that is Less Than Significant with Mitigation Incorporated is a Potentially Significant Impact that can be avoided or reduced to a level that is less than significant with the application of mitigation measures described in the Initial Study.

A Less Than Significant Impact occurs when the project would involve an environmental impact, but the impact would not cause a substantial adverse change to the physical environment that would require mitigation.

A determination of No Impact is self-explanatory.

This IS/MND identifies potentially significant environmental impacts related to the project, that is, to the construction of planned improvements to the wastewater collection system. Some of these impacts can be mitigated by implementation of existing provisions of law and standards of practice related to environmental protection. Such provisions are considered in the environmental impact analysis, and the degree to which they would reduce potential environmental effects is discussed. Additional mitigation measures are identified when existing provisions of law and standards of proactive do not avoid potential environmental effects or to reduce them to a level that is less than significant.

1.6 Summary of Environmental Effects and Mitigation Measures

Table 1-1, which follows Figures 1-1 through 1-4, summarizes the results of the Environmental Evaluation Checklist and associated narrative discussion in Chapter 3.0 of this IS/MND. The potential environmental impacts of the proposed project are listed in the left-most column of this table. The level of significance of each impact is indicated in the second column. Mitigation measures proposed to avoid or minimize the impacts are shown in the third column, and the significance of the impact after mitigation measures are applied is shown in the fourth column.

As previously noted, all potentially significant environmental effects identified in the IS/MND would be avoided or reduced to a level that would be less than significant with recommended mitigation measures. For all other issues, the project would have no impact or would have impacts that are less than significant.

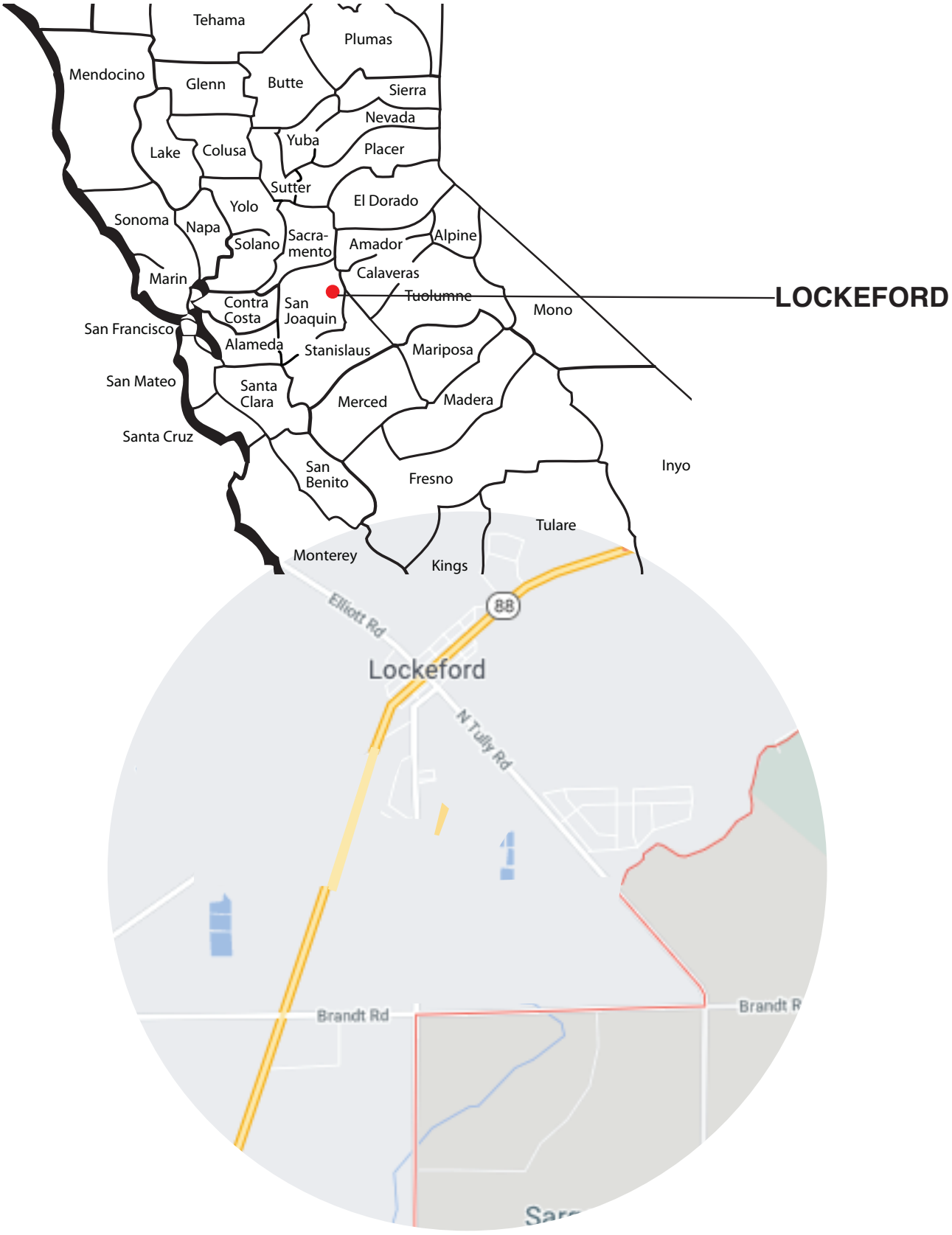
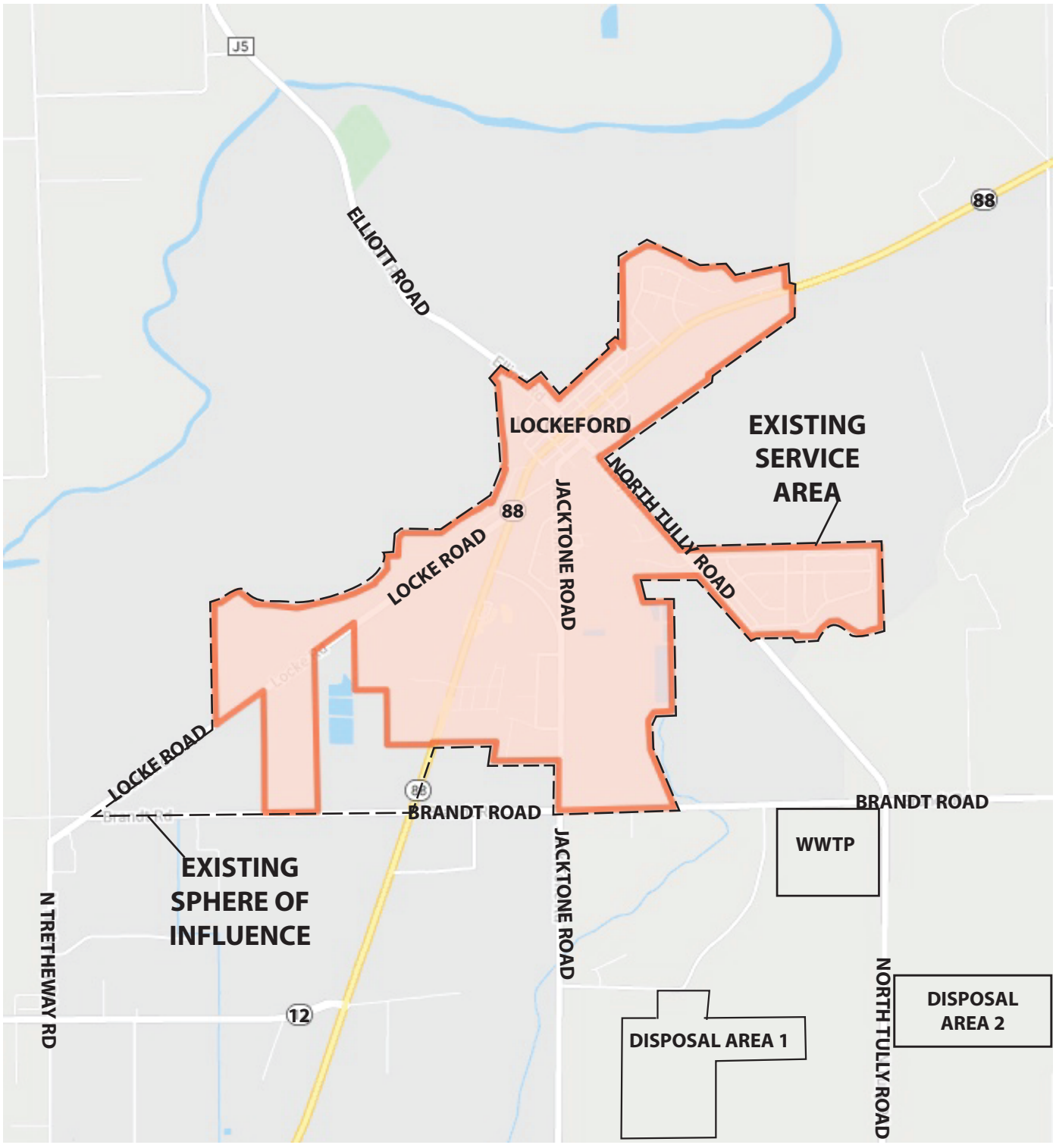
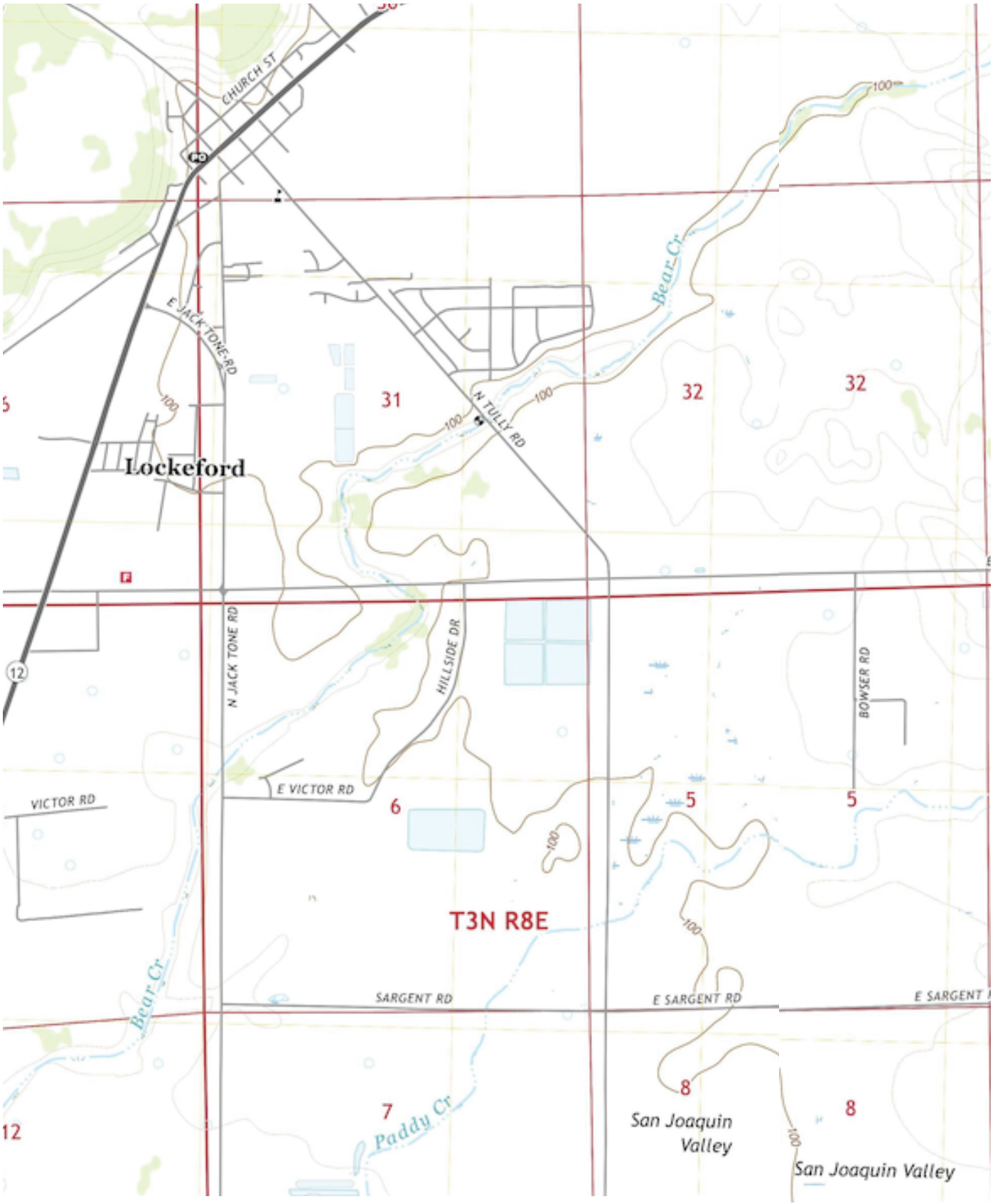


Figure 1-1
REGIONAL LOCATION MAP

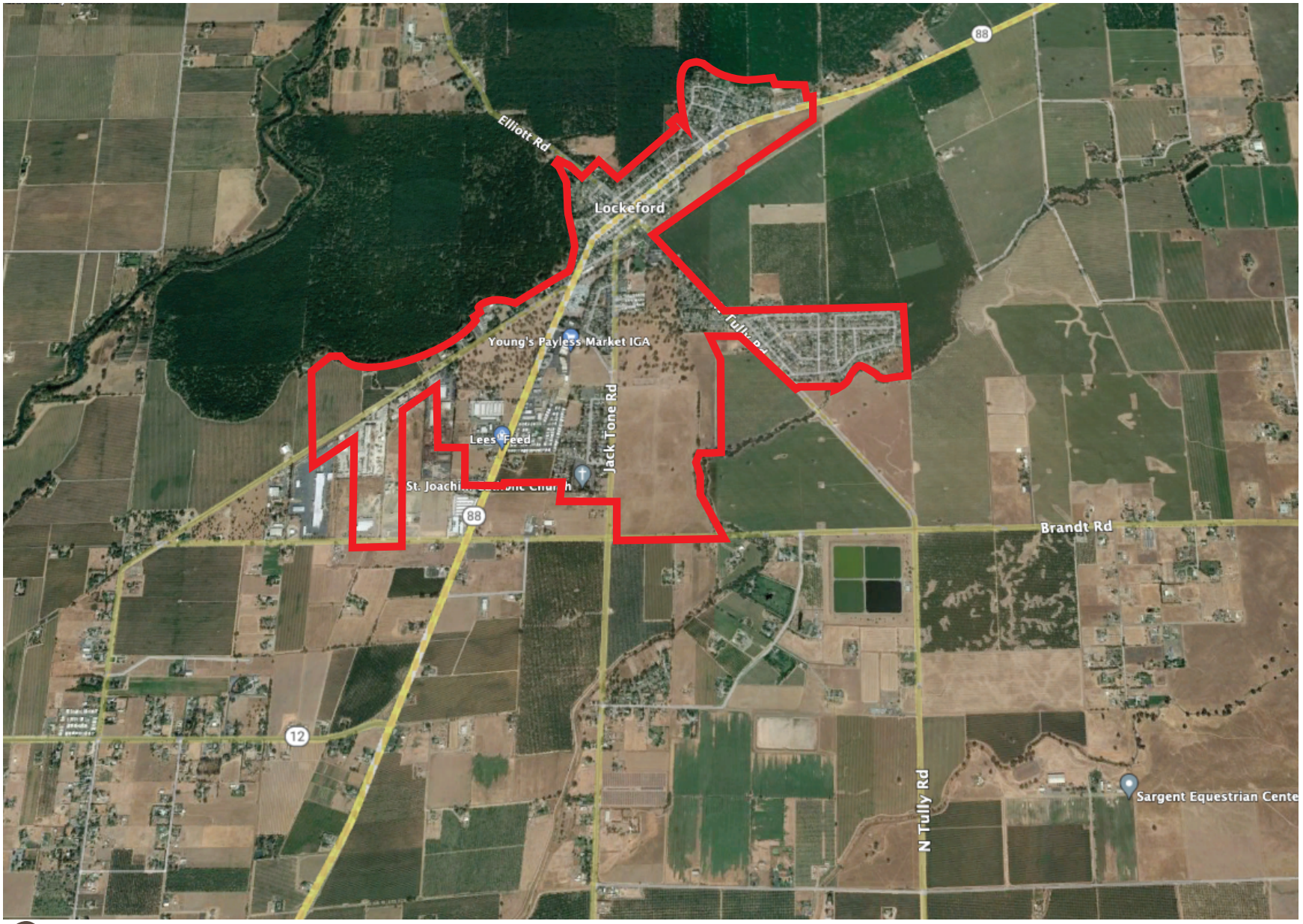


SOURCE: Google Maps

Figure 1-2
EXISTING CSD SPHERE OF
INFLUENCE AND SERVICE AREA



SOURCE: USGS Quadrangle Map, Lockeford, CA 2021 and Clements CA, 2018.



BaseCamp Environmental

SOURCE: Google Earth

Figure 1-4
AERIAL PHOTO

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.1 AESTHETICS			

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
a) Scenic Vistas	NI	None required.	-
b) Scenic Routes and Resources	LS	None required.	-
c) Visual Character and Quality	LS	None required.	-
d) Light and Glare	NI	None required.	-
3.2 AGRICULTURE AND FORESTRY RESOURCES			
a) Agricultural Land Conversion	LS	None required.	-
b) Agricultural Zoning and Williamson Act	LS	None required.	-
c) Forest Land Zoning	NI	None required.	-
d) Forest Land Conversion	NI	None required.	-
e) Indirect Conversion of Farmland and Forest Land	LS	None required.	-
3.3 AIR QUALITY			
a) Air Quality Plan Consistency	PS	AQ-1: The contractor for an improvement identified in the Master Plan shall reduce emissions from construction equipment and vehicles by implementing the following: ● Tune and maintain all construction equipment to manufacturer's specifications. ● Use low-sulfur fuels or alternative fuels for construction equipment or use electrical equipment, whenever feasible. ● Limit idling of construction equipment and trucks to no longer than five minutes, in accordance with State regulations.	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		• Locate construction parking areas to minimize traffic interference. • Provide adequate ingress and egress at work sites and staging areas to minimize vehicle idling.	
b) Cumulative Emissions	LS	None required.	-
c) Exposure of Sensitive Receptors	PS	Mitigation Measure AQ-1.	LS
d) Odors and Other Emissions	LS	None required.	-
3.4 BIOLOGICAL RESOURCES			
a) Special-Status Species	PS	BIO-1: The LCSD shall retain a qualified biologist to perform a focused biological assessment prior to implementation of each of the infrastructure improvements covered by the Master Plan. BIO-2: The LCSD should consider and if feasible participate in and obtain coverage for the project under the San Joaquin County Multi-Species Habitat Conservation and Open Space (SJMSCP) prior to ground disturbance. The project applicant shall mitigate for the proportionate loss of potential wildlife habitat from the project site by paying required SJMSCP fees and implementing any Incidental Take Minimization Measures prescribed by the San Joaquin Council of Governments (SJCOG). A biologist representing SJCOG will visit the project site prior to the issuance of Incidental Take Minimization Measures. BIO-3: In the event that the LCSD does not participate in and obtain coverage under the SJMSCP for a project, it shall consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife and perform	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		pre-construction surveys or take other required action in accordance with recommendations from the agencies. BIO-4: No work shall occur on the proposed Reclamation Area 2 site until further biological resource analysis of the site is conducted. This analysis shall include a comprehensive wetland delineation to current U.S. Army Corps of Engineers standards and conducting a protocol-level survey for vernal pool fairy shrimp. Upon completion of the analysis, the Lockeford CSD shall consider the feasibility of participating in the SJMSCP for any project work in the Reclamation Area 2 site. If participation in the SJMSCP is not considered feasible, then the Lockeford CSD shall find an alternative location for the activities proposed in Reclamation Area 2.	
b) Riparian and Other Sensitive Habitats	LS	None required.	-
c) Wetlands and Waters of the U.S.	PS	Mitigation Measure BIO-2.	LS
d) Fish and Wildlife Movement	LS	None required	-
e) Local Biological Requirements	LS	None required	-
f) Conflict with Habitat Conservation Plans	LS	None required	-
3.5 CULTURAL RESOURCES			
a) Historical Resources	LS	None required.	-
b) Archaeological Resources	PS	CULT-1: If any subsurface cultural resources are encountered during construction of improvements, all construction activities within 100 feet of the encounter shall be halted until a qualified archaeologist can examine these materials, determine their significance and, if significant, recommend mitigation measures that would reduce potential effects to a level that is less than	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		significant. LCSD shall notify potentially affected Native American tribes if recommended by the archaeologist. Recommended measures could include, but are not limited to, 1) preservation in place, or 2) excavation, recovery, and curation by qualified professionals, 3) processing materials for reburial, 4) minimizing handling of cultural objects, or 5) returning objects to a location within the project vicinity where they would not be subject to future impacts. The Lockeford Community Services District shall be notified of all discoveries and shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written monitoring report, consistent with the requirements of the CEQA Guidelines.	
c) Human Burials	PS	CULT-2: In accordance with CEQA Guidelines Section 15064.5(e) and with California Health and Safety Code Section 7050.5, if human remains are uncovered during project construction, then all work within 100 feet of the find shall be halted, and the County Coroner shall be notified to determine if an investigation of the death is required. If it is determined that the remains are Native American in origin, then the County Coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the Most Likely Descendants of the deceased Native American, and the Most Likely Descendants may make recommendations on the disposition of the remains and any associated grave goods with appropriate dignity. If a Most Likely Descendant cannot be identified or fails to make a recommendation, or the CSD rejects the recommendations of the Most Likely Descendant, then the CSD shall rebury the remains and associated grave goods	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		with appropriate dignity in a location not subject to further disturbance.	
3.6 ENERGY			
a) Project Energy Consumption	LS	None required.	-
b) Consistency with Energy Plans	NI	None required.	-
3.7 GEOLOGY AND SOILS			
a-i) Fault Rupture Hazards	NI	None required.	-
a-ii) Seismic Ground Shaking	LS	None required.	-
a-iii) Other Seismic Hazards	LS	None required.	-
a-iv) Landslides	NI	None required.	-
b) Soil Erosion	LS	None required.	-
c) Unstable Soils	LS	None required.	-
d) Expansive Soils	PS	GEO-1: For improvement projects in areas having soils with a Moderate to High expansive soil potential, as identified in the *Soil Survey of San Joaquin County* by the U.S. Department of Agriculture, Natural Resources Conservation Service, a soils engineering report shall be prepared by a qualified engineer prior to final design approval of the improvement. The report shall consider the expansive soil potential of the proposed improvement site and the potential for expansive soil damage to the improvement. The report, if necessary, shall include recommendations to avoid or minimize effects of expansive soils on the improvement. The recommendations shall be incorporated within the final design of the improvement.	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
e) Adequacy of Soils for Wastewater Disposal	NI	None required.	-
f) Paleontological Resources and Unique Geologic Features	PS	GEO-2: If potential paleontological resources are encountered during project construction, all activities shall be halted within 100 feet of the discovery until a qualified paleontologist can examine materials, determine their significance and, if significant, identify mitigation measures that would reduce potential effects to a level that is less than significant. Such measures could include 1) preservation in place or 2) excavation, recovery, and curation by qualified professionals. The Lockeford Community Services District shall be notified of all discoveries and shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written monitoring report, consistent with the requirements of the CEQA Guidelines.	LS
3.8 GREENHOUSE GAS EMISSIONS			
a) Project GHG Emissions and Consistency with GHG Reduction Plans	LS	None required.	-
b) Conflict with an applicable plan for reducing emissions of greenhouse gases	LS	None required.	-
3.9 HAZARDS AND HAZARDOUS MATERIALS			
a) Hazardous Material Transport, Use and Storage	LS	None required.	-
b) Release of Hazardous Materials by Upset or Accident	LS	None required.	-
c) Hazardous Materials Releases near Schools	NI	None required.	-

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
d) Hazardous Materials Sites	PS	HAZ-1: Prior to the start of construction activities for Improvement Nos. 12 and 14, as identified in Table 3-4 of the Wastewater Master Plan, a Phase I Environmental Site Assessment shall be conducted by a registered Environmental Professional to determine the potential presence of any soil contamination within the proposed construction area of these improvements. If such a presence is determined, then a Phase II Environmental Site Assessment shall be conducted by a registered Environmental Professional to determine the extent of the soil contamination and to recommend remediation actions if necessary. Any recommended remediation shall be put in place prior to the start of construction activities for Improvement Nos. 12 and 14. HAZ-2: In the event that evidence of unusual odors or soil discoloration is noted during construction, constructed shall be halted and the LCSD Project Engineer notified. The Engineer shall evaluate the situation, retain a qualified environmental professional if required, and take action as required by applicable regulations.	LS
e) Airport Operations	NI	None required.	-
f) Emergency Response and Evacuation	PS	HAZ-3: Prior to the start of improvement construction that occurs on or along a roadway, a Traffic Control Plan shall be prepared and implemented, The Traffic Control Plan shall address traffic control needs, if any, safety provisions, notification of access closure, and daily access restoration. The plan shall specify dates and times of road closures or restrictions, if any, and shall ensure that adequate access will be provided for emergency vehicles. The Traffic Control Plan shall be coordinated with the San Joaquin County Sheriff's Department, the Mokelumne Rural Fire	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		District and the California Department of Transportation as determined by the Project Engineer.	
g) Wildland Fire Hazards	NI	None required.	-
3.10 HYDROLOGY AND WATER QUALITY			
a) Violation of Water Quality Standards	LS	None required.	-
b) Groundwater Supplies and Recharge	LS	None required.	-
c-i, ii) Drainage Patterns	LS	None required.	-
c-iii) Runoff	NI	None required.	-
c-iv) Flood Flows	PS	Mitigation Measure BIO-3.	LS
d) Release of Pollutants in Flood Zone	LS	None required.	-
e) Conflict with Water Quality or Sustainable Groundwater Plans	NI	None required.	-
3.11 LAND USE AND PLANNING			
a) Division of Established Communities	NI	None required.	-
b) Conflict with Applicable Plans, Policies and Regulations Avoiding or Mitigating Environmental Effects	LS	None required.	-
3.12 MINERAL RESOURCES			
a, b) Loss of Mineral Resource Availability	NI	None required.	-

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.13 NOISE			
a) Increase in Ambient Noise Levels	PS	The following measures shall be implemented during construction of any improvements near a noise-sensitive land use, as listed in Table 9-1025.9, Part I of the San Joaquin County Code: ● Construction work shall be restricted to the hours of 6:00 a.m. to 7:00 p.m. Monday through Friday and to 7:00 a.m. to 6:00 p.m. on Saturday. No construction work shall occur during a Sunday or a federally recognized holiday. ● The contractor shall ensure that all construction equipment used on the construction site is properly muffled at all times, with mufflers installed in accordance with manufacturers' specifications. ● Idling of construction equipment and trucks shall be limited to no longer than five minutes, in accordance with State regulations (see also Mitigation Measure AQ-1 in Section, 3.3, Air Quality).	LS
b) Groundborne Vibrations	LS	None required.	-
c) Exposure to Airport/Airstrip Noise	NI	None required.	-
3.14 POPULATION AND HOUSING			
a) Population Growth Inducement	LS	None required.	-
b, c) Displacement of Housing and People	NI	None required.	-

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.15 PUBLIC SERVICES			
a-i) Fire Protection	NI	None required.	-
a-ii) Police Protection	NI	None required.	-
a-iii) Schools	NI	None required.	-
a-iv) Parks	NI	None required.	-
a-v) Other Public Facilities	NI	None required.	-
3.16 RECREATION			
a, b) Recreational Facilities	NI	None required.	-
3.17 TRANSPORTATION/TRAFFIC			
a) Conflict with Transportation Plans, Ordinances and Policies	LS	None required.	-
b) Conflict with CEQA Guidelines Section 15064.3(b)	NI	None required.	-
c) Traffic Hazards	PS	Mitigation Measure HAZ-3.	LS
d) Emergency Access	NI	None required.	-
3.18 TRIBAL CULTURAL RESOURCES			
a-i, ii) Tribal Cultural Resources	PS	Implement Mitigation Measures CULT-1 and CULT-2	LS
3.19 UTILITIES AND SERVICE SYSTEMS			
a) Construction or Relocation of Infrastructure	PS	UTIL-1: Construction plans for each improvement implemented under the Master Plan shall identify existing infrastructure within the proposed construction area, and	LS

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		if relocation is required, specify relocation activity. The LCSD shall consider whether relocation or new construction apart from proposed improvements would require additional environmental review in accordance with the California Environmental Quality Act (CEQA) and the adopted CEQA Guidelines. The review shall be completed prior to approval of the final improvement plans.	
b) Water Supply	NI	None required.	-
c) Wastewater Systems	LS	None required.	-
d, e) Solid Waste Services	LS	None required.	-
3.20 WILDFIRE			
a) Emergency Response and Emergency Evacuation Plans	PS	Mitigation Measure HAZ-3.	LS
b) Exposure of Project Occupants to Pollutants	NI	None required.	-
c) Installation and Maintenance of Infrastructure	NI	None required.	-
d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes	NI	None required.	-
3.21 MANDATORY FINDINGS OF SIGNIFICANCE			
a) Findings on Biological and Cultural Resources	PS	Mitigation measures in Section 3.4, 3.5, and 3.18.	LS
b) Findings on Individually Limited but Cumulatively Considerable Impacts	LS	None required.	-
c) Findings on Adverse Effects on Human Beings	LS	None required.	-

LEGEND: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

2.0 PROJECT DESCRIPTION

The proposed project is the adoption and implementation of the Lockeford Community Services District (CSD) Wastewater Facilities Master Plan, would covers the unincorporated community of Lockeford and adjacent areas. The multi-element project consists of planned improvements to CSD wastewater collection, treatment, and disposal facilities needed to meet projected demands over a 30-year planning period. The Master Plan objectives and associated wastewater system improvements that together make up the Master Plan are described below.

2.1 Project Location

The project is located in the unincorporated community of Lockeford and nearby lands in northeastern San Joaquin County – an area totaling approximately 1,034 acres (see Figures 1-1 through 1-4). The Lockeford community straddles SR 12/SR 88 approximately seven miles east of the City of Lodi. The project area is shown on the U.S. Geological Survey Lockeford, California, 7.5-minute quadrangle map. The proposed elements of the project are within Sections 25 and 36, Township 4 North, Range 7 East and within Sections 30 and 36, Township 4 North, Range 8 East, Mt. Diablo Base and Meridian. The latitude of Lockeford is approximately 38° 09′ 47″ North, and the longitude is approximately 121° 09′ 01″ West.

2.2 Project Objectives

The community of Lockeford, the CSD, and existing and projected future development are described in the Master Plan and in Chapter 1.0 of this document. The proposed Master Plan describes a range of improvements to the CSD's existing wastewater collection, treatment, and disposal facilities that may be required to serve anticipated new community development within the CSD's Sphere of Influence. Planned wastewater treatment and disposal improvements are expected to offset existing potable water withdrawals, contribute to recharge of the Eastern San Joaquin Groundwater Subbasin and address nitrate and salt control in sewage effluent as required by recent revisions to the Regional Water Quality Control Board (RWQCB) Basin Plan. The specific objectives of the Master Plan are:

- To provide an updated and expanded master plan of wastewater facilities needed to serve current and future wastewater treatment and disposal needs of the CSD, while also providing a reliable system for long-term operation, maintenance, and asset lifecycle replacement,

- To provide for beneficial reuse of treated effluent to contribute to groundwater recharge and balancing of the groundwater basin water budget,

- To define a logical path for facilities development and construction consistent with current Basin Plan and statewide requirements and criteria related to recycled water and nitrate control and to a lesser extent salt control, and

- To establish a basis and nexus for capacity fees for new development to contribute to the funding of new wastewater facilities needed to serve that new development.

The Master Plan includes a financial plan for its implementation. The financial plan, while enabling planned improvements, would not by itself involve potential for significant environmental effects over and above those resulting from planned physical improvements. Proposed physical improvements considered in this IS/MND are discussed below.

2.3 Proposed Collection System Improvements

The Master Plan describes a range of planned wastewater collection system improvements that would be needed to accommodate an average dry weather wastewater flow (ADWF) of 0.50 million gallons per day (mgd). Planned improvements include new gravity sewers, expansion of the existing Locke Road pump station, construction of three new pump stations, installation of approximately 14,000 linear feet of new gravity sewer lines, and installation of approximately 28,400 linear feet of new force mains. These improvements would transport wastewater generated by new development in various portions of the Master Plan area to the CSD treatment and disposal facilities. Planned collection system improvements would be located primarily along existing County roads. Planned treatment and disposal improvements are described in Section 2.4.

The Master Plan proposes 14 discrete collection system improvements, which are located geographically on Figure 2-1. Table 2-1 lists the proposed new gravity mains, force mains and pump stations in an approximate time sequence. Gravity and force mains would be installed primarily within existing County road rights-of-way and/or utility easements. Pump stations would be installed within existing road rights-of-way or easements, or, where necessary, acquired easements over adjacent lands.

The actual sequence of improvements will be determined by the timing of applications for and approval of new development projects by San Joaquin County. The list of planned wastewater collection system improvements in Table 2-1 can be seen as a "menu" of possible improvement needs based on the CSD's current understanding of the probable sequencing and wastewater demands of new development projects that would need to be served by the District. The actual sequencing of these projects cannot be determined at this time. The timing, sizing, precise location, design, and construction of collection system improvements will be determined in conjunction with County review and approval of individual development projects.

TABLE 2-1
MASTER PLAN PROPOSED GRAVITY
AND FORCE MAIN IMPROVEMENTS

No. [1]	Reason	Improvement	Length (feet)	Alignment	Environmental Condition
1	Local service	8-inch gravity	3,200	Locke Rd r/w SW of PS	Road r/w
3	With Locke PS flow improvement	8-inch parallel force main	3,200	Locke Rd PS to Jack Tone Rd overland, crosses 88	Mostly oak woodland
4	Accommodate Kautz project	6-inch force main	6,200	Tully Rd or ex adjacent FM r/w to WWTP	Roadside or cleared FM r/w
5	Accommodate new development	New 8-inch FM along Jack Tone and Brandt Rds. to future E Brandt PS	4,800	Road r/w	Road r/w
5	Accommodate new development	New 10-inch FM from E Brandt PS to WWTP	4,300	Brandt r/w and WWTP site margins	Road r/w and grasses/weeds
6	Redirect flow to new N Tully PS	New 8-inch gravity from Bear Creek PS to N Tully PS	1,100	Tully Rd r/w	Road r/w
8	Local development along Locke Rd	New 8-inch gravity paralleling existing from Locke PS NE along Locke Rd to SR 12/88	2,300	Locke Rd r/w	Road r/w
9	Local development along SR 12/88	New 6-inch gravity south along SR 12/88 from ex 6-inch gravity line	1,000	SR 12/88 r/w	Hwy r/w or adjacent
10	New development (same as 5?)	New 10-inch FM to WWTP	4,700	Brandt Rd r/w, WWTP site	Road r/w and grasses/weeds
11	System integration	New 10-inch gravity for diversion of #5	1,700	Brandt Rd r/w	Road r/w and grasses/weeds

No. [1]	Reason	Improvement	Length (feet)	Alignment	Environmental Condition
		and #13 FM flows to E Brandt PS			
12	Local industrial growth along Brandt Rd	New 6-inch and 8-inch gravity sewers between SR 12/88 and Locke Rd	4,700	Brandt Rd r/w	Adjacent vacant private lands
14	Local industrial growth along Brandt Rd	New 4-inch FM from W Brandt PS to Jack Tone, intertie with existing gravity (11) or FM (5)	5,200	Brandt Rd r/w	Adjacent vacant private lands
		TOTAL	**42,400**		

[1] Refer to Figure 2-1.
Note: FM – force main; PS – Pump Station; WWTP – Wastewater Treatment Plant; r/w - right-of-way

Table 2-2 shows the planned pump station improvements associated with the updated Master Plan. The CSD's existing wastewater collection system also includes the Lockhaven and Bluff Drive pump stations north of SR 12/88; however, the Master Plan projects no increase in wastewater flows to these pump stations and therefore does not identify the need for improvement. Pump station improvements at the existing Locke Road Pump Station would occur on approximately one-quarter acre of adjacent land. New pump stations would be located on approximately one-half acre sites to be acquired from willing sellers at locations to be determined adjacent to the existing Tully Road and Brandt Road rights-of-way.

Wastewater system improvements would be installed as required, typically using conventional construction equipment such as graders, excavators and backhoes, concrete trucks, and rear- and side-dump trucks for removal of waste soils and delivery of bedding and backfill material. New gravity and force mains would be trenched within and parallel to existing County road rights-of-way and/or utility easements. New pump station or expansion projects would require deeper excavation and concrete work for wet wells, power supply, and equipment installation.

TABLE 2-2
MASTER PLAN PROPOSED PUMP STATION IMPROVEMENTS

No.[1]	Reason	Improvement	Added Site Size (sq. ft.)	Environmental Conditions
2	Accommodate growth	Add new impellers and 2nd wet well, 336 gpm	5,000	Existing developed site
4	Accommodate Kautz	New N Tully PS 180 gpm	20,000	Portion of Kautz vineyard or farm road
5	Replaced by N Tully PS	Bear Creek PS ceases ops, maintain intertie	NA	No physical effect
6	Replaced by N Tully PS	Eliminate Bear Creek PS	NA	Disturbed site
6	Accept Bear Creek PS flows	Upgrade Tully Rd PS	None	Ex PS site, no new disturbance
7	Accommodate growth	New Locke Rd PS, 750 gpm	20,000	Adjacent existing site, disturbed area
10	Accommodate CSD growth	New E Brandt PS in 780, 810, and 950 gpm steps	20,000	New undisturbed site adjacent to Brandt Rd
13	Accommodate local growth	New W Brandt PS, 140 gpm	20,000	New undisturbed site adjacent to Brandt Rd
		TOTAL	100,000 2.0 acres	

[1] Refer to Figure 2-2.
Note: PS – Pump Station, gpm - gallons per minute

The estimated disturbance corridor for construction of planned gravity and force mains would be 15 to 20 feet in width. Pipeline construction areas would typically be located within existing County road rights-of-way, adjacent to or within the existing paved section. However, one planned force main would extend east from the existing Locke Road pump station to Jack Tone Road through an undeveloped oak woodland area. Pipeline installation would require excavation of a trenches typically ranging from 4 to 10 feet in depth and 3 to 8 feet in width. Proposed pipeline sections would be installed on gravel bedding material and backfilled with a gravel layer and native material removed from the trench. Excess material would be typically spread within the adjacent right-of-way.

Pump stations would have concrete wet wells that extend 20-25 feet deep below the ground surface. Each wet well would have two or more submersible pumps that direct the collected wastewater to the treatment plant. Aboveground facilities associated with pump stations are limited typically to electrical panels or all-weather cabinets. The Locke Road pump

station expansion would occur on approximately 5,000 square feet of land adjacent to the existing pump station. The planned three new pump stations would be constructed on previously undeveloped sites adjacent to Tully and Brandt Roads. The estimated overall pump station site size is approximately 20,000 square feet. Pump station construction would involve deep excavation of up to 35 feet for construction of wet wells and pumping facilities.

Excess soil, estimated at approximately 1,555 cubic yards at all four pump station sites, would be stored at the WWTP site or at the remote storage pond site, with erosion controls such as hydroseeding or fiber rolls put in place at the close of construction. Total disturbance area for the planned Master Plan collection system improvements is estimated at approximately 17.33 acres, as shown in Table 2-3.

This IS/MND considers the potential environmental effects and mitigation needs associated with all collection system improvements described in Tables 2-1, 2-2 and 2-3. The analysis considers the effects of the overall project both cumulatively and on a project-by-project basis.

TABLE 2-3
DISTURBANCE AREA OF PLANNED COLLECTION SYSTEM IMPROVEMENTS

Improvements	Length (feet)	Corridor Width (feet)	Disturbance Area (acres)
4-8-inch mains	33,400	15	11.71
10-inch mains	9,000	20	4.13
New and expanded pump stations	--	--	1.95
		TOTAL	17.79

2.4 Proposed Wastewater Treatment and Disposal Improvements

Development in Lockeford over the 30-year planning period is expected to increase the volume of wastewater, which would require treatment and disposal. Existing wastewater treatment and disposal facilities consist of one 6.5-acre treatment pond, three on-site storage ponds approximately 5.5, 5.5, and 6.5 acres in size, a 12-acre off-site pond for storage of treated effluent, and an approximately 95-acre surface disposal field named Reclamation Area #1 located north of Sargent Road (Figure 2-2). The Master Plan analyzed and compared the benefits and costs of four alternatives for long-term effluent disposal consistent with overall project objectives. In brief, the alternatives considered were:

Alternative 1 – Continued land disposal, expanded off-site storage. Convert existing on-site storage pond to treatment use, increase off-site storage capacity, increase disposal area at Reclamation Area 2.

Alternative 2 – Continued land disposal, maximize WWTP storage. Partition existing treatment pond, adding aeration capacity, deepen existing off-site storage pond, increase disposal area at Reclamation Area 2

Alternative 3 – Groundwater recharge of treated effluent. Add tertiary treatment facilities, augment circulation of off-site storage, add new recharge ponds at Reclamation Area 2 and/or Historic WWTP site.

Alternative 4 – Recycled water use for in-lieu recharge in irrigated agriculture. Add tertiary treatment facilities, construct new off-site storage pond and circulation facilities, construct new recycled water distribution facilities allowing application of treated wastewater to nearby agricultural lands in lieu of existing groundwater withdrawals.

Additional detail regarding the alternatives is provided in the proposed Master Plan Table 3-25. All the alternatives would involve the construction of a headworks microscreen and washing compactor, additional aeration equipment, and modifications of internal WWTP piping.

Master Plan studies found that Alternatives 1 and 2 were the least expensive, but they would not contribute to the Plan's groundwater recharge objectives. Therefore, these alternatives were rejected. Alternative 4 was rejected as it was the costliest alternative and was dependent on third-party agreements and grower interest, neither of which could be adequately secured. The Master Plan conclusively identified Alternative 3 as the preferred alternative for implementation. For the purposes of environmental impact analysis in this document, construction and operation of Alternative 3 is assumed to be the wastewater treatment and disposal method selected.

Figure 2-2 shows the proposed disposal facilities under Alternative 3. Construction of these facilities would occur in three phases, each based on a specified ADWF generated as development in the Lockeford area occurs, as shown in Table 2-4. The initial phase of Alternative 3 would involve installation of headworks and aeration improvements at the existing treatment facility. Phase 2 would involve the construction and operation of the first unit of tertiary wastewater treatment facilities, a recharge pond on the Historic WWTP or in Reclamation Area 2, and improvements in existing storage system pumping and piping. Following the efficacy evaluation of the initial Phase 2 facilities, the system would be improved with additional tertiary treatment capacity, and recharge pond capacity would be expanded at the Historic WWTP site or in Reclamation Area 2 (see Figure 2-2). Figure 2-3 shows a cross section of a conceptual recharge pond that would be constructed.

TABLE 2-4
PHASING OF PROPOSED DISPOSAL FACILITY IMPROVEMENTS

Phase	ADWF* Trigger	Facility Component	Improvements
Phase 1 - Existing Treatment Expansion	0.23 mgd	Secondary treatment facilities	Headworks microscreen and washing compactor T-1, 2 new 20 hp aerators S-3 → T-2, 2 new 7.5 hp aerators Plant piping modifications
Phase 2 - Reclamation Area 2 Recharge Ponds	0.39 mgd	Tertiary treatment facilities	Sizing Criteria: ~0.25 mgd Secondary effluent PS (Pump 2 of 3) Tertiary treatment building Rapid mixing & flocculation tanks (1 of 2) DAF unit (1 of 2) Self-cleaning strainers (1 of 2) Membrane filter unit (1 of 2) UV disinfection chamber (2 of 3) Advanced oxidation (1 of 2) Coagulant/chemical pumps (1 of 2) Instrumentation/electrical
		Storage facilities	Remote storage return PS Remote storage return piping, 2,500 feet
		Disposal facilities	Recycled water recharge PS Recycled water recharge pipeline Reclamation Area 2 recharge ponds Instrumentation/electrical
Phase 3a - Construct Historic WWTP Recharge Ponds, if recharge ponds are a success	0.43 mgd	Tertiary treatment facilities	Sizing Criteria: 0.5 mgd Secondary effluent PS (Pump 3 of 3) Rapid mixing & flocculation tanks (2 of 2) DAF unit (2 of 2) Self-cleaning strainers (2 of 2) Membrane filter unit (2 of 2) UV disinfection chamber (3 of 3) Advanced oxidation (2 of 2) Coagulant/chemical pumps (2 of 2) Instrumentation/electrical
		Disposal facilities	Historic WWTP recharge ponds Reclamation Area 2 recharge ponds Monitoring wells Instrumentation/electrical
Phase 3b – Remote Storage Pond Expansion, if	0.43 mgd	Storage facilities	New remote storage pond at Reclamation Area 2; OR deepen existing

Phase	ADWF* Trigger	Facility Component	Improvements
recharge ponds are not a success PROPOSED ALTERNATIVE			remote storage pond by 4.5 ft (add'l 15 million gallons). Continue to utilize Reclamation Area 1 for disposal.

*ADWF = Average Dry Weather Flow

The final Phase 3 would be triggered at an ADWF of 0.43 mgd. At this phase, the CSD would have the opportunity to evaluate the efficacy of the recharge ponds and their benefit for providing groundwater recharge and sustainability. If the recharge ponds are unusually high in maintenance costs, which is atypical, then the CSD may choose to construct additional storage facilities rather than any additional recharge ponds. However, if the initial recharge pond is considered successful, then the CSD may construct a second recharge pond facility at the Historic WWTP site.

The physical environmental effects associated with planned treatment and disposal facilities would vary by element of the project. The estimated footprint and condition of the improvement site are shown in Table 2-5. Phase 1 headworks, aeration and WWTP piping improvements would occur entirely within the existing WWTP facility. Likewise, installation of proposed tertiary treatment facilities, associated equipment and piping changes under Phase 2 would occur adjacent to and east of the existing treatment and storage ponds, within the existing WWTP. Additional piping between the WWTP and the remote storage pond, piping for delivery of treated effluent to the recharge pond and construction of the recharge pond itself would involve primarily undeveloped land.

TABLE 2-5
DISTURBANCE AREA OF DISPOSAL IMPROVEMENTS

Phase	Pipeline Length (feet)	Pond Footprint (acres)	Disturbance Area (acres)[1]	Environmental Condition
1	--	--	--	Existing WWTP property
2	2,650	12.0	13.22	Vacant land formerly used for agriculture
3a	5,350	12.1	14.56	Former WWTP site; vacant land; trees along western boundary
3b	2,500	--	1.55	Existing storage pond and irrigated pasture at Reclamation Area 1; vacant land at Reclamation Area 2 site

[1] Total disturbance by pipeline and pond, with assumed pipeline corridor of 20 feet.

As indicated in Figure 2-3, the proposed recharge ponds at Reclamation Area 2 and the Historic WWTP would involve excavation that would reach depths of 6-8 feet. It also would involve construction of surrounding berms approximately four feet above grade. A road approximately 10 feet in width would be located along the top of the berms. A security fence would surround the pond area.

Other Components of Master Plan

The Master Plan presents a preliminary plan for funding of the recommended improvements. To replace the existing connection fees, new capacity charges are recommended based on anticipated service requirements and proposed improvements. The Master Plan recommends that these fees at minimum be indexed based on an accepted cost indicator, such as the Consumer Price Index or the Construction Cost Index developed by the magazine Engineering News-Record. The funding plan would have no environmental impacts to be evaluated under CEQA, but it is mentioned in this document for informational purposes.

2.5 Permits and Approvals

As a special district, the Lockeford CSD has approval authority over proposed plans and facility development within its service area. The proposed Master Plan would require approval by the CSD Board of Directors at a scheduled Board meeting, subject to public noticing requirements. Individual wastewater system improvements addressed in the Master Plan would be brought to the Board for approval as the Plan is implemented. Individual projects that may have an impact on the physical environment would likely be subject to CEQA review, which would need to be completed prior to Board action on the project.

In order to facilitate planned improvements to the LCSD wastewater system, it is anticipated that, a Report of Waste Discharge would be prepared describing the proposed treatment and disposal or recharge operations for the Regional Water Quality Control Board development of Waste Discharge Requirements. Likewise, a Title 22 Engineering report would be submitted to the Division of Drinking Water of the SWRCB for approval.

This IS/MND is intended to provide programmatic environmental review for the range of subsequent wastewater system improvement projects. To the degree that individual improvement projects are consistent with this project description and the environmental impacts described in this document, and incorporate the applicable mitigation measures described in this document, this document may provide adequate CEQA analysis for the individual projects. In any case, this IS/MND may be used to streamline their CEQA review.

Specific individual improvements identified in the Master Plan may require approvals and permits outside CSD. These would include, but are not limited to, encroachment permits from San Joaquin County and the California Department of Transportation (Caltrans) as well as wetland and stream alteration permits, depending on the nature of the crossing. The need for other permits and approvals will need to be identified during review of the project

and obtained prior to construction. The procedure for use of this document in conjunction with CEQA review of Master Plan projects is described in Section 1.2.

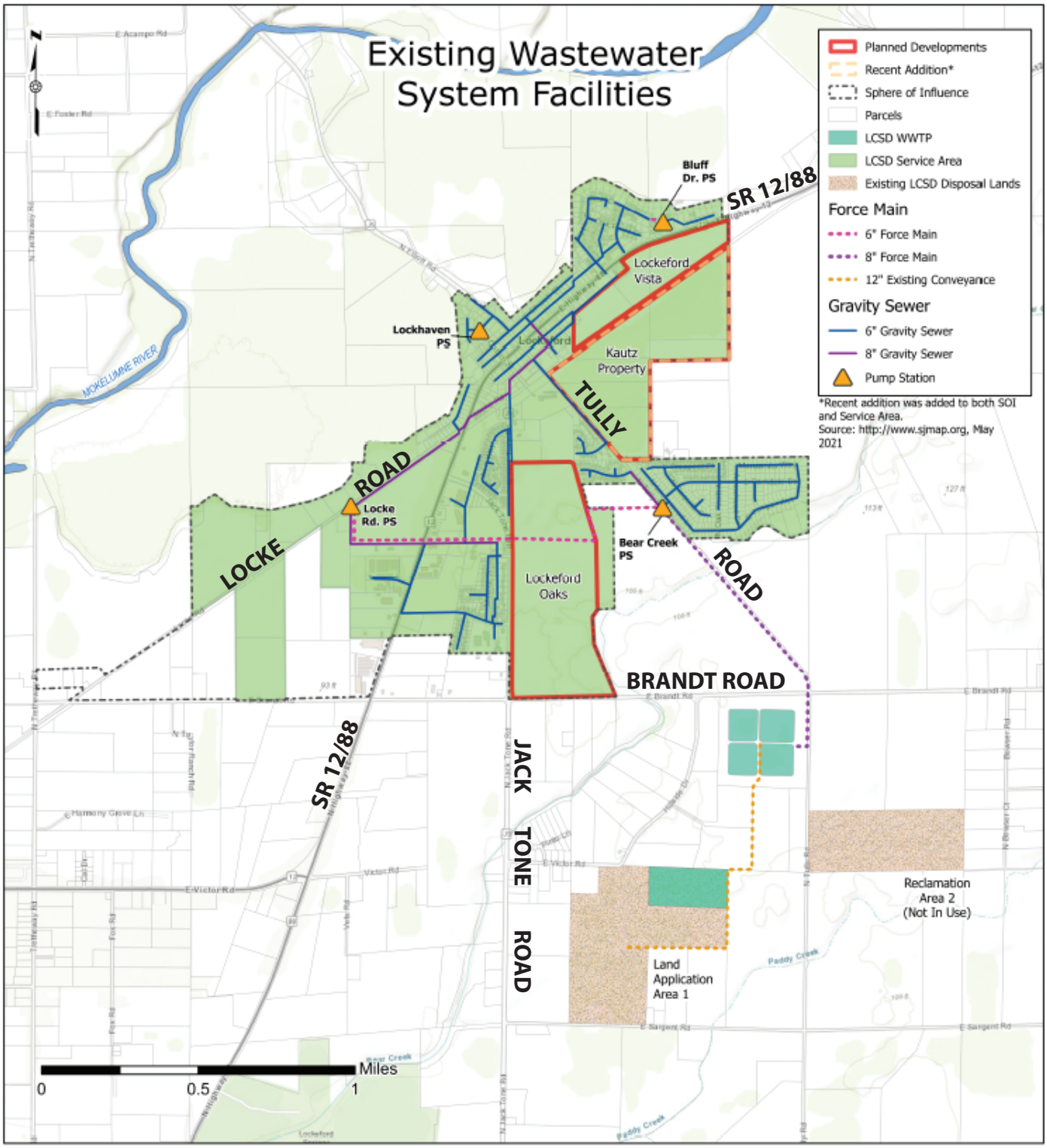


Figure 2-1
LCSD EXISTING WASTEWATER FACILITIES/ NEW DEVELOPMENT

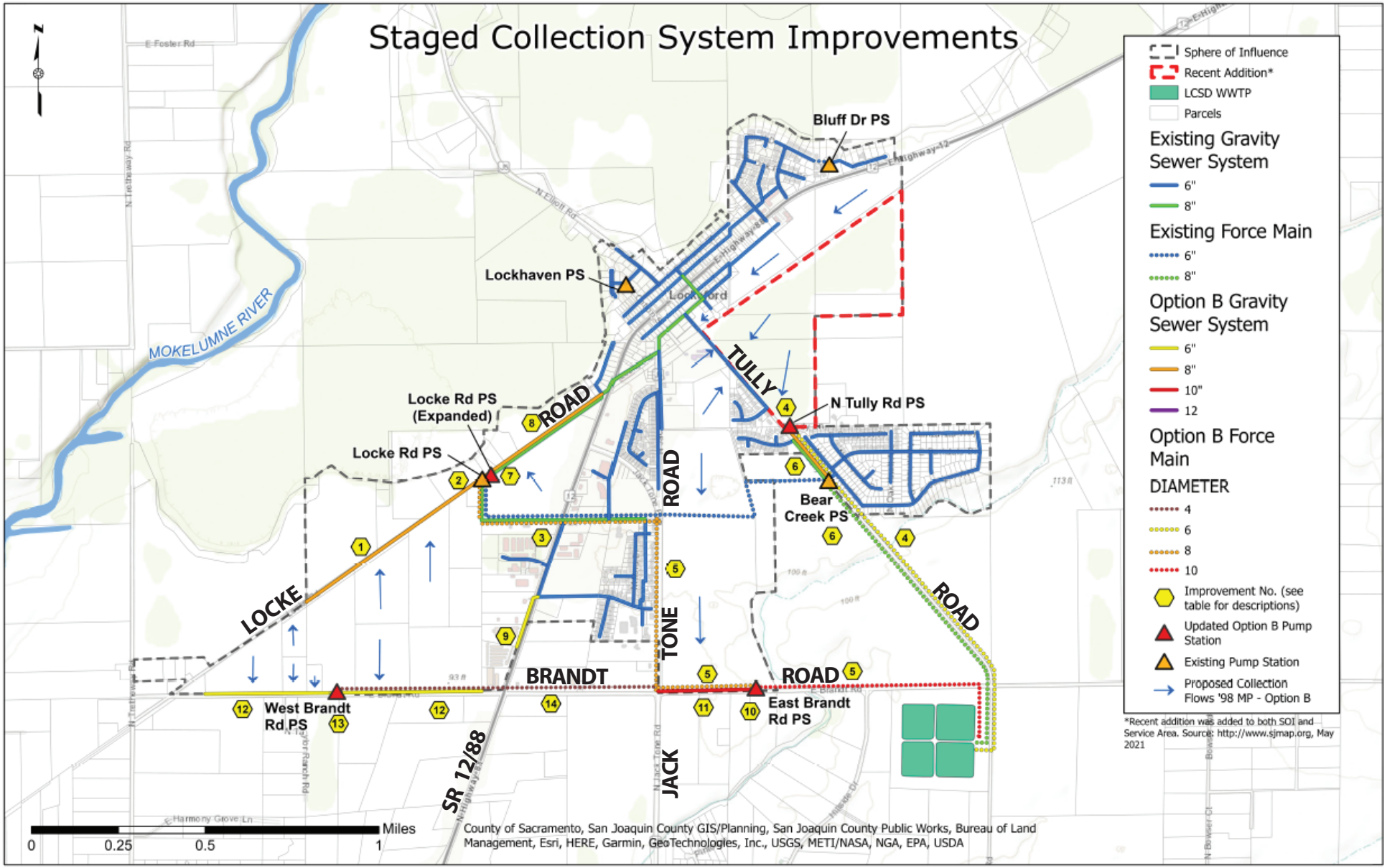


Figure 2-2
EXISTING TREATMENT AND DISPOSAL FACILITIES

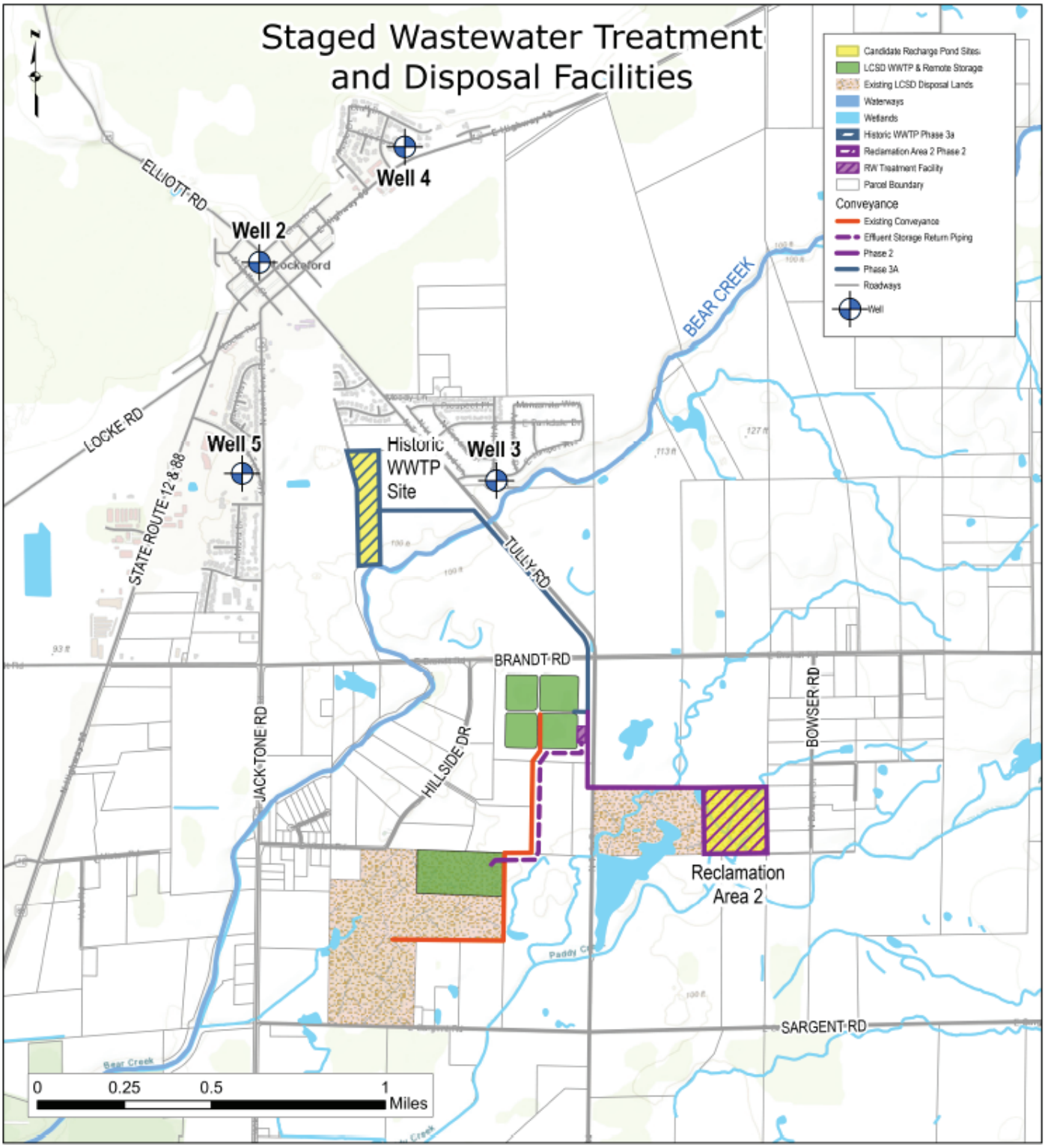


Figure 2-3
PLANNED WASTEWATER TREATMENT AND DISPOSAL FACILITITES

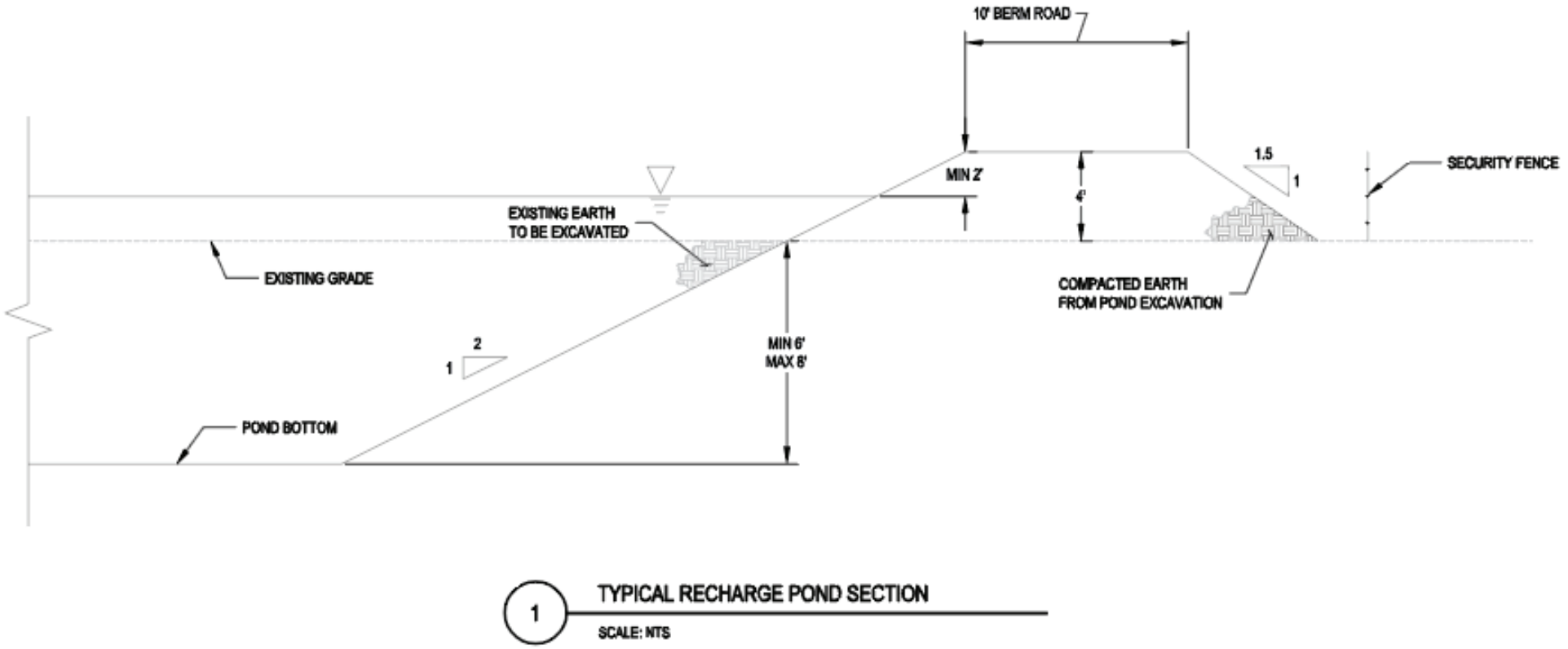


Figure 2-4
RECHARGE POND CROSS-SECTION

3.0 ENVIRONMENTAL EVALUATION CHECKLIST

The following environmental evaluation considers the potential environmental effects of CSD approval of the Wastewater Facilities Master Plan (the proposed project), as described in Chapter 2.0, Project Description. The format of this evaluation is based on the Environmental Checklist presented in CEQA Guidelines Appendix G.

3.1 AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			✓	
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?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

NARRATIVE DISCUSSION

Environmental Setting

The Master Plan area consists of urban development and vacant land, primarily in the Lockeford community and along the State Routes, set amid agricultural fields and other open space areas. The community of Lockeford contains historic buildings, which are discussed in more detail in Section 3.5, Cultural Resources, along with older single-family homes on small lots and many historic commercial and public buildings. The downtown area, with its narrow buildings and pedestrian scale, is considered reminiscent of the gold rush towns of the Sierra foothills (San Joaquin County 2016a).

Beyond the center of Lockeford, there is a mix of more recent urban development, agricultural fields, and natural landscapes. Natural landscapes include riparian vegetation along Bear Creek and oak woodlands. Urban landscapes consist of residential development as well as commercial and industrial development focused primarily along State Route 12/88 and Locke Road. Buildings in these areas are less distinguished in architectural quality than those in the center of Lockeford.

California Public Resources Code Section 21099 states that the aesthetic and parking impacts of residential, mixed-use residential, or employment center projects on an infill site within a transit priority area shall not be considered significant. The Master Plan does not meet the criteria of Section 21099; therefore, aesthetic impacts must be analyzed.

Environmental Impacts and Mitigation Measures

a) Scenic Vistas.

Scenic vistas are defined as expansive views of highly valued landscapes from publicly accessible viewpoints. In the Master Plan area, potential scenic vistas include the Sierra Nevada to the east and nearby agricultural fields. These vistas would not change with the planned wastewater improvements, as they would involve no new construction or additions to existing above-ground structures that would substantially obstruct views. Most individual improvements would be underground, while others would only be slightly elevated above the ground surface and would not intrude on vistas. The project would have no impact on scenic vistas.

b) Scenic Routes and Resources.

Most of the scenic resources in the Master Plan area are in downtown Lockeford, with its layout and historical structures. None of the improvements proposed by the Master Plan would be in downtown Lockeford, so the project would not alter the downtown landscape. Outside the downtown area, agricultural fields and some scattered oak woodland may be considered scenic resources; however, in these areas, improvements proposed by the project would be buried underground and would occur in existing rights-of-way, or would occur on sites already developed. Existing agricultural fields and oak woodland would not be substantially altered by the project.

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to designated scenic highways. According to the Caltrans list of designated scenic highways under the California Scenic Highway Program, there are only two officially designated state scenic highways within San Joaquin County: Interstate 5 from the Stanislaus County Line to Interstate 580, and Interstate 580 from Interstate 5 to the Alameda County Line (Caltrans 2019). These are in southwestern San Joaquin County and not in the Master Plan area.

San Joaquin County has designated several local highways as having scenic value in the Cultural and Natural Resources Element of its General Plan (San Joaquin County 2016b). Local scenic highways include SR 12/88 through downtown Lockeford and Elliott Road

from SR 12/88 north to Peltier Road. As noted above, none of the improvements proposed in the Master Plan would be in downtown Lockeford or along Elliott Road, so these scenic highways would not be affected. Another designated local scenic highway is Jack Tone Road from SR 12/88 south to Eight Mile Road. Only limited improvement work would occur on Jack Tone Road, and the work would not alter the existing landscape visible from this road. Project impacts on scenic resources or highways would be less than significant.

c) Visual Character and Quality.

A recent change to the Environmental Checklist in CEQA Guidelines Appendix G emphasizes aesthetic and visual resource impacts on public views in non-urbanized areas. As defined in Appendix G, "public views" are views that are experienced from publicly accessible vantage points. Although not specifically defined, "publicly accessible vantage points" are assumed to include, though not necessarily limited to, public roads, parks, trails, and vista turnouts.

Downtown Lockeford, which is considered to have distinctive visual character, would not be affected by the proposed improvements. Public views of the existing landscapes along County roads in the Master Plan area may be temporarily altered by pipeline installation work along the roadways. However, once construction work is completed, the landscapes would return to their previous condition. In general, pump station improvements would occur on existing pump station sites or in existing or planned developed areas. In either case, the pump station improvements would not be visually prominent features in the surrounding landscape and would be visually consistent with the developed landscapes.

WWTP improvements would be confined to the WWTP property. Existing WWTP facilities, except for the CSD building and the vegetated pond berms, are not visible from the adjacent public roads – Brandt Road and Tully Road. Planned small-scale tertiary wastewater treatment equipment to be installed south of the LCSD offices would not involve significant visual changes. Therefore, proposed WWTP improvements would have no significant visual impacts.

Installation of the recharge ponds would alter existing views of the areas within which they are installed. The Historic WWTP site is mostly vacant, and there are no public roads adjacent to this location, so visual character impacts associated with the use of this area for groundwater recharge would be minimal. Public views of Reclamation Area 2 from Tully Road would be altered with recharge pond development. However, the ponds would cover only a portion of Reclamation Area 2 and would be setback a considerable distance from Tully Road; most of this site would be irrigated pasture that would be consistent with the surrounding rural landscape. Visual character impacts on this site are considered minimal.

In summary, the proposed improvements under the Master Plan would mostly have temporary visual impacts related to construction. Visual character impacts after completed construction work would be minimal to non-existent. Project impacts related to visual character and quality would be less than significant.

d) Light and Glare.

The project does not propose any improvements that would require lighting. As such, land uses sensitive to lighting changes, such as residences, would not experience any changes in illumination levels. The planned improvements would not produce any glare that could disturb sensitive areas, as they would be underground or away from public view. The project would have no impact related to light and glare.

3.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			✓	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			✓	
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))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
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?			✓	

NARRATIVE DISCUSSION

Environmental Setting

Agriculture has been, and continues to be, an important part of the economy in San Joaquin County. Approximately 86.7% of the county's land area was in farms and pasture as of 2017 (U.S. Department of Agriculture 2019). The gross value of agricultural production in the county was $3,031,279,000 in 2020, which represented an increase in value of approximately 15.79% from 2019. The top five agricultural products in 2020 were

almonds, all milk, all grapes, English walnuts, and cherries (San Joaquin County Agricultural Commissioner's Office 2021).

The Lockeford community historically prospered as an agricultural processing center, with dairy and beef cattle, hogs, and produce farmed on the bottomlands of the Mokelumne River. Recent agricultural trends have been toward development of orchards and vineyards, permanent irrigated pastures of Ladino clover, alfalfa, and ryegrass (San Joaquin County 2016a). The Kautz property currently has vineyards, but this property has been approved by the County for future development.

Environmental Impacts and Mitigation Measures

a) Agricultural Land Conversion.

The Important Farmland Maps, prepared by the California Department of Conservation as part of the Farmland Mapping and Monitoring Program, designate the viability of lands for farmland use, based on the physical and chemical properties of the soils. Classifications include Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, which are defined as Farmland by CEQA Guidelines Appendix G, along with other agricultural and non-agricultural classifications.

According to the 2018 Important Farmland Map of San Joaquin County, the Master Plan area has several designations, some of which are non-agricultural such as Urban and Built-Up Land. Other lands, notably Reclamation Area 2 and the Historic WWTP site, are designated Farmland of Local Importance, which is not important Farmland as defined by the CEQA Guidelines. However, a few of the agricultural areas within the Master Plan area are designated Prime Farmland and Farmland of Statewide Importance, which are considered Farmland.

Collection system improvements proposed by the Master Plan would be buried underground, would occur in existing road rights-of-way, or would occur on sites already developed. All WWTP improvements would occur on land designated Urban and Built-Up Land. Only negligible amounts of land designated as Farmland would be converted to non-agricultural uses by the proposed improvements. This would mainly involve the proposed North Tully Road Pump Station, which would be part of the approved Kautz property development. Project impacts on Farmland conversion would be less than significant.

b) Agricultural Zoning and Williamson Act.

There are lands within the Master Plan area that are zoned General Agriculture or Agriculture-Urban Reserve. The latter zone is intended to retain in agriculture those areas planned for future urban development to facilitate compact, orderly urban development and to assure the proper timing and economical provision of services and utilities. Most of the agricultural land is zoned Agriculture-Urban Reserve. Most of the General Agriculture land consists of the Kautz property, which has been approved for development by the County.

The Williamson Act is State legislation that preserves agricultural land through a program that permits contracts between landowners and local government that keep contracted land in agricultural use in exchange for a lower property tax assessment. As of 2008, there were

approximately 1,204 parcels under a Williamson Act contract in the Lockeford Planning Area, which includes most of northeastern San Joaquin County (San Joaquin County 2016a). As of 2016, land within the Master Plan area is either not under a Williamson Act contract or an application for not renewing a Williamson Act contract has been filed (California Department of Conservation 2016). Project impacts related to agricultural zoning and the Williamson Act would be less than significant.

c, d) Forest Land Zoning and Conversion.

As described in Section 3.1, Aesthetics, the Master Plan area contains oak woodland. However, no lands are designated as timberland or zoned for timberland uses. In addition, as with agricultural land, no existing oak woodland would be converted to non-agricultural use with implementation of the Master Plan improvements. The project would have no impact on forest land zoning or conversion.

e) Indirect Conversion of Farmland and Forest Land.

The project proposes improvements to the wastewater system that by themselves would involve only minimal conversion of Farmland, as described in a) above. However, the improvements would support potential future development within the Master Plan area, some of which would lead to the conversion of Farmland to non-agricultural uses. As noted, the agricultural land within the Master Plan area either has been approved for development (Kautz property) or is designated Agriculture-Urban Reserve, which anticipates future development. Nevertheless, potential conversion of Farmland is considered a significant impact.

Should a development project be proposed within the Master Plan area, it would be subject to CEQA review by the County, as the CSD does not have land use decision-making authority. During the County CEQA review, specific impacts of a project on potential conversion of Farmland should be evaluated. It is expected that if a development project is approved by the County that would affect Farmland, the project would be required to mitigate the impact, which would likely include compliance with the County's Agricultural Mitigation Ordinance (San Joaquin County Code Chapter 9-1080). The Agricultural Mitigation Ordinance requires mitigation for lands converted by General Plan amendment or rezoning from agricultural to non-agricultural use. Mitigation shall be satisfied by granting a farmland conservation easement or other farmland conservation mechanism to or for the benefit of a qualifying entity, such as a farmland trust. Alternatively, the project applicant may pay an in-lieu fee with approval of the County Board of Supervisors. The County would determine if any mitigation measures would be required, not the CSD.

The proposed improvements would not serve any areas that are currently not planned for development. Therefore, Master Plan impacts related to indirect conversion of Farmland would be less than significant. As the Master Plan area contain no designated forest lands, the project would have no impact on indirect conversion of forest lands.

3.3 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment 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?			✓	

NARRATIVE DISCUSSION

Environmental Setting

Air Quality Background

The Master Plan is area within the San Joaquin Valley Air Basin. The San Joaquin Valley Air Pollution Control District (SJVAPCD), which includes San Joaquin County, has jurisdiction over most air quality matters in the Air Basin; vehicle emissions are the responsibility of the California Air Resources Board (ARB). The SJVAPCD is tasked with developing and implementing plans, programs and regulations that would enable the Air Basin to attain ambient air quality standards set under both the federal and California Clean Air Acts. Under their respective Clean Air Acts, both the State of California and the federal government have established ambient air quality standards for six criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. California has four additional criteria pollutants under its Clean Air Act; none of these additional pollutants would be generated in the Master Plan area.

Table 3-1 shows the current attainment status of the Air Basin relative to the federal and State ambient air quality standards for criteria pollutants. Except for ozone and particulate matter, the Air Basin is in attainment of, or unclassified for, all federal and State ambient air quality standards. Ozone is not emitted directly into the air but is formed when reactive organic gases (ROG) and nitrogen oxides (NO_x) react in the atmosphere in the presence of sunlight. The SJVAPCD currently has a 2007 Ozone Plan and a 2013 Plan for the Revoked 1-Hour Ozone Standard for the Air Basin to attain federal ambient air quality standards for ozone.

Particulate matter is a mixture of solid and liquid particles suspended in air, including dust, pollen, soot, smoke, and liquid droplets. In San Joaquin County, particulate matter is generated by a mix of rural and urban sources, including agricultural operations, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere. Two types of particulate matter are of concern: particulate matter 10 micrometers or less in diameter (PM_{10}), and particulate matter 2.5 micrometers or less in diameter ($PM_{2.5}$). The SJVAPCD currently has a 2015 $PM_{2.5}$ Plan for the 1997 federal $PM_{2.5}$ standard, a 2012 $PM_{2.5}$ Plan for the 2006 federal $PM_{2.5}$ standard, a 2016 Moderate Area Plan for the 2012 federal $PM_{2.5}$ standard, and a 2007 PM_{10} Maintenance Plan to maintain the Air Basin's attainment status of the federal PM_{10} standard.

TABLE 3-1
SAN JOAQUIN VALLEY AIR BASIN ATTAINMENT STATUS

	Designation/Classification	
Criteria Pollutant	**Federal Primary Standards**	**State Standards**
Ozone - One hour	No Federal Standard	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_x)	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_x)	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2022.

In addition to the criteria pollutants, the California Air Resources Board has identified other air pollutants as toxic air contaminants (TACs) - pollutants that are carcinogenic (i.e., cause cancer) or that may cause other adverse short-term or long-term health effects. Diesel particulate matter, considered a carcinogen, is the most common TAC, as it is a product of combustion in diesel engines. It is present at some concentration in all developed areas of the state. Other TACs are less common and are typically associated with industrial operations.

Regulatory Setting

As noted, the SJVAPCD is tasked with implementing regulations designed to attain ambient air quality standards set under both the federal and California Clean Air Acts. SJVAPCD rules and regulations that are potentially applicable to the project are summarized below.

Rule 4101 (Visible Emissions)

This rule prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.

Regulation VIII (Fugitive Dust PM_{10} Prohibitions)

Rules 8011-8081 are designed to reduce PM_{10} 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.

Rule 9510 (Indirect Source Review)

Rule 9510, also known as the Indirect Source Rule, is intended to reduce or mitigate construction and operational emissions of NO_x and PM_{10} generated by new development, either directly and/or by payment of off-site mitigation fees. Construction emissions of NO_x and PM_{10} exhaust must be reduced by 20% and 45%, respectively. Operational emissions of NO_x and PM_{10} must be reduced by 33.3% and 50%, respectively. Rule 9510 applies to projects of a land use not otherwise identified in the rule that is 9,000 square feet of space or greater. However, development projects that have a mitigated baseline below two tons per year of NO_x and two tons per year of PM_{10} shall be exempt from the requirements in Sections 6.0 and 7.0 of the rule, which involve general mitigation requirements and the off-site emission reduction fee.

Environmental Impacts and Mitigation Measures

a) Air Quality Plan Consistency.

In 2015, the SJVAPCD adopted a revised Guide for Assessing and Mitigating Air Quality Impacts, which defines an analysis methodology, thresholds of significance, and mitigation measures for the assessment of air quality impacts for land development projects within SJVAPCD's jurisdiction. Table 3-2 shows the CEQA thresholds of significance for pollutant emissions within the SJVAPCD. Emissions that meet or exceed its significance threshold are considered to have a significant impact for CEQA purposes. The significance thresholds apply to emissions from both project construction and project operations.

As noted, project construction and/or operational emissions that meet or exceed the significance thresholds identified in Table 3-2 would be considered a significant environmental impact. As the significance thresholds were established in part to ensure

consistency with the objectives of air quality attainment plans adopted by the SJVAPCD, emissions that are below these thresholds would be consistent with these plans.

It is expected that most of the improvements described in the Master Plan would generate emissions solely from their construction, mainly fugitive dust emissions and emissions from construction equipment and worker vehicle trips. Construction emissions would be temporary and would cease when work is completed. Moreover, it is expected that construction emissions would not exceed SJVAPCD significance thresholds.

TABLE 3-2
SJVAPCD SIGNIFICANCE THRESHOLDS

Pollutant	Significance Threshold (tons/year)[1]	Sample Main Project (tons/period)	Sample Pond Project (tons/period)
Reactive organic gases (ROG)	10	0.05	0.16
Nitrogen oxides (NO_x)	10	0.23	2.30
Carbon monoxide (CO)	100	0.48	1.71
Sulfur oxides (SO_x)	27	N/A	<0.01
Particulate matter <10 microns (PM_{10})	15	0.02	0.39
Particulate matter <2.5 microns ($PM_{2.5}$)	15	0.01	0.05

[1] Applies to both construction and operational emissions.
See text below for explanation of sample projects.
N/A – not available
Sources: SJVAPCD 2015, Road Construction Emissions Model v. 9.0.0, Cal EEMod v. 2020.4.0.

To assess this possibility, construction emissions associated with the longest sewer main improvement (#4 of Table 2-1, which is 6,200 linear feet) were estimated using the Road Construction Emissions Model (RCEM). Although originally developed for road projects, the RCEM has been modified to provide emission estimates for projects that are linear in character, such as pipeline installation. Appendix A of this IS/MND contains the results of the RCEM run. Based on a six-month construction period, estimated construction emissions for the 6,200-foot main project are presented in Table 3-2 above. All emissions would be below their respective SJVAPCD significance thresholds. Based on the results, it can be reasonably assumed that all proposed sewer main projects proposed by the Master Plan would not have a significant impact related to construction air pollutant emissions.

Construction of other improvements could generate emissions that exceed SJVAPCD thresholds. To assess this possibility, construction emissions associated with the largest pond improvement – Phase 3a of Table 2-4, which is 14.56 acres – were estimated using the California Emissions Estimator Model (CalEEMod). CalEEMod is an air quality modeling program recommended for use by the SJVAPCD in analyzing the air quality impacts of projects. Appendix A contains the results of the CalEEMod run. Based on a six-month construction period, estimated construction emissions for the Phase 3a pond project are also presented in Table 3-2 above. All emissions would be below their respective

SJVAPCD significance thresholds. Based on the results, it can be reasonably assumed that all proposed pond and other improvement projects proposed by the Master Plan would not have a significant impact related to construction air pollutant emissions.

Improvement construction would be required to comply with applicable SJVAPCD rules and regulations designed to reduce potential air quality impacts such as Regulation VIII, which contains measures to reduce fugitive dust emissions. Dust control provisions are also routinely included in site improvement plans and specifications, along with construction contracts. Project construction would also comply with other SJVAPCD rules such as Rule 9510 if applicable.

Project operations would not generate any air pollutant emissions once construction work is completed. The proposed force mains and improved pump stations would be operated by electricity, as would WWTP facilities. It is possible that backup generators may be used should there be any power outages; some of these may run on diesel fuel. Backup generators would be used only during emergencies; infrequent use is anticipated. Moreover, both the U.S. Environmental Protection Agency (EPA) and the ARB have emission standards for emergency generators that strictly limit the amounts of NO_x and particulate matter emissions. Therefore, the use of non-electric generators would generate only minimal emissions.

In summary, the impacts of implementing the improvements proposed in the Master Plan on air quality plans would be less than significant, with implementation of applicable rules and regulations and the mitigation measure described below.

Level of Significance: Potentially significant

Mitigation Measures:

AQ-1: The contractor for an improvement identified in the Wastewater Master Plan shall reduce internal combustion engine emissions from construction equipment and vehicles by implementing the following:

- Tune and maintain all construction equipment to manufacturer's specifications.
- Use low-sulfur fuels or alternative fuels for construction equipment or use electrical equipment, whenever feasible.
- Limit idling of construction equipment and trucks to no longer than five minutes, in accordance with State regulations.
- Locate construction parking areas to minimize traffic interference.
- Provide adequate ingress and egress at work sites and staging areas to minimize vehicle idling.

Significance After Mitigation: Less than significant

b) Cumulative Emissions.

As noted in a) above, operational emissions associated with the proposed improvements are expected to be minimal. Future attainment of federal and State ambient air quality standards is a function of successful implementation of the SJVAPCD's attainment plans. Consequently, the application of significance thresholds for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Pursuant to the Guide for Assessing and Mitigating Air Quality Impacts, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable federal or State ambient air quality standards. As operational emissions are not expected to exceed SJVAPCD significance thresholds, the cumulative impacts of these emissions would be less than significant.

c) Exposure of Sensitive Receptors.

As defined in the Guide for Assessing and Mitigating Air Quality Impacts, "sensitive receptors" include residences, schools, parks and playgrounds, day care centers, nursing homes, and hospitals (SJVAPCD 2015). The most significant air pollutant emissions would come from construction activities. As noted, construction emissions would be temporary and would cease when work is completed. Also, as discussed in a) above, compliance with SJVAPCD rules and regulations, along with implementation of Mitigation Measure AQ-1, would reduce potential air quality impacts from construction activities to a level that would be less than significant. This would also reduce potential exposure of nearby sensitive receptors to these emissions.

As noted, any operational emissions would be minimal; therefore, any sensitive receptors are unlikely to be exposed to these emissions. Project impacts related to exposure of sensitive receptors would be less than significant with application of mitigation.

Level of Significance: Potentially significant

Mitigation Measures: Implementation of Mitigation Measure AQ-1.

Significance After Mitigation: Less than significant

d) Odors and Other Emissions.

Implementation of the proposed improvements in the Master Plan is not expected to generate odors that would be detectable by sensitive receptors. New sewer lines and force mains would be buried underground. Pump station facilities are mostly underground in concrete wet wells, and odors from collected wastewater are unlikely to be generated by pump stations. The existing Bear Creek Pump Station operates in a residential area, and no odor complaints have been received by the CSD (Colwell pers. comm.).

Improvements at the WWTP have the potential to generate odors that could affect sensitive receptors. The Guide for Assessing and Mitigating Air Quality Impacts sets a screening level of two miles for wastewater treatment facilities to determine if odor impacts should be analyzed (SJVAPCD 2015). Future residential development may occur within two miles of the WWTP.

The WWTP is required to maintain a dissolved oxygen concentration of at least 1.0 milligram per liter (mg/L) in the upper one foot of the treatment ponds to minimize odors. Additionally, a condition of the Waste Discharge Requirement (WDR) order under which the WWTP is permitted to operate requires that objectionable odors shall not be perceivable beyond the limits of the WWTP property. Compliance with these requirements would ensure that any odors generated by the WWTP after improvements have been installed would not affect any nearby sensitive receptors. In addition, the Master Plan indicates that new aerators would be installed at the WWTP. The aerators are expected to further minimize odors by ensuring the required dissolved oxygen concentration is maintained. It should be noted that land use decision-making authority on development projects rests with the County, not with the CSD. The County would determine if impacts of a development project related to odors would be significant.

Treated effluent may be discharged to two Reclamation Areas, where the effluent would be used to irrigate pastures or for direct groundwater recharge. The two alternative Reclamation Areas are in rural areas where there are few residences, and the treated effluent is not expected to generate substantial odors. Should effluent be discharged to the Historic WWTP site, its prior treatment would ensure that odors would not reach the residential area to the north.

Other emissions of concern are TACs, specifically diesel particulate matter emissions. Diesel particulate matter emissions would be generated by construction equipment and vehicles used during construction of improvements. Some of this construction may occur near residences, which would potentially be exposed to these emissions. As noted, construction emissions would be temporary and would cease when work is completed. Diesel particulate matter emissions would pose a risk to health only with long-term exposure, so emissions from construction activities would not be a health hazard.

Operations are not expected to generate any diesel particulate matter emissions, other than from diesel-fueled backup generators. As discussed in a) above, backup generator use would be limited to emergencies only. Therefore, it would not lead to long-term exposure by sensitive receptors to diesel particulate matter emissions.

In summary, the project is not expected to increase odors associated with wastewater collection and treatment, and potential TAC emissions would not be at a level that poses a potential risk to health. Project impacts related to odors and other emissions are considered less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
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?		✓		
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?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
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?			✓	

NARRATIVE DISCUSSION

Information for this section was provided primarily by a Biological Assessment of the project site prepared by Moore Biological Consultants. The Biological Assessment is available in Appendix B of this document. Preparation of the Biological Assessment involved a search of the California Natural Diversity Database (CNDDB), managed by the California Department of Fish and Wildlife (CDFW), and preparation of the IPaC Trust Resource Report by the U.S. Fish and Wildlife Service (USFWS). It also involved field surveys of the project site that were conducted on June 23 and August 19, 2022.

Environmental Setting

Existing Vegetation

The project site consists of several components that are distributed over a range of habitat types different habitat types, most of which are highly disturbed from development or agricultural activities. Most of the proposed sewer pipelines and force mains are located along existing roads adjacent to agricultural fields, industrial parcels, and residential areas. The pump station locations are in disturbed areas adjacent to existing roads. The potential recharge ponds are located in open grassland fields, with Reclamation Area 1 being disturbed by past use for wastewater treatment and the proposed Reclamation Area 2 being disturbed by ongoing dryland hay farming.

The grasslands on the project site are best described as ruderal annual grassland that has been highly disturbed from periodic mowing and/or disking, hay farming, and/or development. Grasses including oats, ripgut brome, soft chess brome, and foxtail barley, are dominant grass species in the site. Other grassland species such as black mustard, prickly lettuce, yellow star thistle, field bindweed, chicory, and filaree, tall annual willowherb, and common mallow are intermixed with the grasses.

There are several trees in and adjacent to the project area. The most notable trees are valley oaks, which are primarily growing in oak woodlands in the north part of the area and along Bear Creek. The Bear Creek riparian corridor also supports willows and other riparian trees and shrubs. There are also some notable coast live oaks and other trees scattered throughout the project area. Many of the other trees are ornamental species used for landscaping of homes, businesses, and roads.

Seasonal wetlands on the Reclamation Area 2 site support hydrophytes such as popcorn flower, coyote thistle, Mediterranean barley, and hyssop loosestrife. No blue elderberry shrubs, which provide habitat for the special-status species valley elderberry longhorn beetle, were observed in or adjacent to the project site.

Existing Wildlife

The field surveys observed a variety of bird species, all of which are common species found in agricultural and riparian areas of northeast San Joaquin County. Canada goose, turkey vulture, American kestrel, mourning dove, California scrub jay, northern mockingbird, white-crowned sparrow, and Brewer's blackbird are representative of the avian species observed in the site. There are several potential nest trees in the site and in close proximity to planned improvements that are suitable for nesting raptors and other protected migratory birds, including Swainson's hawk. A variety of smaller birds, such as songbirds, likely nest within the trees, shrubs, and grasslands in the site, particularly within vegetation along the Bear Creek riparian corridor, and areas of oak woodlands. Red-winged blackbird and other songbirds may nest in weedy grasslands on the site. Although road shoulders in the site are primarily bare dirt and gravel, it is possible that ground-nesting songbirds, such as killdeer, nest on the ground on or adjacent to the site.

Several mammals common to agricultural areas are likely to occur on the project site. Several California ground squirrels and their burrows were observed within and adjacent to the site during the field surveys; pocket gopher burrows were also observed. Other common mammals are expected to occur in the project site, including coyote, red fox, raccoon, black-tailed hare, striped skunk, and Virginia opossum. Species of small rodents such as mice and voles also likely occur.

Based on habitat types present, a variety of amphibians and reptiles may use habitats on the project site. Western fence lizard was the only reptile observed within the site during the field surveys; no amphibians were observed. Common amphibians and reptile species such as Pacific chorus frog, gopher snake, common king snake, western terrestrial garter snake, and western skink may also occur on the project site. Bear Creek provides suitable habitat for a few common warm water fish species such as largemouth bass and bluegill sunfish.

Wetlands and Waters of the U.S. and State

Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations 328 to include navigable waterways, their tributaries, and adjacent wetlands. Waters of the U.S. encompass Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their intermittent tributaries. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the "ordinary high-water mark," which is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris. State and federal agencies regulate these habitats, and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands.

Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the U.S. Army Corps of Engineers (Corps) Wetlands Delineation Manual and Regional Supplement. Jurisdictional wetlands are usually adjacent to or hydrologically associated with Waters of the U.S. Most isolated wetlands are outside federal jurisdiction but may be regulated by the Regional Water Quality Control Board (RWQCB) under the State Wetlands Program.

Bear Creek is mapped as a "blue-line" drainage on the USGS topographic map and is mapped as a "Freshwater Emergent Wetland" feature in the National Wetland Inventory. Bear Creek is a jurisdictional Water of the U.S., although it is not considered navigable. As such, work on or near Bear Creek would require a permit under Section 404 of the federal Clean Water Act issued by the Corps. Bear Creek also falls under the jurisdiction of RWQCB and CDFW, the latter's jurisdiction also including the riparian corridor.

An estimated three acres of seasonal wetlands were identified on the Reclamation Area 2 site. Despite high levels of disturbance from farming, the field is not leveled and there are topographic low areas scattered throughout the field. The seasonal wetlands have wetland hydrology, as evidenced by ponded water in wet season aerial photographs. The seasonal

wetlands also contain cracked soils, which is indicative of hydric soils. As noted, the seasonal wetlands have hydrophytic plant species.

Special-Status Species

"Special-status species" are species that are listed under the federal or California Endangered Species Acts, along with species of concern as designated by State or federal agencies or by organizations such as the California Native Plant Society. A search of the CNDDB and IPaC databases indicated the potential presence of 21 special-status species in the project vicinity: three plant species and 18 wildlife species. Table 3 of the Biological Assessment in Appendix B lists these special-status species, along with their listing status and potential for occurrence on the project site. The database search results on which the table is based are also available in the Biological Assessment. No special-status species were observed during the field surveys.

Conservation Plans and Ordinances

San Joaquin County Multi-Species Open Space and Habitat Conservation Plan

The San Joaquin County Multi-Species Open Space and Habitat Conservation Plan (SJMSCP) is a comprehensive plan for assessing and mitigating the biological impacts of converting open space or biologically sensitive lands to urban development in San Joaquin County and its incorporated cities. For the conversion of open space to non-open space uses that affect covered plant, fish, and wildlife species, the SJMSCP provides three compensation methods: preservation of existing sensitive lands, creation of new comparable habitat on the project site, or payment of fees that would be used to secure preserve lands outside the project site. In addition to fee payments, the SJMSCP identifies Incidental Take Minimization Measures - protection measures that avoid direct impacts of development on special-status species - with which projects are required to comply (SJCOG 2000).

The San Joaquin Council of Governments (SJCOG) implements the SJMSCP on a project-by-project basis. Participation in the SJMSCP is voluntary for project proponents. However, if a project chooses to not participate in the SJMSCP, it shall be responsible for mitigating its biological resource impacts and for obtaining any required permits.

Environmental Impacts and Mitigation Measures

a) Special-Status Species.

Of the special-status species identified in the Biological Assessment, most are considered unlikely to occur on the project site due to lack of suitable habitat. Of the special-status plant species, potential habitat along Bear Creek was identified for Sanford's arrowhead, listed on the California Native Plant Society's Rare Plant Inventory. However, the nearest recorded occurrence of Sanford's arrowhead is approximately 2.5 miles southwest of the project site; therefore, occurrence of this species is considered unlikely.

While the project site may have provided habitat for several special-status wildlife species at some time in the past, farming and development have substantially modified natural habitats in the greater project vicinity, including most of the project site. Of the wildlife species identified in the CNDDB, Swainson's hawk (threatened under California Endangered Species Act), white-tailed kite (State Species of Concern), California tiger salamander (threatened under federal and California Endangered Species Acts), and vernal pool fairy shrimp (threatened under federal Endangered Species Act) are the special-status species with potential to occur in the site on more than a transitory or occasional basis. Swainson's hawk and white-tailed kite could be adversely affected by conversion of foraging habitat to development and/or disturbed by construction if construction occurs in close proximity to active nests, which could result in nest abandonment. Vernal pool fairy shrimp and California tiger salamander, if present in the seasonal wetlands and grasslands near these wetlands, could be impacted by construction in or near the wetlands and grasslands. Conversion of these habitats to recharge ponds or other wastewater facilities could result in a take of vernal pool fairy shrimp; protocol-level surveys would be needed to determine if the seasonal wetlands are occupied by vernal pool fairy shrimp.

The Biological Assessment noted that take authorization for most of the infrastructure improvements included in the proposed project would likely be best accomplished through participation in the SJMSCP. The SJMSCP covers potential take of all four special-status wildlife species that may potentially occur in the project area; Incidental Take Minimization Measures have been developed for each species and are required in conjunction with participation in the SJMSCP. Mitigation prescribed below suggests participation in the SJMSCP for each infrastructure improvement; if a proposed improvement is not covered through SJMSCP participation, each improvement should include consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife and would require separate biological pre-construction surveys.

Standard Take Avoidance measures outlined in the SJMSCP for nesting Swainson's hawks, white-tailed kite will likely be required. These will include pre-construction surveys for nesting Swainson's hawks within 0.5 miles of the site for construction activities between March 1 and September 15 and pre-construction surveys for white-tailed kite for construction activities between February 15 and September 15. If active nests are found, temporal restrictions on construction as outlined in the SJMSCP will be required.

Because there is a documented California tiger salamander breeding pond approximately 1,200 feet northwest of the proposed North Reclamation Area, this species may be present in grassland habitats in and adjacent to some of the project components. As this species can traverse over a mile from breeding ponds to where it lives underground in small burrows and cracks, this species could occur throughout much of the project site. California tiger salamander may also potentially breed in some of the seasonal wetlands in the South Reclamation Area. Ground disturbance, particularly excavation, could result in take of California tiger salamander.

Overall, the project will contribute to a cumulative loss of open space and associated biological resource values and may result in take of special status species or species protected by MBTA. FGCC, or other laws and regulations. With the exception of the South

Reclamation Area, mitigation for the loss of open space and authorization for special-status species take for each of the infrastructure improvements covered by the Master Plan would be best accomplished through participation in the SJMSCP (SJCOG, 2000).

The Biological Assessment also notes that participation in the SJMSCP for proposed Reclamation Area 2 improvements and permitting for fill may be cost-prohibitive, given the prevalence of seasonal wetlands at that site. Mitigation presented below would require a comprehensive wetland delineation and a protocol-level survey for vernal pool fairy shrimp prior to any final decision on the use of Reclamation Area 2. Implementation of these mitigation measures would reduce potential impacts on special-status species to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

BIO-1: The LCSD shall retain a qualified biologist to perform a focused biological assessment prior to implementation of each of the infrastructure improvements (project) covered by the Master Plan.

BIO-2: The LCSD should consider and if feasible participate in and obtain coverage for each project under the San Joaquin County Multi-Species Habitat Conservation and Open Space (SJMSCP)prior to ground disturbance. The project applicant shall mitigate for the proportionate loss of potential wildlife habitat from the project site by paying required SJMSCP fees and implementing any Incidental Take Minimization Measures prescribed by the San Joaquin Council of Governments (SJCOG). A biologist representing SJCOG will visit the project site prior to the issuance of Incidental Take Minimization Measures.

BIO-3: In the event that the LCSD does not participate in and obtain coverage under the SJMSCP for a project, it shall consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife and perform pre-construction surveys or take other required action in accordance with recommendations from the agencies.

BIO-4: No work shall occur on the proposed Reclamation Area 2 site until further biological resource analysis of the site is conducted. This analysis shall include a comprehensive wetland delineation to current U.S. Army Corps of Engineers standards and conducting a protocol-level survey for vernal pool fairy shrimp. Upon completion of the analysis, the Lockeford CSD shall consider the feasibility of participating in the SJMSCP for any project work in the Reclamation Area 2 site. If participation in the SJMSCP is not considered feasible, then the Lockeford CSD shall find an alternative location for the activities proposed in Reclamation Area 2.

Significance After Mitigation: Less than significant

b) Riparian and Other Sensitive Habitats.

Sensitive vegetation communities in the project site include the riparian woodlands along Bear Creek, oak woodlands, and vernal pool grasslands. As discussed above, a majority of the project is in areas that are either already developed, being used for farmland, or vegetated in ruderal grasses and weeds. The potential removal of few oak trees along the pipeline alignments and minimal trimming and/or vegetation removal associated with the two Bear Creek crossings is expected to result in less than significant impacts to sensitive vegetation communities. In contrast, the conversion of vernal pool grassland habitats wetlands in the South Reclamation Area to project features is a potentially significant impact.

A limited amount of riparian vegetation, including oaks, willows (Salix sp.), and Himalayan blackberries (Rubus armeniacus) may also need to be removed and/or trimmed to allow for pipeline installation at the Bear Creek pipeline crossings. Tree removal and vegetation clearing/trimming associated with the project will be limited and is viewed as a less than significant impact.

c) State and Federally Protected Wetlands.

As noted, the Biological Assessment identified only two places where Waters of the U.S. and potentially protected wetlands exist: Bear Creek and seasonal wetlands on the Reclamation Area 2 site. Improvement work within the ordinary high-water mark of Bear Creek would be required to obtain a Section 404 permit from the Corps, along with permits from CDFW and RWQCB. Planned trenchless crossings of Bear Creek would, however, avoid impacts that would require permits from jurisdictional agencies, reducing potential impacts to a level that would be less than significant.

Conversion of the approximately three acres of vernal pool grassland habitat wetlands in Reclamation Area 2 is a potentially significant impact. The seasonal wetlands may also be subject to Section 404 permitting, though it is not known if these wetlands are subject to federal jurisdiction. In the event the Corps declines to take jurisdiction over these wetlands, they may still be regulated by RWQCB as Waters of the State. The Biological Assessment noted that permitting the fill of the seasonal wetlands in the Reclamation Area 2 site appears cost-prohibitive, primarily due to the cost of compensatory mitigation. The Biological Assessment recommended that compensatory mitigation should be provided at a minimum ratio of 1:1 and would be best accomplished through the purchase of credits from an agency approved mitigation bank. Implementation of Mitigation Measure BIO-2 would require a comprehensive wetland delineation to current standards prior to any decision on work in Reclamation Area 2, plus a search for an alternate site if mitigation of impacts is not feasible. Implementation of this mitigation would avoid or minimize impacts on the seasonal wetlands to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures: Implementation of Mitigation Measures BIO-2

Significance After Mitigation: Less than significant

d) Fish and Wildlife Movement.

The only wildlife movement corridors in the site are the riparian corridors along Bear Creek. Well-developed riparian corridors, such as those along Bear Creek, are often utilized for movement by wildlife species such as deer (Odocoileus hemionus columbianus), coyote, and red fox (Vulpes vulpes), as well as a variety of amphibians, reptiles, and fish. Habitat disturbance would be limited to a small amount of vegetation clearing and/or trimming during the installation of the force mains. The proposed force mains will either be attached to the existing bridge or installed under the creek using trenchless technology, minimizing impacts to habitats to Bear Creek and its riparian corridor. The two force main crossings over Bear Creek will not impede wildlife movement and the project is expected to result in less than significant impacts to wildlife movement.

e) Local Biological Requirements.

A few oaks and other trees may need to be removed along the proposed pipeline alignments. For example, there are several oaks in the vicinity of the proposed pipeline that runs south from Locke Road and then turns east to Highway 88. It can be expected that tree removal will be minimized to the maximum extent possible to install the pipeline. Tree removal and vegetation clearing/trimming associated with the project will be limited and is viewed as a less than significant impact.

f) Conflict with Habitat Conservation Plans.

As noted, Mitigation Measure BIO-1 would require LCSD to consider participating in the SJMSCP for improvement project under the Master Plan and compliance with any applicable provisions as determined by SJCOG. No other habitat conservation plans apply to the project site. In the event that the LCSD elects not to participate in the SJMSCP for a project, alternative mitigation that accomplishes the same purposes is required. The project would have no impact related to conflict with habitat conservation plans.

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?			✓	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		✓		
c) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

NARRATIVE DISCUSSION

Information for this section was provided primarily from a technical memorandum prepared by Solano Archaeological Services. The memorandum is available in Appendix C of this document. Analysis of potential cultural resource impacts described in the memorandum involved a records search conducted by the Central California Information Center at California State University Stanislaus, along with a search of historic maps. Supplemental information is provided by background studies for the San Joaquin County General Plan, with citation.

Environmental Setting

The Master Plan area is in the ethnographic territory of the Northern Valley Yokuts. Section 3.18, Tribal Cultural Resources, discusses the Yokuts in more detail.

The town of Lockeford is located in Elliott Township, which was laid out three years after the formation of San Joaquin County. The name "Lockeford" was derived from a ford in the Mokelumne River located on a ranch belonging to Dr. Dean J. Locke, who settled the area in 1851 (San Joaquin County 2016a). The post office was established in 1861 with Luther Locke, father of the town's founder, as the first postmaster. The community prospered as an agricultural processing center, with dairy and beef cattle, hogs, and produce farmed on the rich bottomlands of the Mokelumne River (San Joaquin County 2016a). The town of Lockeford was laid out in June of 1862, and platted by S. P. Sabin, a blacksmith who came to the place in 1860. By 1879, when Thompson & West published their history of San Joaquin County, the main street of Lockeford was laid out with commercial, residential, and public buildings.

As the town grew, Lockeford developed into a transportation hub for eastern San Joaquin County, with access provided by trails, roads, river, and railroad. Lockeford was first served by the San Joaquin Sierra Nevada railroad in 1882. The railroad brought business and commerce to the town, including a creamery, a wagon manufacturer, and retail stores. Growth was slow but steady through the first part of the 20th century and increased during the 1970s and 1980s. Development was contained within the town's original boundaries for many years, but it extended well beyond the central area in the 1980s. The community's proximity to Stockton has fueled residential growth, with several single-family home subdivisions constructed in recent years (San Joaquin County 2016a).

There are several historical resources in the Lockeford area. The original post office, known as the "White House" or "Locke House and Barn," is listed on the National Register of Historic Places. Locke's Ford on Locust Street is a California Historic Landmark. Resources designated State Points of Historic Interest include Locke's Meat Market on SR 12/88, the Old Lockeford School on Jack Tone Road, and Harmony Grove Church and Cemetery on Locke Road (San Joaquin County 2016a).

a) Historical Resources.

The Central California Information Center forwarded the results of two records searches for the Master Plan area. The record searches demonstrated that two previously documented historic-era sites, consisting of a segment of the Union Pacific Railroad grade (P-32-00002), and a mid-20th century winery (P-39-004166), had been recorded in the project area. An additional resource, the circa 1860 Harmony Grove Methodist Church (P-39-000516) had been documented outside the Master Plan area but within a 100-foot search area. Given the narrow confines of much of the proposed project facilities, the Solano Archaeological Service memorandum concluded that it is unlikely that any of these resources would be impacted by Master Plan wastewater improvements. Therefore, project impacts on historical resources are considered less than significant.

b) Archaeological Resources.

A sample review of historic maps, including USGS topographic maps and General Land Office maps, show early developments that occurred within and near the Master Plan area. This research provided information on patterns of land use in and near the area and allowed for the identification of any archaeologically sensitive areas that could be affected by the proposed development in the Master Plan. Given the narrow confines of much of the Master Plan development footprint, the Solano Archaeological Service memorandum concluded that it is unlikely that any of these early development locations would be significantly impacted.

However, it is conceivable that ground disturbance activities associated with the construction of improvements could unearth archaeological materials of significance that are currently unknown. The Solano Archaeological Service memorandum recommended procedures to address archaeological discoveries if they should occur. These procedures are set forth in the mitigation measure below. Implementation of this mitigation measure would reduce potential impacts on archaeological resources to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

CULT-1: If any subsurface cultural resources are encountered during construction of improvements, all construction activities within 100 feet of the encounter shall be halted until a qualified archaeologist can examine these materials, determine their significance and, if significant, recommend further mitigation measures that would reduce potential effects to a level that is less than significant. LCSD shall notify potentially affected Native American tribes if recommended by the archaeologist. Recommended measures could include, but are not limited to, 1) preservation in place, or 2) excavation, recovery, and curation by qualified professionals, 3) processing materials for reburial,

4) minimizing handling of cultural objects, or 5) returning objects to a location within the project vicinity where they would not be subject to future impacts.

The Lockeford Community Services District shall be notified of all discoveries and shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written monitoring report, consistent with the requirements of the CEQA Guidelines.

Significance After Mitigation: Less than significant

c) Human Burials.

It is unlikely that construction of improvements would encounter Native American or other burials. Should burials be uncovered during construction, CEQA Guidelines Section 15064.5(e) and California Health and Safety Code Section 7050.5 describes the procedure to be followed when human remains are uncovered in a location outside a dedicated cemetery. Mitigation described below would ensure compliance with CEQA Guidelines Section 15064.5(e) California Health and Safety Code Section 7050.5, which would ensure that project impacts on human remains would be less than significant. Section 3.18, Tribal Cultural Resources, also discusses potential impacts on Native American burials.

Level of Significance: Potentially significant

Mitigation Measures:

CULT-2: In accordance with CEQA Guidelines Section 15064.5(e) and with California Health and Safety Code Section 7050.5, if human remains are uncovered during project construction, then all work within 100 feet of the find shall be halted, and the County Coroner shall be notified to determine if an investigation of the death is required. If it is determined that the remains are Native American in origin, then the County Coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the Most Likely Descendants of the deceased Native American, and the Most Likely Descendants may make recommendations on the disposition of the remains and any associated grave goods with appropriate dignity. If a Most Likely Descendant cannot be identified or fails to make a recommendation, or the CSD rejects the recommendations of the Most Likely Descendant, then the CSD shall rebury the remains and associated grave goods with appropriate dignity in a location not subject to further disturbance.

Significance After Mitigation: Less than significant

3.6 ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓

NARRATIVE DISCUSSION

Environmental Setting

Electricity is a major energy source for residences and businesses in California. In San Joaquin County, electricity consumption in 2020 totaled approximately 5,737 million kilowatt-hours (kWh), of which approximately 3,621 million kWh were consumed by non-residential uses and the remainder by residential uses (CEC 2022a). Natural gas is another major energy source. In San Joaquin County, natural gas consumption in 2020 totaled approximately 184 million therms, of which approximately 95 million therms were consumed by non-residential uses and the remainder by residential uses (CEC 2022b). Motor vehicle trips also account for substantial energy usage. The SJCOG estimated countywide daily vehicle miles traveled (VMT) was 17,868,785 miles in 2015, which led to the consumption of approximately 511 million gallons of gasoline and diesel fuel (SJCOG 2018).

Electricity is used to operate the pumps at the existing LCSD pump stations. The primary WWTP electrical service is 220 volts, 3-phase, 60 Hertz provided by the Pacific Gas and Electric Company (PG&E). The existing 400-amp electrical service is adequate for existing flows and equipment; however, any increased horsepower in aeration or treatment or additional levels of treatment are likely to require an upgrade to electrical service (Lockeford CSD 2021).

California has adopted a Renewables Portfolio Standard, which requires all electricity retailers in the state to generate 33% of electricity they sell from renewable energy sources (solar, wind, geothermal, etc.) by the end of 2020. As of the end of 2019, most of the retail sellers were on track to meet or exceed the 2020 target (CEC 2020). In 2015, SB 350 was signed into law, which increased the electricity generation requirement from renewable sources to 50% by 2030. In 2018, SB 100 was enacted, which accelerated the schedule for 50% electricity generation from renewable sources to 2026 and set a goal of 60% electrical

generation from renewable sources by 2030. It also set the goal that zero-carbon resources will supply 100% of electricity to California by 2045.

Environmental Impacts and Mitigation Measures

a) Project Energy Consumption.

Project construction activities would involve fuel consumption and use of other non-renewable resources. Construction equipment activities typically runs on diesel fuel or gasoline. The same fuels typically are used for vehicles that transport equipment and workers to and from a construction site. However, construction-related fuel consumption would be finite, short-term, and consistent with construction activities of a similar character. This energy use would not be considered wasteful, inefficient, or unnecessary. In addition, as discussed in Section 3.3, Air Quality, implementation of Mitigation Measure AQ-1 would require equipment that uses less fossil fuel, including electrical equipment whenever feasible.

It is expected that more electrical construction equipment would be used in the future, as it would generate fewer air pollutant emissions. Electricity consumption would be consistent with construction activities of a similar character; therefore, the use of electricity to power construction equipment would not be considered wasteful, inefficient, or unnecessary, especially since direct fossil fuel consumption would be reduced. Moreover, indirect consumption of fossil fuels for electricity would be reduced as electricity providers comply with the Renewables Portfolio Standard, thereby providing more electricity from renewable sources.

Gasoline and diesel fuels would be consumed by employee vehicles and maintenance vehicles and equipment as part of project operations. The fuel consumption would be consistent with the anticipated number of employees and maintenance work. Excessive fuel consumption is not anticipated, especially since a range of actions at the federal and State level are being taken to improve vehicle fuel economy (Congressional Research Service 2021). As noted in Section 3.3, Air Quality, backup generators that may run on diesel fuel may be used, but only during power outages. Therefore, only infrequent fuel consumption by generators is anticipated.

Overall, project construction and operations would not consume energy resources in a manner considered wasteful, inefficient, or unnecessary. Project impacts related to energy consumption are considered less than significant.

b) Consistency with Energy Plans.

The CSD has no renewable energy or energy efficiency plans. As such, the project would have no impact related to consistency with energy plans.

3.7 GEOLOGY AND SOILS

Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 strata 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, 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 where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		

NARRATIVE DISCUSSION

Environmental Setting

The Master Plan area is in the Central Valley, which is a topographically flat, northwest-trending trough about 50 miles wide and 450 miles long. The Geologic Map of the Sacramento Quadrangle (Wagner et al. 1981) indicates the underlying geology of the Master Plan area as a combination of the Modesto and Riverbank Formations. The Modesto Formation, ranging in depth from 10 to 200 feet, consists primarily of sand, silt, and clay

seams deposited by rivers. The Riverbank Formation, ranging in depth from one to more than 200 feet, consists of weathered gravel, sand, and silt (DWR 2014).

The Master Plan area consists of a variety of soils. A custom soil survey identified the following soil types: Acampo sandy loam, Bruella sandy loam, Exeter sandy loam, Hicksville loam, Jahant loam, Kingdon fine sandy loam, San Joaquin loam, Tokay fine sandy loam, and Vina fine sandy loam (NRCS 2022). These soils are variable in their characteristics but are generally loamy, productive, even prime with irrigation, deep, well-drained and without restrictive layers, although dense layers and durapans are present in some mapping units.

There are several faults and potential fault traces located within San Joaquin County, concentrated along its eastern and western margins. No active or potentially active faults have been identified in the Master Plan area – the nearest active fault is the Foothills Fault Zone in the Sierra Nevada foothills east of San Joaquin County. However, the County is in a region that lies between two areas of seismic activity – the Foothills Fault Zone and the San Andreas Fault System of the greater San Francisco Bay Area to the west. Active faults associated with the San Andreas Fault System include the Concord, Calaveras, Hayward, and San Andreas Faults, all of which can cause ground shaking that could potentially be felt within the County (San Joaquin County 2016a).

Paleontological resources are fossils or groups of fossils that are unique, unusual, rare, uncommon, or important, and that add to an existing body of knowledge in specific areas. A record search of the Museum of Paleontology at the University of California in Berkeley indicated that 97 paleontological finds have been made in the County (UCMP 2020). Most County specimens have been found in rock formations in the foothills of the Diablo Mountain Range. However, remains of extinct animals, such as mammoth, could be found virtually anywhere in the County, especially along watercourses such as the San Joaquin River and its tributaries (San Joaquin County 2016a).

Environmental Impacts and Mitigation Measures

a-i) Fault Rupture Hazards.

There are no known faults within or near the Master Plan area. It is not within an Alquist-Priolo Special Studies Zone, nor is it on a seismic hazard zone map prepared under the Seismic Hazards Mapping Act (California Geological Survey 2022). The project would have no impact related to fault rupture hazards.

a-ii) Seismic Ground Shaking.

As noted, the Master Plan area may be subject to ground shaking from earthquakes occurring outside the County. The proposed improvements would be required to comply with applicable provisions of the California Building Code adopted at the time of their construction. The 2019 California Building Code is the current version adopted by the County; however, the 2022 version would take effect in 2023 upon the expected adoption by the California Building Standards Commission. The California Building Code includes

seismic safety provisions that would minimize ground shaking impacts. Project impacts related to ground shaking would be less than significant.

a-iii) Other Seismic Hazards.

A great deal of soil compaction and settlement can result from seismic ground shaking. If the sediments which compact during an earthquake are saturated, water from voids is forced to the ground surface, where it can emerge in the form of mud spouts or sand boils – a phenomenon known as liquefaction. Soils experiencing liquefaction lose their supporting capacity, with the result that structures may settle into the ground. Based on known information, the Delta and other areas of the County with groundwater less than 50 feet from ground surface in unconsolidated sediment are susceptible to liquefaction (San Joaquin County 2016a). According to the most recent available groundwater report, the groundwater level in the Master Plan area is greater than 100 feet below ground surface (San Joaquin County Flood Control District 2019). The groundwater level is considered too deep for liquefaction to be an issue.

Lurching is defined as sudden lateral ground movement toward steep, unsupported embankments during seismic shaking. Due to the general low-lying topography, the risk of lurching in San Joaquin County is low except near dam structures or levees (San Joaquin County 2016a). The Master Plan area is not near any dam structures or levees.

As noted, the proposed improvements would comply with the seismic requirements of the California Building Code in effect at the time of construction, which would reduce potential seismic impacts. Project impacts related to other seismic hazards would be less than significant.

a-iv) Landslides.

The Master Plan area is relatively flat. There are no slopes that could be subject to landslides on or near the Master Plan area. The project would have no impact related to landslide risk.

b) Soil Erosion.

Construction activities associated with many of the proposed improvements would disturb soils, making them more susceptible to water erosion. Projects that disturb one acre of ground or more are required to obtain a Construction General Permit from the SWRCB. Conditions of the Construction General Permit would require preparation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer; the SWPPP would include implementation of Best Management Practices to avoid or minimize adverse water quality impacts from erosion and sedimentation. Best Management Practices fall within the categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control.

It is anticipated that many of the improvements proposed in the Master Plan would require a Construction General Permit. Implementation of the conditions of this permit would reduce project impacts related to soil erosion to a level that would be less than significant.

c) Unstable Soils.

The proposed improvements identified in the Master Plan would be constructed on essentially flat land. There are no known concerns with soil stability in the Master Plan area other than expansive soils, the potential for which is discussed in d) below.

Subsidence occurs when a large land area settles due to over saturation or extensive withdrawal of groundwater, oil, natural gas, or by hydrocompaction or oxidation of peat. Within San Joaquin County, subsidence is usually the result of pumping groundwater or oxidation of peat in the Delta (San Joaquin County 2016a). The Master Plan area is not within the Delta, but it is within the Eastern San Joaquin Groundwater Subbasin, which is in an overdraft condition (see Section 3.10, Hydrology and Water Quality). Land subsidence has not historically been an area of concern in the Subbasin, and there are no records of land subsidence caused by groundwater pumping in the Subbasin (ESJGA 2019).

As noted, proposed improvements would comply with the California Building Code, which addresses potential seismic and other geotechnical issues. Project impacts related to unstable soils would be less than significant.

d) Expansive Soils.

Certain soil types expand or shrink based on the moisture content of the soil. Soils rich in clay are usually more susceptible to expansion or shrinking. Expansive soils can cause significant damage to structures and foundations.

As noted, several soil types have been identified in the Master Plan area. Of these soil types, the following were rated as having at least a moderate expansive potential: Bruella sandy loam, Exeter sandy loam, Hicksville loam, Jahant loam, and San Joaquin loam. The latter two soils were rated as having a High expansive potential (SCS 1992). Improvements installed in these five soil types, especially the latter two, could be subject to potential damage from expansive soils. Mitigation described would require an evaluation of expansive soil potential and recommendations for reducing potential damage. Implementation of this mitigation measure would reduce impacts related to expansive soils to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

GEO-1: For improvement projects in areas having soils with a Moderate to High expansive soil potential, as identified in the *Soil Survey of San Joaquin County* by the U.S. Department of Agriculture, Natural Resources Conservation Service, a geotechnical report shall be prepared by a qualified soil or geotechnical engineer prior to final design approval of the improvement. The report shall evaluate the expansive soil potential of the proposed improvement site and the potential for damage to the improvement. The geotechnical report, if necessary, shall include recommendations to avoid or minimize effects of expansive soils on the

improvement. The recommendations shall be incorporated within the final design of the improvement.

Significance After Mitigation: Less than significant

e) Adequacy of Soils for Wastewater Disposal.

The project is a Master Plan for improvements to the CSD's wastewater system. It would not involve the use of any septic tanks or alternate wastewater disposal systems. Therefore, the adequacy of soils for wastewater disposal from such systems is not relevant to this analysis. The project would have no impact on this issue.

f) Paleontological Resources and Unique Geologic Features.

As noted, paleontological resources are more likely to be found in other parts of San Joaquin County than in the Master Plan area. However, the Master Plan area is underlain by a geological unit consisting in part of the Modesto Formation, which has in the past been associated with discovery of paleontological resources. It is conceivable that ground disturbance associated with the project could unearth paleontological materials of significance. The establishment of procedures to address the occurrence of paleontological discoveries would reduce any potential impacts to a level that would be less than significant. These procedures are set forth in the mitigation measure presented below. Implementation of this mitigation measure would ensure that impacts on uncovered paleontological resources would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

GEO-2: If any paleontological resources are encountered during project construction, all activities shall be halted within 100 feet of the discovery until a qualified paleontologist can examine these materials, determine their significance and, if significant, recommend mitigation measures that would reduce potential effects to a level that is less than significant. Such measures could include 1) preservation in place or 2) excavation, recovery, and curation by qualified professionals. The Lockeford Community Services District shall be notified of all discoveries and shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in a written report, consistent with the requirements of the CEQA Guidelines.

Significance After Mitigation: Less than significant

3.8 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

NARRATIVE DISCUSSION

Environmental Setting

Background

Greenhouse gases (GHGs) are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. GHGs are both naturally occurring and are emitted by human activity. Increased atmospheric concentrations of GHGs are considered a primary contributor to global climate change, which is a subject of concern for the State of California. Potential climate change impacts occurring in the San Joaquin Valley include more intense and frequent heat waves, higher frequency of catastrophic floods, more intense and frequent drought, and more severe and frequent wildfires (Westerling et al. 2018).

GHG emissions in California in 2019, the most recent year for which data are available, were estimated at approximately 418.2 million metric tons carbon dioxide equivalent (CO_2e) – a decrease of approximately 14.6% from the peak level in 2004. Transportation was the largest contributor to GHG emissions in California, with almost 40% of total emissions. Other significant sources include industrial activities, with approximately 21% of total emissions, and electric power generation, both in-state and imported, with approximately 14% of total emissions (ARB 2021).

Unlike the criteria air pollutants described in Section 3.3, Air Quality, GHGs have no "attainment" standards established by the federal or State government. In fact, GHGs are not generally thought of as traditional air pollutants, because their impacts are global in nature, while air pollutants mainly affect the general region of their release to the atmosphere. Nevertheless, the EPA has found that GHG emissions endanger both the public health and public welfare under Section 202(a) of the Clean Air Act due to their impacts associated with climate change (EPA 2009).

Regulatory Framework

The State of California has implemented GHG emission reduction strategies through Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, which requires total statewide GHG emissions to reach 1990 levels by 2020, or an approximately 29% reduction from 2004 levels. As noted above, total state GHG emissions in 2019 were approximately 418.2 million metric tons CO_2e, which were almost 13 million metric tons CO_2e below the 2020 target established by AB 32 (ARB 2021).

In 2016, SB 32 was enacted. SB 32 extends the GHG reduction objectives of AB 32 by mandating statewide reductions in GHG emissions to levels 40% below 1990 levels by the year 2030. The State adopted an updated Scoping Plan in 2017 that sets forth strategies for achieving the SB 32 target. The updated Scoping Plan continues many of the programs that were part of the previous Scoping Plans, including the cap-and-trade program, low-carbon fuel standards, renewable energy, and methane reduction strategies. It also addresses for the first time GHG emissions from the natural and working lands of California, including the agriculture and forestry sectors (ARB 2017). The Scoping Plan is currently in the process of being updated. The CSD does not have any adopted GHG reduction plans or standards.

Environmental Impacts and Mitigation Measures

a, b) Project GHG Emissions and Consistency with GHG Reduction Plans.

Neither the SJVAPCD nor the CSD has established quantitative significance thresholds for GHG emissions. However, nearby air districts such as the Bay Area Air Quality Management District and the Sacramento Metropolitan Air Quality Management District have established a quantitative threshold of 1,100 metric tons CO_2e to determine significance of project GHG emissions for CEQA purposes (BAAQMD 2017, SMAQMD 2021). This threshold applies to both construction and operational emissions. CEQA Guidelines Section 15064.7 allows for the use of significance thresholds established by other agencies. For this analysis, the threshold of 1,100 metric tons CO_2e will be used to determine the significance of impacts.

Given the character of the proposed improvements in the Master Plan, their operational GHG emissions are expected to be minimal, limited mainly to indirect emissions related to energy consumption. It is expected that improvement projects proposed in the Master Plan would not generate GHG operational emissions that exceed the 1,100-metric ton threshold. Therefore, they would be consistent with the reduction goals of SB 32 and SJVAPCD. As noted in Section 3.5, Energy, California has a Renewables Portfolio Standard and other legislation that intends to reduce and eventually eliminate the use of electricity generated by fossil fuels. Therefore, indirect GHG emissions from electricity would likewise be reduced.

GHG emissions would be associated mainly with construction of the proposed improvements, with emissions being generated by construction equipment and worker vehicles. Construction emissions would be temporary and would cease once work is completed. Moreover, as discussed in Section 3.3, Air Quality, Mitigation Measure AQ-1

would encourage the use of equipment that uses electricity or alternate fuels, which is expected to reduce generation of GHG emissions.

It is possible that larger improvements or a multi-improvement project could generate construction emissions that exceed the 1,100-metric ton threshold. To assess this possibility, construction GHG emissions associated with the longest sewer main improvement were estimated using the RCEM (see Section 3.3, Air Quality). Appendix A of this IS/MND contains the results of the RCEM run. Based on a six-month construction period, construction GHG emissions for the 6,200-foot main project were estimated at slightly more than 105 metric tons CO_2e, which is well below the 1,100-metric ton threshold. Because of this, it can be reasonably assumed that all proposed sewer main projects proposed by the Master Plan would not have a significant impact related to GHG construction emissions.

Construction of other improvements could generate GHG emissions that exceed the 1,100-metric ton threshold. To assess this possibility, construction emissions associated with the largest pond improvement were estimated using CalEEMod (see Section 3.3, Air Quality). Appendix A contains the results of the CalEEMod run. Based on a six-month construction period, construction GHG emissions for the Phase 3a pond project, the proposed project that would be anticipated to have the maximum impact, were estimated at approximately 859 metric tons CO_2e, which is below the 1,100-metric ton threshold. Because of this, it can be reasonably assumed that all non-linear improvement projects proposed by the Master Plan would not have a significant impact related to construction GHG emissions.

In summary, none of the improvements proposed in the Master Plan are expected to generate GHG emissions, either during construction or operation, that would exceed the significance threshold. Because of this, none of the proposed improvements would generate GHG emissions that would interfere with achieving the objectives of applicable GHG reduction plans. Therefore, project impacts related to GHG emissions and consistency with GHG emission reduction plans would be less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
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?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		✓		
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?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?		✓		
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				✓

NARRATIVE DISCUSSION

Environmental Setting

The State of California maintains two hazardous material site databases: the EnviroStor database, maintained by the Department of Toxic Substances Control (DTSC); and the GeoTracker database, maintained by the SWRCB. A summary of the results of the database searches is provided later in this section. A list of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit did not show any locations in San Joaquin County (CalEPA 2021a).

Likewise, a list by SWRCB containing sites under Cease and Desist Orders and Cleanup and Abatement Orders showed no locations in the Master Plan area (CalEPA 2021b).

The Unified Hazardous Waste and Hazardous Management Regulatory Program, enacted in 1993, is a state and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. The Unified Program is implemented at the local level by a Certified Unified Program Agency (CUPA). The San Joaquin County Environmental Health Department was approved by the State as the CUPA for the County and its incorporated cities.

Among other responsibilities, the CUPA provides the management and record keeping of hazardous materials through the Hazardous Materials Program, which inspects businesses for compliance with the State's Hazardous Waste Control Law and issues hazardous materials/waste permits to businesses that handle quantities greater than or equal to 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a compressed gas at any given time. Businesses issued these permits are required to submit a Hazardous Materials Business Plan, which includes an inventory of hazardous materials and wastes and an emergency response plan for hazardous material incidents. The CSD has submitted a Hazardous Materials Business Plan for the WWTP, and the County has inspected the facility to ensure compliance with the plan.

Environmental Impacts and Mitigation Measures

a) Hazardous Materials Transportation, Use and Disposal.

CSD wastewater system operations do not require the use or storage of hazardous materials, other than chlorine for treatment at the WWTP and diesel fuel for its backup generators. As the wastewater system expands and more wastewater is sent to the WWTP for treatment, it is expected that use of chlorine would increase. However, chlorine use would be confined to the WWTP. The transportation, use, and storage of chlorine and diesel fuel would comply with applicable local, State, and federal hazardous material regulations. In addition, the CSD has submitted a Hazardous Material Business Plan to the CUPA that sets procedures to handle hazardous material incidents. Project impacts related to hazardous materials transportation, use and disposal would be less than significant.

b) Release of Hazardous Materials by Upset or Accident.

Construction activities under the Master Plan may involve the use of hazardous materials such as fuels and solvents, which would create a potential for hazardous material spills at construction sites. Construction and maintenance vehicles would transport and use fuels in ordinary quantities. Fuel spills, if any occur, would be minimal and would not have significant adverse effects in the area. Contractors typically have absorbent materials at construction sites to clean up minor spills. Other substances used in the construction process would be stored in approved containers and used in relatively small quantities, in accordance with the manufacturers' recommendations and/or applicable regulations.

As discussed in a) above, wastewater system operations that would transport, use, or store hazardous materials would be required to do so in compliance with applicable local, State,

and federal regulations. These regulations are designed to ensure that these materials are properly stored and transported, thereby reducing the likelihood of accidental release. In addition, the CSD has a Hazardous Material Business Plan that sets procedures to handle hazardous material incidents. Compliance with these regulations and procedures in the Hazardous Material Business Plan would reduce project impacts related to potential release of hazardous materials to a level that would be less than significant.

c) Release of Hazardous Materials near Schools.

As noted in a) above, the one wastewater system facility that would use hazardous materials is the WWTP. The nearest school to the WWTP is Lockeford Elementary School, more than one mile to the north. It is unlikely that any potential releases of hazardous materials at the WWTP would extend beyond its property boundaries, much less reach the school site. The project would have no impact related to hazardous material releases near schools.

d) Hazardous Materials Sites.

The EnviroStor and GeoTracker databases were searched for possible hazardous material sites that could affect the proposed improvements in the Master Plan. Altogether, 12 sites were identified (DTSC 2022, SWRCB 2022). Two sites at Lockeford Elementary School are under investigation for possible contamination, and the Lockeford Vista/Luchessi Properties site is under a voluntary project clean-up. All three properties are located approximately one-quarter mile north of any improvements proposed for installation. Eight leaking underground storage tank sites were recorded in the Master Plan area. All eight sites have been cleaned up, and the investigations are now closed.

Delta Lift Truck and Equipment, located along SR 88 on 12811 Brandt Road, is under investigation by DTSC for a possible surface oil spill. A Site Screening Assessment prepared by the DTSC concluded that releases of hazardous materials have occurred on the site in the past, but the site does not pose an immediate environmental threat (DTSC 2022). Improvements Nos. 12 and 14, as identified in Table 3-4 of the proposed Wastewater Master Plan (and in Table 2-1 of this IS/MND) are proposed along Brandt Road adjacent to the Delta Lift site. It is possible that soil contamination could be encountered during installation of these facilities near the site. Mitigation described below would require a site assessment prior to the start of work on these two improvements, with remediation of the construction site if contamination is found. Implementation of this mitigation measure would reduce potential impacts to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

HAZ-1: Prior to the start of construction activities for Improvement Nos. 12 and 14, as identified in Table 3-4 of the Wastewater Master Plan, a Phase I Environmental Site Assessment shall be conducted by a registered Environmental Professional to determine the potential presence of any soil contamination within the proposed construction area. If such a presence is determined, then a Phase II Environmental Site Assessment shall be conducted by a registered Environmental Professional to

determine the extent of the soil contamination and to recommend remediation actions if necessary. Any recommended remediation shall be implemented prior to the start of construction activities for Improvement Nos. 12 and 14.

HAZ-2: In the event that evidence of unusual odors or soil discoloration is noted during construction, constructed shall be halted and the LCSD Project Engineer notified. The Engineer shall evaluate the situation, retain a qualified environmental professional if required, and take action as required by applicable regulations.

Significance After Mitigation: Less than significant

e) Airport Operations.

The project proposes improvements to a wastewater system. These improvements would only attract CSD maintenance workers on occasion. There are no public or public-use airports within two miles of the Master Plan area. The nearest public airport is Lodi Airport, approximately 6.7 miles northwest of Lockeford. Given this distance, Master Plan improvements would not expose CSD maintenance workers to potential safety hazards from Lodi Airport operations. The project would have no impact related to airport hazards.

f) Emergency Response and Evacuation.

Some of the improvements proposed under the Master Plan would be installed along roadways, such as Brandt Road and Tully Road. Improvements may also occur along SR 12/88, which is a State Route. Improvement work along roadways would occur mainly within existing road rights-of-way; however, some work may occur within the roadway section itself. This could hinder responses by emergency vehicles and evacuations that may occur.

Depending on the road, construction work would require an encroachment permit from the County Department of Public Works or Caltrans. An encroachment permit typically sets conditions on construction work to minimize its impact on roads and traffic. Construction work would be temporary and would cease once work is completed. Nevertheless, such work has the potential to restrict or obstruct roadways such that it would interfere with emergency responses or emergency evacuations. Mitigation presented below would ensure that vehicle access would be maintained during construction activities along roadways, thereby reducing impacts to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

HAZ-3: Prior to the start of improvement construction that occurs within or adjacent to a roadway, a Traffic Control Plan shall be prepared and implemented, The Traffic Control Plan shall include such items as traffic control requirements, resident notification of access closure, and daily access restoration. The plan shall specify dates and times of road

closures or restrictions, if any, and shall ensure that adequate access will be provided for emergency vehicles. The Traffic Control Plan shall be coordinated with the San Joaquin County Sheriff's Department, Mokelumne Rural Fire District and the California Department of Transportation as determined by the Project Engineer.

Significance After Mitigation: Less than significant

g) Wildland Fire Hazards.

The proposed improvements are in areas of mixed urban development and agricultural land. They are not located adjacent to any significant natural open spaces where wildland fires may occur. Agricultural land, due to its cultivated character and typical irrigation, does not involve an accumulation of fuel or otherwise create a significant fire hazard. The project would not involve any substantial changes to fuel conditions or introduce new ignition sources except during construction; construction equipment must be fitted with approved spark arrestors.

Because of this, the project would have no impact related to wildland fire hazards. Refer to Section 3.20, Wildfire, for more detailed information on wildfire hazards.

3.10 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			✓	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			✓	
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 which would:				
i) Result in substantial erosion or siltation on- or off-site?			✓	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
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?				
iv) Impede or redirect flood flows?		✓		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			✓	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

NARRATIVE DISCUSSION

Environmental Setting

Surface Water Hydrology

The southern portion of the Master Plan area is traversed by Bear Creek. Bear Creek, an intermittent stream, originates in the Sierra Nevada foothills and flows in a generally southwest direction to Stockton, where it discharges into sloughs that eventually discharge into the San Joaquin River. Slightly more than three-quarters mile north of Lockeford is the Mokelumne River. The Mokelumne River, with surface flows year-round, flows westward from its headwaters in the Sierra Nevada to the eastern edge of the Delta, where it meets the Cosumnes River. Snowmelt comprises a large portion of the Mokelumne River watershed's runoff (San Joaquin County 2016a). The Mokelumne River is subject to storage and release standards at upstream reservoirs including Camanche Lake.

Groundwater Hydrology

As discussed in Section 3.19, Utilities and Service Systems, groundwater is the only source of water in the Master Plan area. The Master Plan area overlies the Eastern San Joaquin Subbasin of the San Joaquin Valley Groundwater Basin. Groundwater levels may fluctuate over time depending on precipitation, aquifer recharge, and pumping demands. As noted in Section 3.7, Geology and Soils, the groundwater level in the Master Plan area is greater than 100 feet below ground surface (San Joaquin County Flood Control District 2019).

As noted in Chapter 1.0, Introduction, the Eastern San Joaquin Subbasin is critically overdrafted, meaning significantly more groundwater has been withdrawn from the Subbasin than has been replenished. This has led to significant groundwater level depressions south of the Master Plan area. The CSD currently withdraws approximately 400 acre-feet of groundwater per year from the Subbasin.

In 2014, the California Legislature passed the Sustainable Groundwater Management Act, the purpose of which is to give local agencies greater authority to manage groundwater supplies. The legislation requires the formation of local groundwater sustainability agencies that must assess conditions in their local water basins and adopt locally based

management plans known as Groundwater Sustainability Plans. Plans for critically overdrafted basins must be adopted by January 31, 2020.

The Eastern San Joaquin Groundwater Authority, which oversees the Eastern San Joaquin Subbasin, submitted a Groundwater Sustainability Plan for the Subbasin to the California Department of Water Resources on January 29, 2020. Achieving sustainability in the Subbasin requires implementation of projects and management actions, including water supply projects that either replace groundwater use or supplement groundwater supplies to attain the current estimated pumping offset and/or recharge need. A list of 23 potential projects. representing a variety of project types, is included in the Subbasin's Groundwater Sustainability Plan. These include direct and in-lieu recharge, intrabasin water transfers, demand conservation, water recycling, and stormwater reuse (ESJGA 2019).

Flooding

The Federal Emergency Management Agency (FEMA) prepares maps that delineate areas subject to potential flooding. FEMA floodplain maps indicate that most of the Master Plan area is outside an identified floodplain. The only area within a floodplain is the area immediately adjacent to Bear Creek, which has been identified as a Special Flood Hazard Area. The Special Flood Hazard Area is the 100-year floodplain, which is the area of occurrence of a flood that is expected once every 100 years on average. It is the area of concern for FEMA's National Flood Insurance Program.

In 2007, the State of California approved SB 5 and a series of related Senate and Assembly bills known as "the SB 5 bills." The SB 5 bills define the State standard for flood protection in urban and urbanizing areas in the Central Valley as protection from the 200-year flood; they also establish requirements for implementing the 200-year standard such as changes to zoning ordinances. The Master Plan area is not within a 200-year floodplain; therefore, SB 5 requirements do not apply.

Water Quality

The Central Valley RWQCB has prepared a Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins. The Basin Plan identifies water quality standards that are based on identified beneficial uses and water quality objectives based on those uses. Beneficial uses listed for surface water bodies in the vicinity of the Master Plan area include municipal and domestic supply, agriculture supply, and industrial process and service supply, among others (RWQCB 2018a). In 2018, the Central Valley RWQCB adopted amendments to the Basin Plan that established a Central Valley-wide Salt and Nitrate Control Program, which would implement a plan for the control and permitting of salt discharges to surface and groundwater and of nitrate discharges to groundwater (RWQCB 2018b).

The Lockeford CSD wastewater system operates under WDR Order No. R5-2007-0179, issued by the Central Valley RWQCB. The WDR sets limitations on the effluent discharged from the WWTP treatment pond. These include a monthly average of no greater than 40 mg/L of biochemical oxygen demand, 10 mg/L of total nitrogen, and 550 mg/L of total dissolved solids. Additionally, as noted in Section 3.3, Air Quality, the treatment

ponds are required to maintain a dissolved oxygen concentration of at least 1.0 mg/L in the upper one foot of the ponds to minimize odors. Treated effluent is not discharged into a stream or other water body; rather, it is used to irrigate a pasture in Reclamation Area 1.

Environmental Impacts and Mitigation Measures

a) Violation of Water Quality Standards.

As noted, the CSD's wastewater system is required to comply with the conditions of WDR Order No. R5-2007-0179. Implementation of Master Plan improvements would not alter this WDR; in fact, the improvements are intended to ensure that the wastewater system would continue to comply with the WDR even with anticipated additional wastewater generation. As noted, the wastewater system does not discharge effluent into any water bodies, and this condition would not change with implementation of the Master Plan. Project impacts on water quality would be less than significant.

b) Groundwater Supplies and Recharge.

The Master Plan proposes improvements to a wastewater collection and treatment system. The wastewater system does not require water, including groundwater. The improvements would not lead to the installation of impervious surfaces that would substantially reduce groundwater recharge. In fact, the Master Plan proposes the use of Reclamation Area 2 and the Historic WWTP site as potential discharge sites, which have the potential to increase the available groundwater recharge area.

Improvements under the Master Plan are intended to serve potential future development in the Lockeford area, which would lead to increased demand on CSD's groundwater supplies. A development project would be subject to a separate CEQA environmental review by the County, at which time the project's impacts on groundwater supplies would be analyzed and measures to mitigate its impacts on those supplies would be prescribed, if necessary. As the provider of potable water in the Master Plan area, the CSD is expected to be notified of any environmental review for a development project, thereby allowing the CSD to comment on any potential impacts to its water supplies and on pertinent requirements and regulations. Project impacts related to groundwater would be less than significant.

c-i, ii) Drainage Patterns.

Proposed improvements under the Master Plan would mostly occur in existing developed areas or within roadway rights-of-way. The only substantial alteration to land surfaces would occur at the Reclamation Area 2 and the Historic WWTP sites for the discharge of treated effluent to recharge facilities. No effluent would go outside these sites; therefore, their use would not cause off-site erosion or flooding. Project impacts on drainage patterns would be less than significant.

c-iii) Runoff.

While implementation of the Master Plan would lead to additional improvements, they would not result in additional impervious surfaces. Because of this, no additional runoff would be generated. The project would have no impact on runoff.

c-iv) Flood Flows.

As noted, most of the Master Plan area is not within a Special Flood Hazard Area. However, proposed pipeline improvements along Tully Road and Brandt Road would cross the Special Flood Hazard Area designated for Bear Creek. As described in Section 3.4, Biological Resources, Mitigation Measure BIO-3 would require these pipelines to be installed either beneath the creek bed through a jack-and-bore method or attached to a bridge crossing the creek. In either case, the pipelines would not be installed in a manner that would impede or redirect any flood flows that occur along Bear Creek. Most of the other proposed improvements would be either outside a designated floodplain or would be undergrounded or too small to affect flood flows. Project impacts on flood flows would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures: Implementation of Mitigation Measure BIO-3.

Significance After Mitigation: Less than significant

d) Release of Pollutants in Flood Zone.

As noted in c-iv) above, most of the Master Plan area is not within a Special Flood Hazard Area, other than a limited area along Bear Creek. It is also not within a SB 5 200-year flood hazard area. The only portion of the wastewater system that could release pollutants if inundated would be the WWTP. Chlorine stored for wastewater treatment and raw sewage would be among the pollutants that could be released due to flooding. However, the WWTP is not within a designated floodplain, so such a release to flood waters would be unlikely.

The Master Plan area is not near a large body of water nor on the coast, so it would not be subject to any seiche or tsunami hazards. Flooding may occur because of levee failure along the Mokelumne River. However, flood flows would have to overtop SR 88 to result in flooding in the Master Plan area; therefore, SR 88 would act as a barrier to flood flows in the Master Plan area (Lockeford CSD 2011). As the WWTP is both south of SR 88 and not in a designated floodplain, levee failure is not expected to lead to flooding that would lead to a release of pollutants from the WWTP.

California Government Code Section 65302(g) requires local governments to assess the potential impacts a dam failure might have on their jurisdiction. As part of preparation of the County General Plan, potential dam inundation areas were identified and delineated. The one dam that poses a direct threat to the Master Plan area if it fails is Camanche Dam (San Joaquin County 2016a). However, the potential for dam failure at any given time is considered low, and implementation of the Master Plan would not exacerbate existing risk.

In summary, the release of any pollutants in the Master Plan area due to flooding is unlikely. Project impacts related to this issue would be less than significant.

e) Conflict with Water Quality or Sustainable Groundwater Plans.

As noted, the project would be required to comply with WDR Order No. R5-2007-0179, which seeks to minimize wastewater system impacts on water quality in the area. The Master Plan would not conflict with known water quality objectives of the WDR or the Basin Plan.

As noted, the Eastern San Joaquin Subbasin was identified as critically overdrafted; therefore, a Groundwater Sustainability Plan for the Subbasin has been submitted as required under the Sustainable Groundwater Management Act. To implement this plan, the Eastern San Joaquin Groundwater Sustainability Agency proposes various projects and management actions. None of these projects or actions apply at an individual development project level; however, implementation of the Master Plan would not interfere with the implementation of these projects and management actions.

Moreover, the Master Plan proposes that additional treated wastewater be discharged into the Reclamation Areas or the Historic WWTP site, where it would be allowed to percolate into the ground. This would be consistent with the Master Plan objective of recharging local aquifers, which also would be consistent with the objectives of the Groundwater Sustainability Plan for the Subbasin. The project would have no impact related to conflict with water quality or groundwater sustainability plans.

3.11 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				✓
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?			✓	

NARRATIVE DISCUSSION

Environmental Setting

Lockeford is an unincorporated small community located 17 miles northeast of Stockton on SR 12/88. The community center encompasses about 100 acres along both sides of SR 12/88, extending five blocks from east to west and one block back from either side of the

highway. This area contains older single-family homes on small lots and many historic commercial and public buildings (San Joaquin County 2016a).

Development was contained within the town's original boundaries for many years, but it extended well beyond the central area in the 1980s. Residential growth has occurred to the south and southeast, while industrial growth has occurred to the southwest, primarily between Brandt Road and the railroad tracks. Commercial growth, historically focused on the community center, has shifted south along the SR 12/88 alignment. A community shopping center has been constructed a half-mile south at Jack Tone Road, and the grocery and pharmacy originally in downtown Lockeford have been relocated there (San Joaquin County 2016b).

The majority of the developed land in Lockeford is devoted to residential land use. Single-family homes are the predominant housing type, with some multifamily units. There are several mobile home parks in the community, including two large facilities in its southern area. Several residential subdivisions have given the town a more extended character (San Joaquin County 2016a).

Lockeford's commercial land serves the immediate needs of residents and surrounding agricultural areas and of motorists using SR 12/88. Commercial uses include antique stores and other establishments that have capitalized on the town center's historical architecture. Industrial uses comprise more than a quarter of the developed land. Most of the community's industries are related to agriculture. However, one of the main industries is a steel building manufacturer that produces structures for agricultural, industrial, commercial, and institutional uses (San Joaquin County 2016a).

The San Joaquin County General Plan, the current version of which was adopted in 2016, provides guidance for development in the unincorporated areas of the County, including the Master Plan area. Along with general land development goals and policies, the County General Plan provides more specific goals and policies for designated “urban communities” that include Lockeford. The Community Development Element of the General Plan contains a section with policies and implementing actions specific to Lockeford. These include a policy that encourages the CSD to add areas designated for industrial use into its service area, and a policy stating that the County shall require community water and sewer services to be provided to "infill" land inside the CSD before service is extended to property outside its current boundaries (San Joaquin County 2016b).

Environmental Impacts and Mitigation Measures

a) Division of Established Communities.

The Master Plan area encompasses the community of Lockeford, and the proposed Master Plan is intended to provide wastewater collection and treatment to existing and planned development in the community as a whole. None of the proposed improvements would physically divide either the existing Lockeford community or the community as it is anticipated to develop in the future. Most of the improvements would either be buried underground or confined to sites of very limited size. The project would have no impact related to the division of an established community.

b) Conflict with Applicable Plans, Policies and Regulations Avoiding or Mitigating Environmental Effects.

The Master Plan and proposed improvements would not conflict with the existing County General Plan designations in the Master Plan area. The project proposes no changes to the County General Plan or existing zoning, and none would be required to implement the Master Plan. The County General Plan anticipated future growth in the Lockeford area and the need for infrastructure in the following General Plan policies specifically for the Lockeford planning area:

- The County shall coordinate with the Lockeford Community Services District on all new development in the Lockeford area.
- The County shall encourage the Lockeford Community Services District to continue to operate and maintain community services in Lockeford.
- The County shall require that community water and sewer services be provided to "infill" land inside the Lockeford Community Services District before service is extended to property outside its current boundaries.
- The County shall encourage the Lockeford Community Services District to add areas designated for industrial use into its service area.

It is expected that implementation of the Master Plan would facilitate compliance with County General Plan policies of serving infill areas and the existing industrial areas within the CSD.

This IS/MND analyzes the range of potential environmental impacts of the Master Plan. For all environmental issues considered, the IS/MND has determined that the project would have no environmental impact, or an impact that would be less than significant, or an impact can be mitigated to a level that would be less than significant. As discussed in Section 3.10, Hydrology and Water Quality, the wastewater system would be required to comply with WDR Order No. R5-2007-0179, which is intended to minimize water quality impacts. Project impacts related to conflicts with applicable plans, policies, and regulations avoiding or mitigating environmental effects would be less than significant.

3.12 MINERAL RESOURCES

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

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?				✓

NARRATIVE DISCUSSION

Environmental Setting

As mandated by the Surface Mining and Reclamation Act, the California Geological Survey has classified mineral resource development potential of lands in counties into an appropriate Mineral Resource Zone (MRZ), in accordance with the California Mineral Land Classification System. The MRZ classifications include:

MRZ-1 - Areas of No Mineral Resource Significance

MRZ-2 - Areas of Identified Mineral Resource Significance

MRZ-3 - Areas of Undetermined Mineral Resource Significance

MRZ-4 - Areas of Unknown Mineral Resource Significance

There are two areas near Lockeford that are classified as MRZ-3. One is north of Lockeford along the Mokelumne River. The other appears to be south of Bear Creek (San Joaquin County 2016a). No other MRZs have been explicitly identified in the area.

San Joaquin County has active natural gas wells. Information from the Division of Oil, Gas, and Geothermal Resources indicates only three wells within or near the Master Plan area. All three recorded wells are listed as having been plugged (DOGGR 2022).

Environmental Impacts and Mitigation Measures

a, b) Loss of Mineral Resource Availability.

No active mineral resource operations have been identified within the Master Plan area. Improvement No. 4 on Table 2-1 of this IS/MND may pass through an area designated MRZ-3 south of Bear Creek. However, as described above, MRZ-3 indicates an area of undetermined mineral resource significance; no mineral deposits of value have been formally identified in this area. Moreover, Improvement No. 4 proposes a force main that would be constructed within the existing Tully Road right-of-way; the element of the project would not obstruct access to potential mineral resource areas located outside the existing road right-of-way. No other improvements would affect any MRZs in the area. The project would have no impact on availability of mineral resources.

3.13 NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b) Generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

NARRATIVE DISCUSSION

Environmental Setting

Assessment of noise impacts focuses on the "ambient" noise level, which is the general noise level of a project area. In the Master Plan area, the main source of noise is vehicle traffic on major transportation routes such as SR 12/88, Elliott Road, Tully Road, and Jack Tone Road. Other noise sources include industrial operations southwest of Lockeford and agricultural operations in the rural areas.

San Joaquin County Code Section 9-1025.9 establishes standards for maximum allowable exposure of noise-sensitive land uses to noise from stationary sources. "Noise-sensitive land uses," as defined by the County in Table 9-1025.9, include residential development, educational services, religious assemblies, lodging, libraries, medical services, and professional services, among others. Table 3-3 shows the maximum allowable noise exposure, as determined at outdoor activity areas or at the property line of the receiving land use. Proposed projects that will create new stationary noise sources or expand existing stationary noise sources are required to mitigate the noise levels from these stationary noise sources so as not to exceed the noise level standards specified in Table 3-3. The noise level standards are in terms of the equivalent sound level (L_{eq}), which corresponds to a steady-state sound level containing the same total energy as a time-varying signal over a given time, usually one hour.

TABLE 3-3
MAXIMUM ALLOWABLE NOISE EXPOSURE –
STATIONARY NOISE SOURCES

Noise Level Descriptor	Outdoor Activity Areas Daytime (7 a.m. - 10 p.m.)	Outdoor Activity Areas Nighttime (10 p.m. - 7 a.m.)
Hourly Equivalent sound level (L_{eq}), dB	50	45
Maximum sound level, dB	70	65

Source: San Joaquin County Code, Table 9-1025.9.

Environmental Impacts and Mitigation Measures

a) Increase in Ambient Noise Levels.

Improvement Operations

The Master Plan proposes improvements to the CSD's wastewater system. Most of these improvements would not generate noise that would disturb sensitive land uses. The proposed pipeline improvements would be buried underground, so no noise would come from pipeline use. The WWTP improvements would be on the existing WWTP property, which has no noise-sensitive land uses in its vicinity. The proposed uses of the Reclamation Areas or the Historic WWTP site would involve discharges of treated water in a predominantly rural area, which would not generate noise at a level that would disturb any noise-sensitive land uses in the vicinity.

The proposed pump station improvements may lead to additional noise being generated. The Locke Road pump station is proposed for expansion with the addition of a second wet well, while a new pump station is proposed along North Tully Road to replace the existing Bear Creek station. In addition, a future pump station is proposed along West Brandt Road upon development of the area along Brandt Road and Locke Road west of SR 12/88. Operation of pumps at all three stations could generate noise that may disturb nearby noise-sensitive land uses.

The West Brandt Road station would be constructed in an area of adjacent industrial and agricultural land uses, neither of which are sensitive to noise. The area around the Locke Road station is designated for commercial and office land uses, which likewise are not sensitive to noise, and some residential uses located on the west side of Locke Road. The North Tully Road station would be constructed in an area of existing and approved residential development, which is considered potentially noise-sensitive. However, this pump station would be mostly underground, including the pumps that would generate noise with their operations, and the pumps would be encased in a concrete structure. Therefore, nearby residences are unlikely to be exposed to noise from pump station operations at levels that would exceed County standards.

Improvement Construction

Construction activities associated with proposed Master Plan improvements may generate a temporary increase in noise levels in the immediate vicinity of the construction site. Noise

would be generated mainly by excavation and construction equipment, with more limited noise from employee vehicle traffic. Use of any construction equipment would be short-term and intermittent during the construction day. Construction noise would cease once work is completed. In addition, County Code Section 9-1025.9(c) states that noise sources exempt from the County noise standards include those associated with construction, provided such activities do not take place before 6:00 a.m. and after 9:00 p.m. on any day. Also exempt are noise sources associated with work performed by private or public utilities in the maintenance or modification of their facilities. Nevertheless, the CSD would implement mitigation measures described below to ensure that noise-sensitive land uses, particularly residences, are not exposed to excessive noise levels.

In summary, noise generated by most project operations after implementation of the Master Plan would not likely exceed applicable noise standards. Project construction noise could temporarily exceed standards, but mitigation would reduce impacts to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

NOISE-1: The following measures shall be implemented during construction of any improvements near a noise-sensitive land use, as listed in Table 9-1025.9, Part I of the San Joaquin County Code:

- Construction work shall be restricted to the hours of 6:00 a.m. to 7:00 p.m. Monday through Friday and to 7:00 a.m. to 6:00 p.m. on Saturday. No construction work shall occur during a Sunday or a federally recognized holiday.

- The contractor shall ensure that all construction equipment used on the construction site is properly muffled at all times, with mufflers installed in accordance with manufacturers' specifications.

- Idling of construction equipment and trucks shall be limited to no longer than five minutes, in accordance with State regulations (see also Mitigation Measure AQ-1 in Section, 3.3, Air Quality).

Significance After Mitigation: Less than significant

b) Groundborne Vibration.

Groundborne vibration is not a common environmental problem. Some common sources are trains, buses on rough roads, and construction activities such as blasting, pile driving, and operating heavy earth-moving equipment. Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. The project would likely use common excavation and trenching equipment during construction; the project would involve no known blasting, pile-driving, or other significant noise-

generating equipment. Given the short-term duration of construction work, project impacts related to groundborne vibrations are considered less than significant.

c) Exposure to Airport/Airstrip Noise.

As noted in Section 3.9, Hazards and Hazardous Materials, the improvements proposed in the Master Plan would only attract CSD maintenance workers on occasion. There are no public airports within two miles of the Master Plan area; the nearest public airport is approximately 6.7 miles northwest of Lockeford. No private airstrips have been identified in the vicinity. Therefore, CSD maintenance workers would rarely, if ever, be exposed to noise from airport or airstrip operations. The project would have no impact related to airport or airstrip noise.

3.14 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			✓	
b,c) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

NARRATIVE DISCUSSION

Environmental Setting

As of January 1, 2021, the population of unincorporated San Joaquin County was estimated at 155,691 – an increase from the 2010 U.S. Census population of 141,995. As noted in Chapter 1.0, Introduction, the estimated 2020 population of the community of Lockeford was 3,016. Total housing units in unincorporated San Joaquin County were 52,405, approximately 82.7% of which were single-family detached units (California Department of Finance 2021). The number of housing units in the Lockeford Census Designated Place, which includes the Master Plan area and other areas, was 1,237 (U.S. Census Bureau 2022).

Environmental Impacts and Mitigation Measures

a) Population Growth Inducement.

The Master Plan has been prepared to provide an updated facilities plan for improvements to the CSD's wastewater system to serve potential new development. This includes the Kautz property annexed in 2016, along with the previously approved Lockeford Vista and

the historically considered Lockeford Oaks. The Master Plan is also based on potential infill development within the existing CSD service area outside these proposed developments and within the CSD SOI. The infill of the remaining CSD service area is projected based on current zoning. Because of this, improvements under the Master Plan are not expected to induce any population growth not otherwise planned for by the CSD and the County. Project impacts related to unplanned population growth are considered less than significant.

b) Displacement of Housing and People.

As has been noted, development of improvements would occur within existing road rights-of-way, on properties with existing facilities, or on vacant land such as the Reclamation Area 2 and Historic WWTP sites. The purpose of the project is to facilitate continuing utility services to existing and planned home and people. None of the proposed improvements would lead to the displacement of any housing or of residents within them. The project would have no impact related to displacement.

3.15 PUBLIC SERVICES

a) 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 other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Fire protection?				✓
ii) Police protection?				✓
iii) Schools?				✓
iv) Parks?				✓
v) Other public facilities?				✓

NARRATIVE DISCUSSION

Environmental Setting

The Master Plan area is within the Mokelumne Rural Fire District. The Fire District covers an area of approximately 34 square miles east of the City of Lodi and includes the community of Lockeford. It operates out of a station on 13157 East Brandt Road south of Lockeford. As of 2016, the Fire District had nine paid personnel, 15 emergency medical technicians, and one administrative staff member. Average response time to a call is five minutes (San Joaquin County 2016a). The Fire District is part of the North County Fire

automatic aid agreement, along with the Linden-Peters and Waterloo-Morada Fire Districts. In the event a more complex incident should occur, the nearest bordering agency to the incident would be automatically dispatched to provide additional support.

Police protection services in unincorporated San Joaquin County are provided by the San Joaquin County Sheriff's Department, with its station in the community of French Camp. The Sheriff's Department has more than 800 sworn and support personnel working in eight divisions, including the Field Forces Division that provides patrols. The Master Plan area is within Beat 2 of the Sheriff's Department patrol service area (San Joaquin County 2016a).

The Master Plan area is within the Lodi Unified School District. The one public school in the Master Plan area is Lockeford Elementary School, which provides instruction to students from kindergarten to 8th grade. High school students attend Lodi High School in Lodi. Parks in the Master Plan area are managed by the CSD. The CSD, working with San Joaquin County, is developing Lockeford Memorial Park. Section 3.16, Recreation, provides more information on parks and recreational facilities. There are no other public service facilities in the Master Plan area.

Environmental Impacts and Mitigation Measures

a-i) Fire Protection.

The Master Plan proposes improvements to an existing wastewater system. It does not propose the construction of any structures that would directly attract new residents or employees that would lead to a direct demand for fire protection services such that new or expanded facilities would be required. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact on fire protection services would be analyzed and mitigated by the new development, if necessary. The project would have no impact on fire protection services.

a-ii) Police Protection.

As noted in a) above, the Master Plan does not propose the construction of any structures that would attract new residents or employees that would lead to a direct demand for police protection services such that new or expanded facilities would be required. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact on police protection services would be analyzed and mitigated by the development if necessary. The project would have no impact on police protection services.

a-iii) Schools.

As noted in a) above, the Master Plan does not propose the construction of any structures that would attract new residents or employees that would lead to a direct demand for schools such that new or expanded facilities would be required. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact on schools would be

analyzed and mitigated by the development if necessary. The project would have no impact on schools.

a-iv) Parks.

As noted in a) above, the Master Plan does not propose the construction of any structures that would attract new residents or employees that would lead to a direct demand for parks such that new or expanded facilities would be required. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact on parks would be analyzed and mitigated by the development if necessary. The project would have no impact on parks. See also Section 3.16, Recreation.

a-v) Other Public Facilities.

As noted, there are no other public service facilities in the Master Plan area. The Master Plan does not propose the construction of any structures that by themselves would attract new residents or employees that would lead to a demand for other public services or facilities. The project would have no impact on other public services.

3.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?				✓
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

NARRATIVE DISCUSSION

Environmental Setting

As noted in Section 3.15, Public Services, parks in the Master Plan area are managed by the CSD. The CSD, working with San Joaquin County, is developing Lockeford Memorial Park, a four-acre site on Jack Tone Road next to Lockeford Elementary School. Current facilities at Lockeford Memorial Park include picnic tables, benches, a play structure, and a disc golf course. Adjacent to the park is the Lockeford Community Center at 19258 North Jack Tone Road. Also managed by the CSD, the Lockeford Community Center provides rental space for events of up to 150 people, along with tables, chairs, and a kitchen.

The San Joaquin County Parks and Recreation Department manages 11 facilities in the unincorporated area that offer a wide range of recreational facilities and activities. The nearest County facility is Harmony Grove Church, a two-acre site at the intersection of Brandt Road and Locke Road adjacent to the southwest corner of the Master Plan area. Harmony Grove Church is a historical structure that is available for weddings and other special events. Northeast of the Master Plan area is Stillman L. Magee Memorial Park along the Mokelumne River. This 17-acre County facility offers a fishing area along the riverbanks and river access for rafters, along with picnic tables and barbeque areas (San Joaquin County 2016a).

The East Bay Municipal Utility District manages the Mokelumne Day Use Area, at the base of Camanche Dam northeast of the Master Plan area. This 61-acre facility offers picnicking, swimming, fishing, rafting access, and trails, along with a one-mile river frontage (San Joaquin County 2016a).

Environmental Impacts and Mitigation Measures

a, b) Recreational Facilities.

The Master Plan proposes improvements to an existing wastewater system. It does not propose the construction of any structures that would attract new residents or employees that would lead to a direct demand for park or recreational services such that new or expanded facilities would be required, nor would it place increased demand on existing facilities. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact on park and recreation services would be analyzed and mitigated by the development if necessary. The project would have no impact on recreational services.

3.17 TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			✓	
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?				✓
c) Substantially increase hazards to a geometric design feature (e g., sharp curves or dangerous intersections) or incompatible uses (e g, farm equipment)?		✓		
d) Result in inadequate emergency access?				✓

NARRATIVE DISCUSSION

Environmental Setting

Transportation Facilities

SR 12/88 is the primary highway in the Master Plan area. SR 12 and SR 88 merge southwest of Lockeford; the State Routes remain merged until they separate near the community of Clements to the east. Along with carrying local traffic, SR 12/88 is Lockeford's primary link to Stockton and Lodi, and it is a major regional access route to the Sierra Nevada foothills and mountains. Because it provides this regional access, the two-lane highway is congested on weekends (San Joaquin County 2016a).

Other major roads in the Master Plan area include Elliott Road, Tully Road, and Jack Tone Road. These three roads serve as collector streets, converging towards the Lockeford town center. A network of local streets feed into these roads or directly into SR 12/88 (San Joaquin County 2016a). Tully Road and Jack Tone Road cross substantial portions of the Master Plan area; the only portion of Elliott Road in the Master Plan area is in downtown Lockeford.

No buses or other public transit currently serve the Master Plan area. Calaveras Transit had provided bus service from Calaveras County to Lodi that passed through Lockeford (San Joaquin County 2016a), but that route has been discontinued. There are no designated bikeways in the Master Plan area. Sidewalks are confined to the more densely developed areas of Lockeford.

Recently, Section 15064.3 was added to the CEQA Guidelines. Section 15064.3 states that VMT is the preferred metric for evaluating transportation impacts, rather than the Level of Service (LOS) metric commonly used. VMT measures the total miles traveled by vehicles generated by a project. While LOS focuses on motor vehicle traffic, VMT accounts for the total environmental impact of transportation associated with a project, including use of travel modes such as buses or bicycles. Section 15064.3(b) sets forth the criteria for analyzing transportation impacts using the preferred VMT metric.

The Governor’s Office of Planning and Research has issued a Technical Advisory on evaluating CEQA transportation impacts using VMT. Included in this Technical Advisory are screening criteria to determine if a project may have a VMT impact that is less than significant. One of the screening criteria is that projects generating less than 110 daily vehicle trips are presumed to have a less-than-significant transportation impact (OPR 2018).

Environmental Impacts and Mitigation Measures

a) Conflict with Transportation Plans, Ordinances, and Policies.

The Master Plan proposes improvements to an existing wastewater system. Some of these improvements would occur along local roads and may cross SR 12/88. However, these

improvements would not alter the existing facilities; as such, their installation would not lead to conflicts with transportation plans and ordinances related to these roads.

The Master Plan improvements would not directly affect bus routes or stops, since no bus service is provided to the Master Plan area. Since these improvements would be buried underground or built in already-developed areas, they would not interfere with existing services or the establishment of bus services in the future, should that occur. The same conditions would apply to bicycle facilities; improvements would not interfere with future development of bikeways. The proposed improvements are not expected to significantly affect sidewalks, as most improvements would occur in areas that lack them. Any sidewalks that would need to be removed due to construction work would be replaced in accordance with County standards.

Improvements under the Master Plan would serve potential future development, which could have a significant impact on local roads and other transportation facilities. Future development would be subject to CEQA environmental review by the County, at which time its impact on transportation would be analyzed and mitigated if necessary. In summary, implementation of the Master Plan is not expected to conflict with policies and plans related to transportation. Project impacts would be less than significant.

b) Conflict with CEQA Guidelines Section 15064.3(b).

The Master Plan proposes improvements to an existing wastewater system. It does not propose the construction of any structures that would attract residents or employees that would lead to generation of VMT, other than routine maintenance trips. None of the proposed improvements would lead to the generation of 110 daily trips or more; therefore, these improvements are presumed to have a less-than-significant VMT impact.

Improvements under the Master Plan have been planned for potential future development. Should this development occur, it would be subject to CEQA environmental review by the County, at which time its impact on VMT would be analyzed and mitigated if necessary. The project would have no impact related to conflict with CEQA Guidelines Section 15064.3(b).

c) Traffic Hazards.

The Master Plan proposes improvements to the CSD's wastewater system. As has been noted, some of these improvements would be constructed along roadways. Construction work would occur within existing rights-of-way and would not alter roadways such that a traffic hazard would be created.

Construction of improvements would involve movement of construction equipment and vehicles onto and from the site, which would be somewhat different in character from existing traffic in the vicinity. This traffic would use existing roadways. Construction traffic would be intermittent and temporary, and it would cease when work is completed. However, construction in these areas could affect the movement of traffic and create temporary potential hazards. Mitigation Measure HAZ-2, described in Section 3.9, Hazards and Hazardous Materials, would require preparation and implementation of a Traffic Control Plan that would minimize construction impacts on traffic flow. After construction

work is completed, the improvements would have no impact on local roads and their traffic flow. Project impacts related to traffic safety would be less than significant with mitigation.

Level of Significance: Potentially significant

Mitigation Measures: Implementation of Mitigation Measure HAZ-3.

Significance After Mitigation: Less than significant

d) Emergency Access.

As most of the proposed improvements would be underground or involve only infrequent visits by CSD employees or contractors, emergency access would not be an issue. The main facility where emergency access would be a concern is the WWTP, and adequate access currently exists at that facility. As noted in a) above, a Traffic Control Plan would be required as mitigation, which would minimize impacts on emergency vehicle access. The project would have no impact on emergency access.

3.18 TRIBAL CULTURAL RESOURCES

a) 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or				✓
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?		✓		

NARRATIVE DISCUSSION

Information for this section was drawn primarily from a technical memorandum prepared by Solano Archaeological Services, available in Appendix D of this document. Analysis of potential tribal cultural resource impacts described in the memorandum involved a records search conducted by the Central California Information Center at California State

University Stanislaus and a search of the Sacred Lands File by the Native American Heritage Commission.

Environmental Setting

As noted in Section 3.5, Cultural Resources, the Master Plan area is in the ethnographic territory of the Northern Valley Yokuts. The Northern Valley Yokuts occupied the project area and vicinity within a larger traditional territory including lands on either side of the San Joaquin River from the Sacramento-San Joaquin Delta to south of Mendota. The Diablo Range probably marked their western boundary, while the eastern extent would have lain along the Sierra Nevada foothills.

The late prehistoric Yokuts may have been the largest ethnic group in pre-contact California and were organized into at least 11 small political units or tribes. Each tribe had a population of approximately 300 people, most of whom lived within one principal settlement that usually had the same name as the political unit. The *Yatchicumne* Yokuts group was in the area now encompassed by the City of Stockton, and the *Passime* group was in the French Camp and Duck Creek Slough areas.

Euro-American contact with the Northern Valley Yokuts began with infrequent excursions by Spanish explorers. Many Yokuts were lured or captured by missionaries and taken to Mission San Jose or Mission Santa Clara. A probable malaria epidemic in 1833 decimated the indigenous population, killing thousands. The influx of Europeans during the Gold Rush era further reduced the population because of disease and violent encounters with the miners. Presently, the Nototomne/North Valley Yokut Tribe, Inc., represents the Northern Valley Yokuts in the Stockton region.

In 2015, the California Legislature enacted AB 52, which focuses on consultation with Native American tribes to avoid or mitigate potential impacts on tribal cultural resources, which are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe." When a tribe requests consultation with a CEQA lead agency on projects within its traditionally and culturally affiliated geographical area, the lead agency must provide the tribe with notice of a proposed project within 14 days of a project application being deemed complete or when the lead agency decides to undertake the project if it is the agency's own project. The tribe has up to 30 days to respond to the notice and request consultation; if consultation is requested, then the local agency has up to 30 days to initiate consultation.

Matters which may be subjects of AB 52 consultation include the type of CEQA environmental review necessary, the significance of tribal cultural resources, and project alternatives or appropriate measures for preservation or mitigation of the tribal cultural resource that the tribe may recommend to the lead agency. The consultation process ends when either (1) the resource in question is not considered significant, (2) the parties agree to mitigate or avoid a significant effect on a tribal cultural resource, or (3) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. Regardless of the outcome, a lead agency is still obligated under CEQA to mitigate any significant environmental effects, as explicitly noted in AB 52.

The CSD provided AB 52 notice of the proposed project to the one tribe that requested notification: the Confederated Villages of Lisjan Nation. To date, only one response was received, from the same tribe, requesting additional information. Information requested by the tribe has been provided. No request for consultation has yet been received by the LCSD.

Environmental Impacts and Mitigation Measures

a-i, ii) Tribal Cultural Resources.

The Solano Archaeological Services technical memorandum did not identify any prehistoric resources, including tribal resources, within the Master Plan area (Solano Archaeological Services 2022). A recent search by the Native American Heritage Commission of its Sacred Lands yielded a positive result for the project area; the NAHC recommended outreach to representatives of several tribes. Letters from the CSD inviting potentially affected tribes to consult on the project were sent in October 2022. To date, only one tribe has requested AB 52 notification - the Confederated Villages of Lisjan Nation, which was provided in conjunction with this project. As noted, information requested by the Lisjan Nation has been provided; no formal request for consultation has been received.

As discussed in Section 3.5, Cultural Resources, it is unlikely that any archaeological resources would be found intact within the Master Plan area. However, it is conceivable that ground disturbance activities associated with the construction of improvements could unearth archaeological materials of significance that are currently unknown. These could also include resources of value to tribes in the area. Procedures to address tribal cultural resource discoveries, if they should occur, are set forth in Mitigation Measure CULT-1. In addition, Mitigation Measure CULT-2 sets forth procedures to be followed upon encountering human remains, including Native American burials. Implementation of these mitigation measures would reduce potential impacts on tribal cultural resources to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

Implement Mitigation Measures CULT-1 and CULT-2

Significance After Mitigation: Less than significant

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment facilities or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?		✓		
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?				✓
c) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			✓	
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?			✓	
e) Comply with federal, state and local management and reduction statutes and regulations related to solid waste?			✓	

NARRATIVE DISCUSSION

Environmental Setting

The Lockeford CSD provides wastewater collection and treatment services within its service area. As described in Chapter 1.0, Introduction, the CSD's wastewater system currently consists of gravity flow collector lines, four pump stations, force mains WWTP where the collected wastewater is treated, and a remote storage pond and Reclamation Area 1 where the treated wastewater is currently discharged.

The CSD also provides water supply service to its service area. As of 2017, the CSD's water system served 725 residential customers, 15 multi-family customers (apartments) and 83 commercial customers. Groundwater produced from four interconnected wells provides the CSD's sole water supply (Lockeford CSD 2017). As noted in Chapter 1.0, Introduction, the CSD currently withdraws approximately 400 acre-feet of water per year.

Storm drainage capture and transport in Lockeford includes County-maintained underground pipes to storage ponds that feed to the Mokelumne River and Bear Creek. Terminal drainage systems exist for the Bear Creek Terrace and Locke Haven subdivisions.

A third terminal drainage system, serving development along Jack Tone Road, is also available for storm drainage (San Joaquin County 2016a).

Solid waste collection services for residences within the Master Plan area are provided by Central Valley Waste Services. Service for commercial and industrial activities is arranged between customers and private companies. Solid waste collected within the County is transported and disposed of primarily at three landfills: the North County Landfill on East Harney Lane, with available capacity to the year 2048, and the Foothill Sanitary Landfill on North Waverly Road, with available capacity to 2082 (CalRecycle 2019). The Forward Landfill on Austin Road near Stockton was to have reached its capacity in 2020; however, the County Board of Supervisors recently approved an expansion of Forward Landfill that would extend its life to 2036 (Crunden 2020).

Electricity and natural gas services are provided by the Pacific Gas and Electric Company (PG&E). Telecommunication services are provided by various private companies. Existing electrical and natural gas lines and telecommunication facilities are available in the Master Plan area.

Environmental Impacts and Mitigation Measures

a) Construction or Relocation of Infrastructure.

The Master Plan proposes improvements to the CSD's wastewater system to serve planned future population growth and development in the Master Plan area. The improvements would include the installation of new gravity pipelines and force mains, three new pump stations, the relocation of a pump station, and the potential use of the Historic WWTP site and Reclamation Area 2 for treated wastewater discharge.

This IS/MND evaluates the potential environmental impacts of implementation of the Master Plan at a programmatic level that is intended to streamline environmental review at the project level. Where appropriate, mitigation measures applicable to specific environmental impacts have been identified that can be applied to individual improvement projects. Using this programmatic IS/MND, future individual wastewater system improvements would likely undergo a more streamlined CEQA review, during which significant environmental impacts, if any, specific to the improvement would be identified and mitigated. Implementation of the Master Plan would not lead to significant environmental impacts that cannot be mitigated to a level that would be less than significant.

It is expected that the proposed improvements would avoid other existing infrastructure in the construction area, such as water lines. However, it is possible that implementation of individual improvements could involve potential conflicts with, and potentially require the relocation, of other infrastructure. Mitigation described below would require identification of other infrastructure that could be affected by a planned improvement, the potential environmental impacts related to effects on the infrastructure, and mitigation of any required relocation or new construction if necessary. Implementation of this mitigation measure would reduce impacts related to construction or relocation affecting other infrastructure to a level that would be less than significant.

Level of Significance: Potentially significant

Mitigation Measures:

UTIL-1: Construction plans for each improvement implemented under the Wastewater Master Plan shall identify existing infrastructure within the project area and provide for avoidance or relocation of the infrastructure as required. To the extent feasible, avoidance of relocation is preferred. If new infrastructure outside the proposed improvement area, then the need for separate environmental review shall be considered and conducted as required, in accordance with the California Environmental Quality Act (CEQA) and the adopted CEQA Guidelines. The environmental review shall be completed prior to adoption of the final improvement plans.

Significance After Mitigation: Less than significant

b) Water Supply.

As discussed in Section 3.10, Hydrology and Water Quality, implementation of the Master Plan would not directly result in an increased demand for potable water. Existing groundwater supplies available to the CSD would not be directly affected by the proposed Master Plan improvements. The project would have no impact on water supply.

c) Wastewater Systems.

The purpose of the Master Plan are to identify improvements to the CSD wastewater system that would allow it to accommodate increased volumes of wastewater generated by future population growth and development. With implementation of the Master Plan, adequate treatment capacity would be available. Project impacts on wastewater treatment capacity would be less than significant or beneficial.

d, e) Solid Waste Services.

Implementation of the Master Plan is not expected to lead to generation of substantial amounts of solid waste from system operations. Construction and demolition waste is not expected to be substantial; any substantial waste from this source would be subject to the provisions of San Joaquin County Code Title 5, Division 2, Chapter 14. There is adequate capacity at the County landfills to accommodate any solid waste associated with implementation of the Master Plan. Project impacts related to solid waste would be less than significant.

3.20 WILDFIRE

If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?		✓		
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?				✓
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?				✓
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?				✓

NARRATIVE DISCUSSION

Environmental Setting

Wildland fires are an annual hazard in San Joaquin County. Wildland fires burn natural vegetation on undeveloped lands and include rangeland, brush, and grass fires. Long, hot, and dry summers with temperatures often exceeding 100°F add to the county's fire hazard. Human activities are the major causes of wildland fires, while lightning causes the remaining wildland fires. High hazard areas for wildland fires are the grass-covered areas in the east and the southwest foothills of the county (San Joaquin County 2016a).

As noted in Section 3.9, Hazards and Hazardous Materials, the Master Plan area has mixed urban and agricultural development, where the likelihood of wildland fire is low. The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program identifies fire threat based on a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined in determining the following Fire Hazard Severity Zones: Moderate, High, Very High, Extreme. These zones are mapped for two separate areas: State Responsibility Areas are where the State of California is financially responsible for the prevention and suppression of wildfires, while Local Responsibility Areas are where fire protection is typically provided by city fire departments, fire protection districts, counties, or by Cal Fire under contract to local government. The Master Plan area is within a Local Responsibility Area, and most of the area outside Lockeford has been placed in a Moderate Fire Hazard Severity Zone (Cal Fire 2007).

Environmental Impacts and Mitigation Measures

a) Emergency Response and Emergency Evacuation Plans.

As discussed in Section 3.9, improvements constructed within rights-of-way would make no permanent changes to the adjacent public roads, which would be the main roads for emergency vehicle access and for evacuations. No obstructions or other alterations that could hinder access would be installed by the project. Mitigation Measure HAZ-2, described in Section 3.9, would minimize temporary impacts caused by construction, Project impact on emergency response and evacuations would be less than significant with mitigation.

Level of Significance: Potentially significant

Mitigation Measures: Implementation of Mitigation Measure HAZ-3.

Significance After Mitigation: Less than significant

b) Exposure of Project Occupants to Pollutants.

The Master Plan area is not part of a State Responsibility Area. While much of the Master Plan area is within a Moderate Fire Hazard Severity Zone for local responsibility areas, the Master Plan proposes only improvements to the CSD's wastewater system. These improvements would not directly place residents into the Fire Hazard Severity Zone. Improvements under the Master Plan would serve potential future development, which would be subject to CEQA environmental review by the County, at which time its impact related to wildfires would be analyzed and mitigated by proposed new development, if necessary. The project would have no impact related to exposure of project occupants to wildfire hazards.

c) Installation and Maintenance of Infrastructure.

The Master proposes improvements to an existing wastewater system. Implementation of the Master Plan would not increase fire risk above existing conditions. The project would have no impact on this issue.

d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes.

The Master Plan area is topographically flat. Only Bear Creek crosses the Master Plan area, and it is an intermittent stream arising in the lower Sierra Nevada foothills. Moreover, as noted, no residents would be directly placed in a potential fire hazard area by implementation of the Master Plan. Structures associated with the proposed improvements would not be as vulnerable to damage from wildfires as would buildings. As such, it is not expected that people or structures would be exposed to significant risks from changes resulting from off-site wildfires including downslope or downstream flooding or landslides. The project would have no impact related to risks from runoff, post-fire slope instability, or drainage changes.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			✓	

NARRATIVE DISCUSSION

a) Findings on Biological and Cultural Resources.

The project's potential impacts on biological resources, cultural resources, and tribal cultural resources were described in Sections 3.4, 3.5, and 3.18, respectively. Potentially significant environmental effects on biological, cultural, and tribal cultural resources were identified, but implementation of mitigation measures that would be applied to improvements would reduce these effects to a level that would be less than significant. The mitigation measures are described in Sections 3.4, 3.5 and 3.18 and are listed in Table 1-1.

b) Findings on Cumulatively Considerable Impacts.

A cumulative impact is an environmental impact that may result from the combination of two or more environmental impacts associated with the proposed project with each other, or the combination of one or more project impacts with related environmental impacts caused by other projects. In most cases, the potential for cumulative impacts of Master Plan implementation is contiguous with the CSD service area and its Sphere of Influence. Exceptions include air quality and GHG emissions, which considers impacts on the San Joaquin Valley Air Basin, and transportation, which considers impacts on the regional transportation network.

As described in this IS/MND, the potential environmental effects of Master Plan implementation would either be less than significant or would have no impact at all, when compared to the baseline. Because of the characteristics of the proposed improvements, which are wastewater infrastructure facilities, they are not expected to contribute impacts on issues such as air pollutant and GHG emissions, traffic, aesthetics, and public services. Where Master Plan implementation involves potentially significant effects on other environmental issues, these effects would be reduced to a less-than-significant level with proposed mitigation measures and compliance with required permits and applicable regulations. Given this, implementation of the proposed Master Plan improvements by themselves would not contribute significantly to any cumulative impacts.

As has been noted elsewhere in this IS/MND, the improvements proposed in the Master Plan are intended to serve potential population growth and development. Specifically, three potential development areas have been identified: the Kautz property, Lockeford Vista, and Lockeford Oaks. Development in these areas, plus anticipated infill development, would have environmental impacts that could be cumulatively considerable. The EIR for the San Joaquin County General Plan, under which future development within the Master Plan area would be subject, identified significant cumulative impacts on agricultural resources, population and housing, transportation and circulation, noise, air quality, aesthetics, public services, and utilities. Of these, impacts on agricultural resources, transportation, historical resources, air quality, and water supply were determined to be significant and unavoidable (San Joaquin County 2014).

Future development projects in the Master Plan area would be subject to CEQA review by the County, as the CSD has no land use decision-making authority. During the County's CEQA review, a determination would be made as to whether the development project would introduce new or more severe cumulative impacts than those described in the County General Plan EIR, and if additional mitigation measures are required and are feasible. Any unplanned development that may be proposed in the future also would be subject to a separate CEQA review conducted by the County.

As indicated in Table 2-1 of Chapter 2.0, Project Description, the proposed wastewater system improvements would be constructed as development occurs. This development would occur in areas designated for development, as indicated by the County General Plan. As described in Section 3.11, Land Use, proposed improvements would be consistent with policies specifically addressing development in the Lockeford area.

Overall, implementation of the Master Plan by itself is not considered to have a cumulatively considerable effect on the local environment. Future development would be evaluated at an individual project level by the County for contributions to cumulative impacts.

c) Findings on Adverse Effects on Human Beings.

Potential adverse effects of Master Plan implementation on human beings were discussed in Section 3.3, Air Quality (TACs); Section 3.7, Geology and Soils (seismic hazards); Section 3.9, Hazards and Hazardous Materials; Section 3.10, Hydrology and Water Quality (flooding); Section 3.17, Transportation/Traffic (traffic hazards); and Section 3.20,

Wildfire. No significant and unavoidable adverse effects were identified in these sections; potential adverse impacts were either less than significant or could be mitigated to that level. Impacts related to potential adverse effects on human beings would be less than significant.

4.0 REFERENCES

4.1 DOCUMENT PREPARERS

This IS/MND was prepared by BaseCamp Environmental, Inc. under the direction of, and for use by, the Lockeford Community Services District. The following persons were involved in preparation of the IS/MND:

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4.2 SOURCES CITED

Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May 2017.

California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan. November 2017.

_____. 2021. California Greenhouse Gas Emissions for 2000 to 2019: Trends of Emissions and Other Indicators. July 28, 2021.

California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program (FMMP). 2016. San Joaquin County Williamson Act FY 2015/2016 (map).

_____. 2018. San Joaquin County Important Farmland 2018 (map).

California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR). 2022. Well Finder – CalGEM GIS. Available online at https://maps.conservation.ca.gov/doggr/wellfinder/. Accessed February 28, 2022.

California Department of Finance. 2021. Report E-5, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2021, with 2010 Benchmark. Released May 1, 2021.

California Department of Forestry and Fire Protection (CalFire). 2007. Draft Fire Hazard Severity Zones in LRA, San Joaquin County (map). October 2, 2007.

California Department of Resources Recovery and Recycling (CalRecycle). 2019. SWIS Facility Detail. Available online at https://www2.calrecycle.ca.gov/swfacilities/Directory/39-AA-0022/. Accessed August 7, 2019.

California Department of Toxic Substances Control (DTSC). 2022. EnviroStor database, www.envirostor.dtsc.ca.gov. Accessed February 4 and 17, 2022.

California Department of Transportation (Caltrans). 2019. List of Officially Designated State Scenic Highways. Available online at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm. August 2019.

California Department of Water Resources (DWR). 2014. Geology of the Northern Sacramento Valley. June 2014, updated September 22, 2014.

California Energy Commission (CEC). 2020. 2020 California Renewables Portfolio Standard Annual Report. November 2020.

_____. 2022a. Electricity Consumption by County. Available online at ecdms.energy.ca.gov/elecbycounty.aspx. Accessed March 31, 2022.

_____. 2022b. Gas Consumption by County. Available online at ecdms.energy.ca.gov/gasbycounty.aspx. Accessed March 31, 2022.

California Environmental Protection Agency (CalEPA). 2021a. Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit. Available online at https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/SiteCleanup-CorteseList-CurrentList.pdf. Accessed March 5, 2021.

_____. 2021b. List of "Active" CDO and CAO from Water Board. Available online at http://www.calepa.ca.gov/SiteCleanup/CorteseList/default.htm. Accessed January 14, 2021.

California Geological Survey (CGS). 2022. CGS Information Warehouse: Regulatory Maps. Available online at maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/. Accessed April 7, 2022.

Congressional Research Service. 2021. Vehicle Fuel Economy and Greenhouse Gas Standards: Frequently Asked Questions. Updated June 1, 2021.

Crunden, E.A. 2020. Republic landfill expansion moves ahead in California after failed appeal. Waste Dive, January 10, 2020.

Eastern San Joaquin Groundwater Authority (ESJGA). 2019. Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan. November 2019.

Federal Emergency Management Agency (FEMA). 2009. Flood Insurance Rate Map No. 06077C0195F, San Joaquin County, California. Effective date October 16, 2009.

Governor's Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Traffic Impacts in CEQA. December 2018.

Lockeford Community Services District (CSD). 2011. Initial Study and Proposed Negative Declaration for District Sphere of Influence Expansion and Service Area Annexation of Kautz Property. Prepared by Atkins. December 2011.

_____. 2017. Sustainable Groundwater Management Act Fact Sheet. August 18, 2017.

_____. 2021. Draft Wastewater Facilities Master Plan. Prepared by Kjeldsen, Sinnock and Neudeck, Inc. December 22, 2021.

Moore Biological Consultants. 2022. Lockeford Waste Water Treatment Master Plan, San Joaquin County, California: Biological Assessment. December 23, 2022.

Regional Water Quality Control Board (RWQCB), Central Valley Region. 2018a. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region: The Sacramento River Basin and the San Joaquin River Basin. Fifth Edition, Revised May 2018 (with Approved Amendments).

_____. 2018b. Final Staff Report: Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and Tulare Lake Basin to Incorporate a Central Valley-wide Salt and Nitrate Control Program. May 2018.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2021. Guide to Air Quality Assessment in Sacramento County: Chapter 6 – Greenhouse Gas Emissions. Adopted February 26, 2021.

San Joaquin Council of Governments (SJCOG). 2000. San Joaquin County Multi-Species Open Space and Habitat Conservation Plan (SJMSCP). November 14, 2000.

_____. 2018. 2018 Regional Transportation Plan/Sustainable Communities Strategy Draft Programmatic Environmental Impact Report. March 2018.

San Joaquin County. 2014. Draft San Joaquin County General Plan 2035 Environmental Impact Report. Prepared by ESA. October 2014.

_____. 2016a. San Joaquin County General Plan Background Report. Prepared by Mintier Harnish. December 2016.

_____. 2016b. San Joaquin County General Plan Policy Document. Prepared by Mintier Harnish. December 2016.

San Joaquin County Agricultural Commissioner's Office. 2021. 2020 San Joaquin County Crop Report.

San Joaquin County Flood Control and Water Conservation District. 2019. Groundwater Report, Spring 2019.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). March 19, 2015.

_____. 2022. Ambient Air Quality Standards and Valley Attainment Status. Available online at http://www.valleyair.org/aqinfo/attainment.htm. Accessed January 24, 2022.

Solano Archaeological Services. 2022. Lockeford Wastewater Collection Improvements and Recycled Water Disposal Project, San Joaquin County, California. June 14, 2022.

State Water Resources Control Board (SWRCB). 2022. GeoTracker website, www.geotracker.swrcb.ca.gov. Accessed February 4, 2022.

University of California Museum of Paleontology (UCMP). 2020. UC Museum of Paleontology Localities database. Available online at https://ucmpdb.berkeley.edu/cgi/ucmp_query2. Accessed December 30, 2020.

U.S. Census Bureau. 2022. Geographic Profile - Lockeford CDP, California. Available online at https://data.census.gov/cedsci/profile?g=1600000US0642104. Accessed February 21, 2022.

U.S. Department of Agriculture. 2019. 2017 Census of Agriculture. California, State and County Data, Volume 1 – Geographic Area Series, Part 5. Issued April 2019.

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2022. Custom Soil Resource Report for San Joaquin County, California. February 16, 2022.

U.S. Department of Agriculture, Soil Conservation Service (SCS). 1992. Soil Survey of San Joaquin County, California.

U.S. Environmental Protection Agency (EPA). 2009. Endangerment and Cause of Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act. Federal Register Vol. 74, No. 239, pp. 66496-66546. December 15, 2009.

Wagner, D. L., C.W. Jennings, T.L. Bedrosian and E. J. Bortugno. 1981. Geologic Map of the Sacramento Quadrangle, California, 1:250,000. California Division of Mines and Geology, Regional Geologic Map Series.

Westerling, Leroy, Josue Medellin-Azuara, Joshua Viers. 2018. San Joaquin Valley Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-003.

4.3 PERSONS CONSULTED

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5.0 NOTES ON 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 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 [CEQA Guidelines Section 15063(c)(3)(D)]. In this case, a brief discussion should identify the following:

    a) Earlier Analyses 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 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) The checklist in CEQA Guidelines Appendix G 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.

APPENDIX A
AIR QUALITY MODELING RESULTS

Lockeford CSD Pond 3a - San Joaquin County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Lockeford CSD Pond 3a

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	14.56	Acre	14.56	634,233.60	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2026
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Construction Phase - No demolition, paving, or painting.

Off-road Equipment - CalEEMod defaults.

Trips and VMT -

Area Coating - CalEEMod defaults.

Construction Off-road Equipment Mitigation - CalEEMod defaults.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	0	150
tblAreaCoating	Area_EF_Nonresidential_Interior	0	150
tblAreaCoating	Area_EF_Parking	0	150
tblAreaCoating	Area_EF_Residential_Exterior	0	150

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblAreaCoating	Area_EF_Residential_Interior	0	150
tblAreaCoating	ReapplicationRatePercent	0	10
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	80.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2025	0.1686	2.3028	1.7079	8.9000e-003	0.3371	0.0553	0.3924	0.0876	0.0518	0.1394	0.0000	831.3190	831.3190	0.0586	0.0869	858.6796
2026	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
Maximum	**0.1686**	**2.3028**	**1.7079**	**8.9000e-003**	**0.3371**	**0.0553**	**0.3924**	**0.0876**	**0.0518**	**0.1394**	**0.0000**	**831.3190**	**831.3190**	**0.0586**	**0.0869**	**858.6796**

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					
2025	0.1686	2.3028	1.7079	8.9000e-003	0.3371	0.0553	0.3924	0.0876	0.0518	0.1394	0.0000	831.3188	831.3188	0.0586	0.0869	858.6794
2026	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
Maximum	**0.1686**	**2.3028**	**1.7079**	**8.9000e-003**	**0.3371**	**0.0553**	**0.3924**	**0.0876**	**0.0518**	**0.1394**	**0.0000**	**831.3188**	**831.3188**	**0.0586**	**0.0869**	**858.6794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-15-2025**	**7-14-2025**	1.6880	1.6880
2	**7-15-2025**	**10-14-2025**	0.6419	0.6419
3	**10-15-2025**	**1-14-2026**	0.0922	0.0922
		Highest	1.6880	1.6880

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	0.0410	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	**0.0410**	**0.0000**	**1.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**0.0000**	**2.8000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0410	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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	**0.0410**	**0.0000**	**1.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**0.0000**	**2.8000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/15/2025	4/14/2025	5	0	
2	Site Preparation	Site Preparation	5/13/2025	5/26/2025	5	10	
3	Grading	Grading	5/27/2025	7/7/2025	5	30	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Building Construction	Building Construction	7/8/2025	10/27/2025	5	80	
5	Paving	Paving	9/1/2026	8/31/2026	5	0	
6	Architectural Coating	Architectural Coating	9/29/2026	9/28/2026	5	0	

Acres of Grading (Site Preparation Phase): 14.56

Acres of Grading (Grading Phase): 14.56

Acres of Paving: 14.56

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
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	20.00	0.00	17,234.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	267.00	104.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	53.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2025

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	0.0000	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

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	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
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**	**0.0000**	**0.0000**

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	0.0000	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

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	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
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**	**0.0000**	**0.0000**

3.3 Site Preparation - 2025

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					7.7200e-003	0.0000	7.7200e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1262	0.0896	1.9000e-004		5.4300e-003	5.4300e-003		5.0000e-003	5.0000e-003	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**0.0124**	**0.1262**	**0.0896**	**1.9000e-004**	**7.7200e-003**	**5.4300e-003**	**0.0132**	**8.3000e-004**	**5.0000e-003**	**5.8300e-003**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

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	2.9000e-004	1.9000e-004	2.4800e-003	1.0000e-005	1.1100e-003	0.0000	1.1200e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.8091	0.8091	2.0000e-005	2.0000e-005	0.8151
Total	**2.9000e-004**	**1.9000e-004**	**2.4800e-003**	**1.0000e-005**	**1.1100e-003**	**0.0000**	**1.1200e-003**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.8091**	**0.8091**	**2.0000e-005**	**2.0000e-005**	**0.8151**

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					7.7200e-003	0.0000	7.7200e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1262	0.0896	1.9000e-004		5.4300e-003	5.4300e-003		5.0000e-003	5.0000e-003	0.0000	16.7335	16.7335	5.4100e-003	0.0000	16.8688
Total	**0.0124**	**0.1262**	**0.0896**	**1.9000e-004**	**7.7200e-003**	**5.4300e-003**	**0.0132**	**8.3000e-004**	**5.0000e-003**	**5.8300e-003**	**0.0000**	**16.7335**	**16.7335**	**5.4100e-003**	**0.0000**	**16.8688**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

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	2.9000e-004	1.9000e-004	2.4800e-003	1.0000e-005	1.1100e-003	0.0000	1.1200e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.8091	0.8091	2.0000e-005	2.0000e-005	0.8151
Total	**2.9000e-004**	**1.9000e-004**	**2.4800e-003**	**1.0000e-005**	**1.1100e-003**	**0.0000**	**1.1200e-003**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**0.0000**	**0.8091**	**0.8091**	**2.0000e-005**	**2.0000e-005**	**0.8151**

3.4 Grading - 2025

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					0.0204	0.0000	0.0204	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.4191	0.3950	9.3000e-004		0.0170	0.0170		0.0156	0.0156	0.0000	81.7593	81.7593	0.0264	0.0000	82.4204
Total	**0.0435**	**0.4191**	**0.3950**	**9.3000e-004**	**0.0204**	**0.0170**	**0.0374**	**2.7600e-003**	**0.0156**	**0.0184**	**0.0000**	**81.7593**	**81.7593**	**0.0264**	**0.0000**	**82.4204**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

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	0.0180	1.0650	0.2239	4.8800e-003	0.1469	0.0102	0.1571	0.0404	9.7500e-003	0.0502	0.0000	469.8846	469.8846	2.5900e-003	0.0739	491.9725
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	9.8000e-004	6.2000e-004	8.2700e-003	3.0000e-005	3.7200e-003	2.0000e-005	3.7300e-003	9.9000e-004	1.0000e-005	1.0000e-003	0.0000	2.6969	2.6969	5.0000e-005	6.0000e-005	2.7171
Total	**0.0190**	**1.0656**	**0.2322**	**4.9100e-003**	**0.1507**	**0.0102**	**0.1609**	**0.0414**	**9.7600e-003**	**0.0512**	**0.0000**	**472.5815**	**472.5815**	**2.6400e-003**	**0.0740**	**494.6896**

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					0.0204	0.0000	0.0204	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0435	0.4191	0.3950	9.3000e-004		0.0170	0.0170		0.0156	0.0156	0.0000	81.7592	81.7592	0.0264	0.0000	82.4203
Total	**0.0435**	**0.4191**	**0.3950**	**9.3000e-004**	**0.0204**	**0.0170**	**0.0374**	**2.7600e-003**	**0.0156**	**0.0184**	**0.0000**	**81.7592**	**81.7592**	**0.0264**	**0.0000**	**82.4203**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

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	0.0180	1.0650	0.2239	4.8800e-003	0.1469	0.0102	0.1571	0.0404	9.7500e-003	0.0502	0.0000	469.8846	469.8846	2.5900e-003	0.0739	491.9725
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	9.8000e-004	6.2000e-004	8.2700e-003	3.0000e-005	3.7200e-003	2.0000e-005	3.7300e-003	9.9000e-004	1.0000e-005	1.0000e-003	0.0000	2.6969	2.6969	5.0000e-005	6.0000e-005	2.7171
Total	**0.0190**	**1.0656**	**0.2322**	**4.9100e-003**	**0.1507**	**0.0102**	**0.1609**	**0.0414**	**9.7600e-003**	**0.0512**	**0.0000**	**472.5815**	**472.5815**	**2.6400e-003**	**0.0740**	**494.6896**

3.5 Building Construction - 2025

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	0.0547	0.4988	0.6434	1.0800e-003		0.0211	0.0211		0.0199	0.0199	0.0000	92.7678	92.7678	0.0218	0.0000	93.3130
Total	**0.0547**	**0.4988**	**0.6434**	**1.0800e-003**		**0.0211**	**0.0211**		**0.0199**	**0.0199**	**0.0000**	**92.7678**	**92.7678**	**0.0218**	**0.0000**	**93.3130**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

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	4.0400e-003	0.1708	0.0509	7.4000e-004	0.0249	1.0800e-003	0.0259	7.1900e-003	1.0300e-003	8.2200e-003	0.0000	70.6597	70.6597	3.4000e-004	0.0107	73.8449
Worker	0.0348	0.0222	0.2945	1.0500e-003	0.1323	5.6000e-004	0.1328	0.0352	5.1000e-004	0.0357	0.0000	96.0082	96.0082	1.9400e-003	2.2500e-003	96.7279
Total	**0.0388**	**0.1930**	**0.3453**	**1.7900e-003**	**0.1571**	**1.6400e-003**	**0.1588**	**0.0424**	**1.5400e-003**	**0.0439**	**0.0000**	**166.6679**	**166.6679**	**2.2800e-003**	**0.0129**	**170.5728**

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	0.0547	0.4988	0.6434	1.0800e-003		0.0211	0.0211		0.0199	0.0199	0.0000	92.7677	92.7677	0.0218	0.0000	93.3128
Total	**0.0547**	**0.4988**	**0.6434**	**1.0800e-003**		**0.0211**	**0.0211**		**0.0199**	**0.0199**	**0.0000**	**92.7677**	**92.7677**	**0.0218**	**0.0000**	**93.3128**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

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	4.0400e-003	0.1708	0.0509	7.4000e-004	0.0249	1.0800e-003	0.0259	7.1900e-003	1.0300e-003	8.2200e-003	0.0000	70.6597	70.6597	3.4000e-004	0.0107	73.8449
Worker	0.0348	0.0222	0.2945	1.0500e-003	0.1323	5.6000e-004	0.1328	0.0352	5.1000e-004	0.0357	0.0000	96.0082	96.0082	1.9400e-003	2.2500e-003	96.7279
Total	**0.0388**	**0.1930**	**0.3453**	**1.7900e-003**	**0.1571**	**1.6400e-003**	**0.1588**	**0.0424**	**1.5400e-003**	**0.0439**	**0.0000**	**166.6679**	**166.6679**	**2.2800e-003**	**0.0129**	**170.5728**

3.6 Paving - 2026

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	0.0000	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
Paving	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

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	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
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**	**0.0000**	**0.0000**

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	0.0000	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
Paving	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

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	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
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**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2026

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					
Archit. Coating	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
Off-Road	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2026

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	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
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**	**0.0000**	**0.0000**

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					
Archit. Coating	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
Off-Road	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2026

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	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
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**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.546418	0.052852	0.170546	0.142778	0.024223	0.005960	0.012686	0.016941	0.000462	0.000320	0.022535	0.001087	0.003193

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	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	0.0410	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004
Unmitigated	0.0410	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004
Total	**0.0410**	**0.0000**	**1.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**0.0000**	**2.8000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	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	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6000e-004	2.6000e-004	0.0000	0.0000	2.8000e-004
Total	**0.0410**	**0.0000**	**1.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**0.0000**	**2.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Welcome to the Road Construction Emissions Model, Version 9.0.0
User Instructions

This spreadsheet system contains the following individual worksheets:

1 This worksheet of User Instructions
2 Updates
3 Emission Estimates
4 Data Entry
5 Non-default Off-road Equipment
6 EMFAC2017
7 On-road Mitigation EF
8 OFFROAD Convert
9 Off-road Tier 4 EF
10 OFFROAD HP & LF
11 OFFROAD EF
12 x-ref

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and tons) by project phase and tons over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.

The last seven of these worksheets - EMFAC2017, On-road Mitigation EF, OFFROAD Convert, Off-road Tier 4 EF, OFFROAD HP & LP, OFFROAD EF and x-ref - cannot be modified by the user. They are protected worksheets.

Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticipate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction. Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet. This spreadsheet was prepared by Jones & Stokes, TIAX LLC and Ramboll Environ with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

Custom Views

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Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Lockford CSD

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)	Overlap?
Grubbing/Land Clearing	0.57	4.62	2.75	0.29	0.09	0.20	0.12	0.08	0.04	0.01	1,328.10	0.05	0.02	1,335.68	No
Grading/Excavation	0.69	4.94	3.79	0.38	0.18	0.20	0.20	0.16	0.04	0.02	1,520.58	0.06	0.04	1,535.12	No
Drainage/Utilities/Sub-Grade	0.80	10.11	2.78	0.32	0.12	0.20	0.15	0.11	0.04	0.02	2,286.13	0.07	0.02	2,293.29	No
Paving	0.82	8.75	4.59	0.22	0.22	0.00	0.20	0.20	0.00	0.02	1,633.48	0.07	0.03	1,645.44	No
Maximum (pounds/day)	0.82	10.11	4.59	0.38	0.22	0.20	0.20	0.20	0.04	0.02	2,286.13	0.07	0.04	2,293.29	
Total (tons/construction project)	0.05	0.48	0.23	0.02	0.01	0.01	0.01	0.01	0.00	0.00	117.89	0.00	0.00	118.61	

Notes:

Project Start Year ->	2030
Project Length (months) ->	6
Total Project Area (acres) ->	3
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	120	20
Grading/Excavation	32	0	40	0	160	20
Drainage/Utilities/Sub-Grade	0	0	0	0	120	0
Paving	0	6	0	20	120	20

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 -> Lockford CSD

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.77	0.00	0.00	8.00
Grading/Excavation	0.02	0.13	0.10	0.01	0.00	0.01	0.01	0.00	0.00	0.00	40.14	0.00	0.00	36.77
Drainage/Utilities/Sub-Grade	0.02	0.23	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	52.81	0.00	0.00	48.06
Paving	0.01	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.17	0.00	0.00	14.78
Maximum (tons/phase)	0.02	0.23	0.10	0.01	0.00	0.01	0.01	0.00	0.00	0.00	52.81	0.00	0.00	48.06
Total (tons/construction project)	0.05	0.48	0.23	0.02	0.01	0.01	0.01	0.01	0.00	0.00	117.89	0.00	0.00	107.60

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.

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	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
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving	20.00			1	20.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Grading/Excavation (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Paving (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
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	0.02	0.15	0.00	0.00	0.00	69.34	0.00	0.01	72.58
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.72
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.72

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip	20			
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	3		6	120.00
No. of employees: Grading/Excavation	4		8	160.00
No. of employees: Drainage/Utilities/Sub-Grade	3		6	120.00
No. of employees: Paving	3		6	120.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.01	0.58	0.03	0.05	0.02	0.00	254.00	0.00	0.00	255.22
Grading/Excavation (grams/mile)	0.01	0.58	0.03	0.05	0.02	0.00	254.00	0.00	0.00	255.22
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.58	0.03	0.05	0.02	0.00	254.00	0.00	0.00	255.22
Paving (grams/mile)	0.01	0.58	0.03	0.05	0.02	0.00	254.00	0.00	0.00	255.22
Grubbing/Land Clearing (grams/trip)	0.69	2.18	0.17	0.00	0.00	0.00	54.52	0.04	0.02	62.44
Grading/Excavation (grams/trip)	0.69	2.18	0.17	0.00	0.00	0.00	54.52	0.04	0.02	62.44
Draining/Utilities/Sub-Grade (grams/trip)	0.69	2.18	0.17	0.00	0.00	0.00	54.52	0.04	0.02	62.44
Paving (grams/trip)	0.69	2.18	0.17	0.00	0.00	0.00	54.52	0.04	0.02	62.44
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.01	0.18	0.01	0.01	0.00	0.00	67.92	0.00	0.00	68.35
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.45
Pounds per day - Grading/Excavation	0.01	0.24	0.01	0.02	0.01	0.00	90.56	0.00	0.00	91.13
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	0.00	2.39	0.00	0.00	2.41
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.18	0.01	0.01	0.00	0.00	67.92	0.00	0.00	68.35
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00	0.00	1.58
Pounds per day - Paving	0.01	0.18	0.01	0.01	0.00	0.00	67.92	0.00	0.00	68.35
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.68
Total tons per construction project	0.00	0.01	0.00	0.00	0.00	0.00	5.08	0.00	0.00	5.11

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust	1		1.00			20.00		20.00
Grading/Excavation - Exhaust	1		1.00			20.00		20.00
Drainage/Utilities/Subgrade								0.00
Paving	1		1.00			20.00		20.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Grading/Excavation (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Paving (grams/mile)	0.03	0.42	3.20	0.11	0.05	0.01	1,572.50	0.00	0.25	1,646.20
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.02	0.15	0.00	0.00	0.00	69.34	0.00	0.01	72.58
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.48
Pounds per day - Grading/Excavation	0.00	0.02	0.15	0.00	0.00	0.00	69.34	0.00	0.01	72.58
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.83	0.00	0.00	1.92
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	0.02	0.15	0.00	0.00	0.00	69.34	0.00	0.01	72.58
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.72
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	2.97	0.00	0.00	3.11

Note: Fugitive dust default values can be overridden in cells D183 through D185.

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	0.02		0.20	0.00	0.04	0.00
Fugitive Dust - Grading/Excavation	0.02		0.20	0.01	0.04	0.00
Fugitive Dust - Drainage/Utilities/Subgrade	0.02		0.20	0.00	0.04	0.00

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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
			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
			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 Equipm	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 Equipm	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
			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
			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
			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
1.00			Model Default Tier	Rubber Tired Loaders	0.27	1.47	0.84	0.03	0.03	0.01	732.49	0.02	0.01	734.71
			Model Default Tier	Scrapers	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	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			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	0.17	2.35	1.03	0.02	0.02	0.00	359.73	0.02	0.00	360.91
			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

1 New Road Const

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
	Grubbing/Land Clearing	pounds per day		0.56	4.41	2.59	0.08	0.08	0.01	1,190.84	0.05	0.01	1,194.75
	Grubbing/Land Clearing	tons per phase		0.00	0.03	0.02	0.00	0.00	0.00	7.86	0.00	0.00	7.89

Grading/Excavation

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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
			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
			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 Equipm	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 Equipm	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
			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
			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
			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
1.00			Model Default Tier	Rubber Tired Loaders	0.27	1.47	0.84	0.03	0.03	0.01	732.49	0.02	0.01	734.71
			Model Default Tier	Scrapers	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	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			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
			Model Default Tier	Tractors/Loaders/Backhoes	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	Trenchers	0.28	2.57	1.76	0.09	0.09	0.00	390.90	0.02	0.00	392.40
			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
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
	Grading/Excavation	pounds per day		0.67	4.64	3.32	0.15	0.15	0.01	1,222.01	0.06	0.01	1,226.23
	Grading/Excavation	tons per phase		0.02	0.12	0.09	0.00	0.00	0.00	32.26	0.00	0.00	32.37

Drainage/Utilities/Subgrade

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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
			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
			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
1.00			Model Default Tier	Cranes	0.26	1.36	0.88	0.03	0.03	0.01	671.45	0.02	0.01	673.54
			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
			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
2.00			Model Default Tier	Other Construction Equipment	0.41	7.97	1.17	0.05	0.05	0.02	1,448.14	0.04	0.01	1,452.27
			Model Default Tier	Other General Industrial Equipm	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 Equipm	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	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
2.00			Model Default Tier	Other Construction Equipment	0.41	7.97	1.17	0.05	0.05	0.02	1,448.14	0.04	0.01	1,452.27
			Model Default Tier	Other General Industrial Equipm	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 Equipm	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
			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
			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
			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
2.00			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			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
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			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
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
	Drainage/Utilities/Sub-Grade		pounds per day	0.79	9.93	2.77	0.10	0.10	0.02	2,218.21	0.07	0.02	2,224.94
	Drainage/Utilities/Sub-Grade		tons per phase	0.02	0.23	0.06	0.00	0.00	0.00	51.24	0.00	0.00	51.40

Paving

Override of Default Number of Vehicles	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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
	Program-estimate													
			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
			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 Equipm	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 Equipm	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	0.29	3.20	1.37	0.07	0.07	0.01	547.26	0.03	0.00	549.14
1.00			Model Default Tier	Paving Equipment	0.24	2.77	1.14	0.06	0.06	0.01	476.30	0.02	0.00	477.91
			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	0.16	1.95	1.05	0.04	0.04	0.00	304.70	0.01	0.00	305.75
			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
2.00			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			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
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			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
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
	Paving	pounds per day		0.81	8.53	4.28	0.19	0.19	0.02	1,426.89	0.07	0.01	1,431.92
	Paving	tons per phase		0.01	0.08	0.04	0.00	0.00	0.00	14.13	0.00	0.00	14.18
Total Emissions all Phases (tons per construction period) =>				0.05	0.47	0.21	0.01	0.01	0.00	105.49	0.00	0.00	105.83

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

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		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

				Columns			
Horsepower	Load Factor adjustment	Hours/Day	(LxMxN)	HP Bin	HP Bin Bottom
63.00	0.31	8.0	156.2	120	14
78.00	0.48	8.0	299.5	120	23
221.00	0.50	8.0	884.0	250	32
9.00	0.56	8.0	40.3	15	34
81.00	0.73	8.0	473.0	120	38
231.00	0.29	8.0	535.9	250	45
212.00	0.43	8.0	729.3	250	52
85.00	0.78	8.0	530.4	120	59
158.00	0.38	8.0	480.3	175	67
89.00	0.20	8.0	142.4	120	72
84.00	0.74	8.0	497.3	120	81
187.00	0.41	8.0	613.4	250	87
124.00	0.44	8.0	436.5	175	92
402.00	0.38	8.0	1222.1	500	97
172.00	0.42	8.0	577.9	175	103
88.00	0.34	8.0	239.4	120	112
168.00	0.40	8.0	537.6	175	118
130.00	0.42	8.0	436.8	175	124
132.00	0.36	8.0	380.2	175	129
8.00	0.43	8.0	27.5	15	130
13.00	0.30	8.0	31.2	15	136
84.00	0.74	8.0	497.3	120	145
80.00	0.38	8.0	243.2	120	152
100.00	0.40	8.0	320.0	120	157
247.00	0.40	8.0	790.4	250	162
203.00	0.36	8.0	584.6	250	170
367.00	0.48	8.0	1409.3	500	175
6.00	0.82	8.0	39.4	15	180
65.00	0.37	8.0	192.4	120	183
263.00	0.30	8.0	631.2	500	189
64.00	0.46	8.0	235.5	120	195
97.00	0.37	8.0	287.1	120	202
78.00	0.50	8.0	312.0	120	210
46.00	0.45	8.0	165.6	50	217

Off-road Equipment Tier 4 Emission Factors

HP Bin		Emission Factor (g/bhp-hr)				
Low HP	High HP	ROG	CO	NOx	PM10	PM2.5
0	11	0.30	6.00	5.32	0.30	0.28
11	25	0.30	4.90	5.32	0.30	0.28
25	50	0.19	4.10	3.33	0.02	0.02
50	75	0.19	3.70	3.33	0.02	0.02
75	100	0.15	3.70	0.30	0.02	0.01
100	175	0.15	3.70	0.30	0.02	0.01
175	300	0.15	2.60	0.30	0.02	0.01
300	600	0.15	2.60	0.30	0.02	0.01
600	750	0.15	2.60	0.30	0.02	0.01
750	1200	0.15	2.60	2.60	0.03	0.03
1200	9999	0.15	2.60	2.60	0.03	0.03

92 % of PM2.5 in PM10 (from CEIDARS)

95 % of NOx in NMHC+NOx (from http://www.arb.ca.gov/msprog/moyer/guidelines/2005_Carl_Moyer_Guidelines_Part4.pdf)

1.07 VOC/NMHC

Note:

1. Tier 4 Emission Factors are converted from EPA Non-road Diesel Engine Standards. Available at www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
2. Assume PM2.5 is 92% of PM10.

Default Horsepower and Load Factor

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	63	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	221	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	231	0.29
Crawler Tractors	212	0.43
Crushing/Proc. Equipment	85	0.78
Excavators	158	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	187	0.41
Off-Highway Tractors	124	0.44
Off-Highway Trucks	402	0.38
Other Construction Equipment	172	0.42
Other General Industrial Equipment	88	0.34
Other Material Handling Equipment	168	0.4
Pavers	130	0.42
Paving Equipment	132	0.36
Plate Compactors	8	0.43
Pressure Washers	13	0.3
Pumps	84	0.74
Rollers	80	0.38
Rough Terrain Forklifts	100	0.4
Rubber Tired Dozers	247	0.4
Rubber Tired Loaders	203	0.36
Scrapers	367	0.48
Signal Boards	6	0.82
Skid Steer Loaders	65	0.37
Surfacing Equipment	263	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	78	0.5
Welders	46	0.45

Default Horsepower and Load Factor from CalEEMod2016 Appendix D: Table 3.3

APPENDIX B
BIOLOGICAL RESOURCES REPORT

MOORE BIOLOGICAL CONSULTANTS

November 15, 2022

Mr. Charlie Simpson
BaseCamp Environmental
802 West Lodi Avenue
Lodi, CA 95240

Subject: "LOCKEFORD WASTE WATER TREATMENT MASTER PLAN", SAN JOAQUIN COUNTY, CALIFORNIA: BIOLOGICAL ASSESSMENT

Dear Charlie:

Thank you for asking Moore Biological Consultants to prepare a biological assessment for this Master Plan project in and surrounding Lockeford, in San Joaquin County, California (Figures 1 and 2). The purpose of this assessment is to describe existing biological resources in the site, identify potentially significant impacts to biological resources from the proposed project, and provide recommendations for how to reduce those impacts to a less-than-significant level. The work involved reviewing databases, aerial photographs, and documents, and conducting field surveys to document vegetation communities, potentially jurisdictional Waters of the U.S. and/or wetlands, and potentially suitable habitat for or presence of special-status species. This report details the methodology and results of our investigation.

Project Overview

The Lockeford Community Services District has prepared an updated Wastewater Facilities Master Plan to support existing and anticipated development in and near Lockeford. The Master Plan describes infrastructure improvements that are envisioned to be built out over time. Key infrastructure

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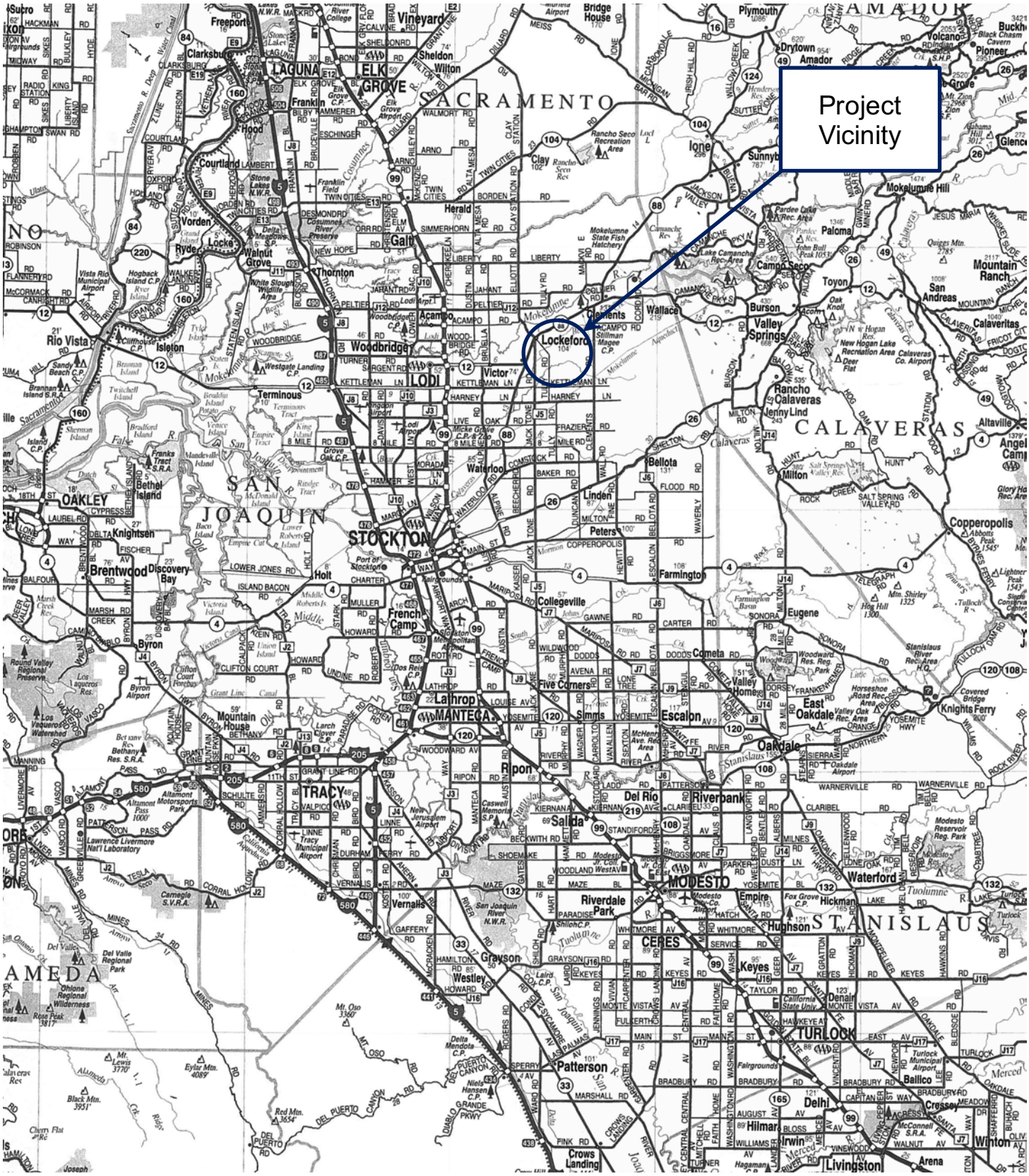
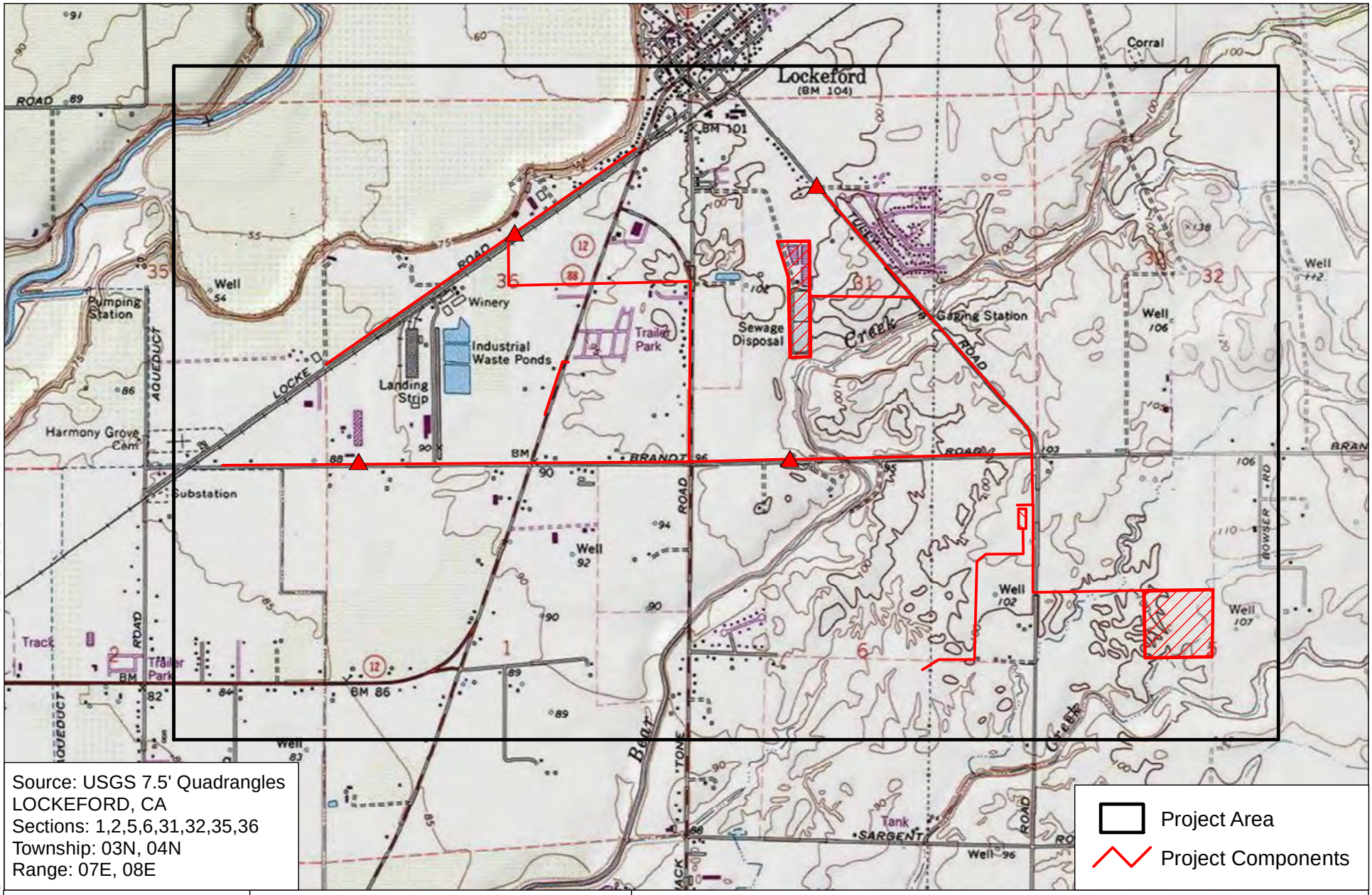


Source: California State Automobile Association

Moore Biological Consultants

FIGURE 1

PROJECT VICINITY



Source: USGS 7.5' Quadrangles
LOCKEFORD, CA
Sections: 1,2,5,6,31,32,35,36
Township: 03N, 04N
Range: 07E, 08E

Figure 2

Moore Biological Consultants

0 1,000 2,000

N W E S

Map Date: 09/29/2022

USGS

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

improvements include a network of gravity sewer pipelines and force mains, three new pump stations, expansion of an existing pump station, two potential groundwater recharge ponds, and a recycled water treatment facility (see project maps in Attachment A). These areas are collectively referred to as the “project site” or “site” below.

The proposed sewer pipelines and force mains will primarily be situated in road shoulders along existing roads adjacent to agricultural fields, industrial parcels, and residential areas. The pump stations will primarily be situated in disturbed areas adjacent to the road shoulders. The potential groundwater recharge ponds (i.e., “reclamation areas” will be located in open grassland fields. The proposed North Reclamation Area is a field which was used in the past for wastewater treatment; the proposed South Reclamation Area is farmed in a dryland hay crop.

Two of the proposed force mains will cross Bear Creek. In these locations, the force mains will either be attached to the existing bridges, installed in the creek bed and banks (i.e., open trench), or installed under the creek using bore & jack or directional drilling technology.

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB, 2022). The CNDDB search included the USGS 7.5-minute Lockeford, Waterloo, Clements, and Linden topographic quadrangles, encompassing approximately 240+/- square miles surrounding the site (Attachment B). The United States Fish and Wildlife Service (USFWS*)* IPaC Trust Resource Report of Federally Threatened and Endangered species that may occur in or be affected by projects in the project vicinity was also reviewed (Attachment B). This information was used to identify special-status wildlife and plant species that have been previously documented in the vicinity or have the potential to occur based on suitable habitat and geographical distribution. Additionally, the CNDDB depicts

the locations of sensitive habitats. The USFWS on-line-maps of designated critical habitat in the area were also downloaded.

Field surveys were conducted on June 23, 2022 and August 19, 2022. The survey area included the approximate footprint of the proposed infrastructure improvements, as well as adjacent areas that may be subject to construction disturbance. The surveys consisted of walking and driving throughout the site making observations of habitat conditions and noting surrounding land uses, habitat types, and plant and wildlife species. The fieldwork included an assessment of potentially jurisdictional Waters of the U.S. and wetlands as defined by the U.S. Army Corps of Engineers (ACOE, 1987; 2008) and a search for special-status species and suitable habitat for special-status species (e.g., blue elderberry shrubs, vernal pools).

Trees in and near the site were assessed for the potential use by nesting raptors, especially Swainson's hawk (*Buteo swainsoni*). Grasslands in the site and adjacent areas visible from the site were searched for burrowing owls (*Athene cunicularia*) or ground squirrel burrows with evidence of past occupancy. Seasonal wetland habitats in the site were assessed for potential use by vernal pool branchiopods, primarily vernal pool fairy shrimp (*Branchinecta lynchi*). Grassland areas in and near the site were searched for suitable habitat for California tiger salamander (*Ambystoma californiense*).

Results

GENERAL SETTING: The project site is in and surrounding Lockeford, in San Joaquin County, California. The site is within Sections 1, 2, 5, 6, 31, 32, 35, and 36, in Townships 3 and 4 North and Ranges 7 and 8 East of the USGS 7.5-minute Lockeford topographic quadrangle (Figure 2). A majority of the proposed sewer pipelines, force mains, and pump stations in the northwest part of the project site are on generally level land at elevations of approximately 90 to 95 feet above mean sea level. The grassland fields in the southeast part of site (i.e.,

southeast of Bear Creek) are primarily very gently rolling hills that range in elevation from 80 to 110 feet above mean sea level.

Land uses in this portion of San Joaquin County are primarily agricultural and residential. Parcels adjacent to the site are comprised of residences and fields planted in different crops, primarily vineyards. There are also areas in commercial and industrial uses in central and west parts of the project site, as well as some areas of open space.

The project site consists of several components throughout a few different habitat types, most of which are highly disturbed from development or agricultural activities (Figure 3 and photographs in Attachment C). Most of the proposed sewer pipelines and force mains are along existing roads adjacent to agricultural fields, industrial parcels, and residential areas. The pump station locations are in disturbed areas adjacent to existing roads. The potential recharge ponds are located in open grassland fields, with the North Reclamation Area being disturbed by past use for wastewater treatment and the South Reclamation Area being disturbed by ongoing dryland hay farming.

VEGETATION: The grasslands in the site are best described as ruderal annual grassland that has been highly disturbed from periodic mowing and/or disking, hay farming, and/or development. California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describes the disturbed grassland vegetation in the site. Grasses including oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), and foxtail barley (*Hordeum murinum*), are dominant grass species in the site. Other grassland species such as black mustard (*Brassica nigra*), prickly lettuce (*Lactuca serriola*), yellow star thistle (*Centaurea solstitialis*), field bindweed (*Convolvulus arvensis*), chicory (*Chicorium intybus*), and filaree (*Erodium botrys*), tall annual willowherb (*Epilobium brachycarpum*), and common mallow (*Malva neglecta*) are intermixed with the grasses. Table 1 is a list of plant species observed in the site.

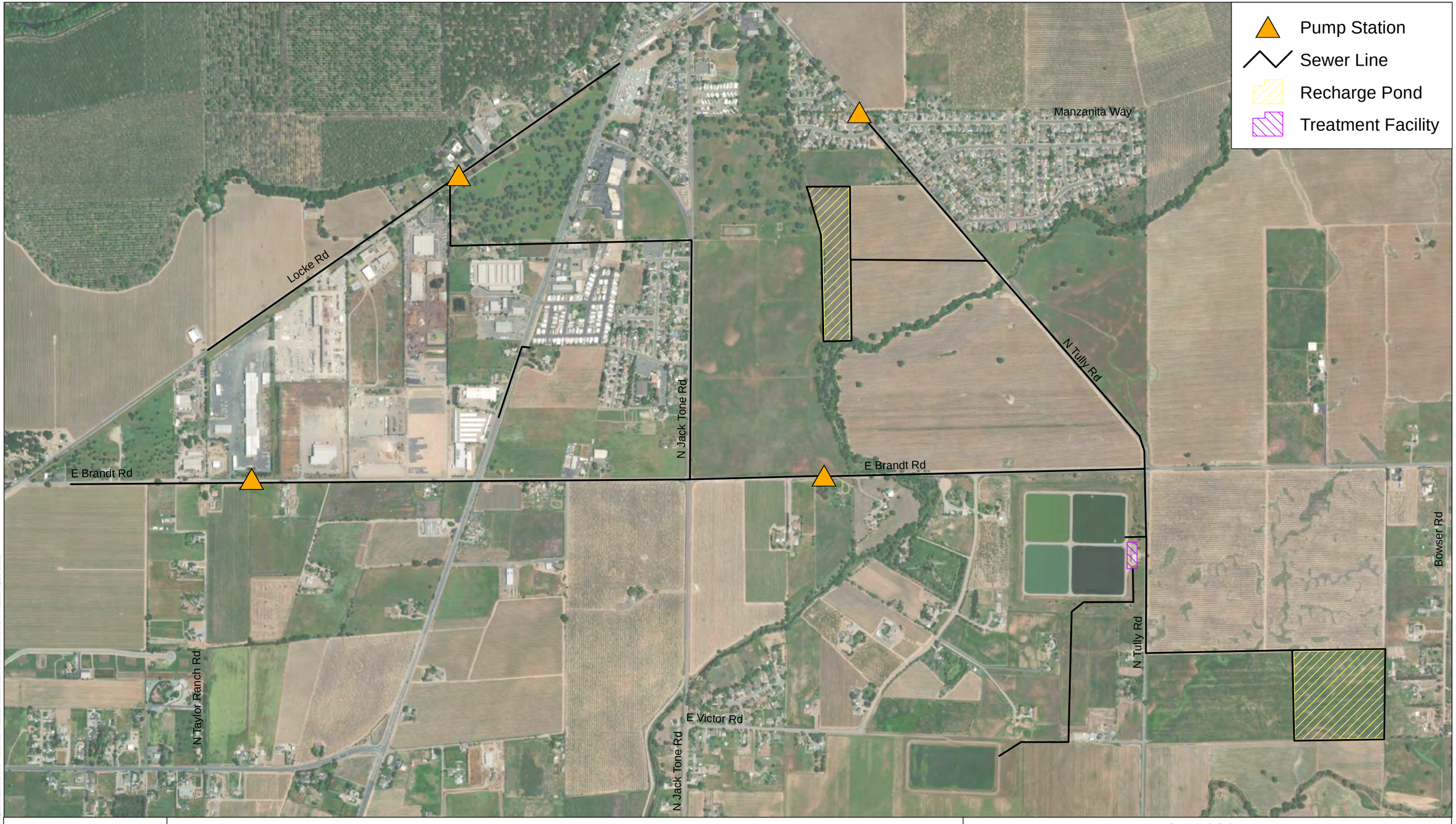


Figure 3

Moore Biological Consultants

0 1,000 2,000

N W E S

Map Date: 09/28/2022
Aerial Source: Maxar (04/2021)

AERIAL

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

TABLE 1

PLANT SPECIES OBSERVED IN THE PROJECT SITE

Acmispon americanus	Spanish clover
Avena sp.	oat
Bombycilaena californica	Q tips
Brassica nigra	black mustard
Briza minor	little quaking grass
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess brome
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	yellow star-thistle
Centromadia fitchii	Fitch's spikeweed
Chicorium intybus	chicory
Convolvulus arvensis	field bindweed
Epilobium brachycarpum	willow herb
Eremocarpus setigerus	dove weed
Erigeron bonariensis	hairy fleabane
Erodium botrys	long-beaked stork's-bill
Eryngium vaseyi	coyote thistle
Hordeum marinum	Mediterranean barley
Hordeum murinum	foxtail barley
Lactuca serriola	prickly lettuce
Leontodon saxatilis	long-beaked hawkbit
Lolium perenne	perennial ryegrass
Lythrum hyssopifolium	Hyssop loosestrife
Plagiobothrys stipitatus	popcorn flower
Plantago lanceolata	English plantain
Polygonum aviculare	prostrate knotweed
Polypogon monspeliensis	annual rabbit's foot grass
Quercus agrifolia	coast live oak
Quercus lobata	valley oak
Raphanus sativus	wild radish
Rumex crispus	curly dock
Sequoia sp.	redwoods
Salix spp.	willows
Trichostema lanceolatum	vinegar weed
Trifolium hirtum	rose clover

There are several trees in and adjacent to the project site. The most notable trees are valley oaks (*Quercus lobata*), which are primarily growing in oak woodlands in the north part of the site and along Bear Creek. The Bear Creek riparian corridor also supports willows (*Salix* spp.) and other riparian trees and shrubs. There are also some notable coast live oaks (*Quercus agrifolia*) and other trees scattered throughout the site. Many of the other trees are ornamental species used for landscaping of homes, businesses, and roads.

As discussed above, the South Reclamation Area is an open field that has been farmed in hay crops for decades. Despite extensive farming, the field has not been leveled and contains several seasonal wetlands. The wetlands support hydrophytes such as popcorn flower (*Plagiobothrys stipitatus*), coyote thistle (*Eryngium vaseyi*), Mediterranean barley *(Hordeum marinum),* and hyssop loosestrife (*Lythrum hyssopifolia*).

No blue elderberry (*Sambucus nigra ssp. cerulea*) shrubs were observed in or adjacent to the project site.

WILDLIFE: A variety of bird species were observed during the field surveys; all of these are common species found in agricultural and riparian areas of northeast San Joaquin County (Table 2). Canada goose (*Branta canadensis*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), California scrubjay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), white-crowned sparrow (*Zonotrichia leucophrys*), and Brewer's blackbird (*Euphagus cyanocephalus*) are representative of the avian species observed in the site.

There are several potential nest trees in the site and in close proximity to the site that are suitable for nesting raptors and other protected migratory birds, including Swainson's hawk. Due to the presence of large trees and suitable raptor foraging habitat (i.e., open fields) in and near the site, it is likely one or more pairs of

TABLE 2

WILDLIFE SPECIES DOCUMENTED IN THE PROJECT SITE

Birds	
American white pelican	*Pelecanus erythrorhynchos*
Canada goose	*Branta canadensis*
Turkey vulture	*Cathartes aura*
White-tailed kite	*Elanus leucurus*
American kestrel	*Falco sparverius*
Killdeer	*Charadrius vociferous*
American avocet	*Recurvirostra americana*
Black-necked stilt	*Himantopus mexicanus*
Mourning dove	*Zenaida macroura*
California scrubjay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Northern mockingbird	*Mimus polyglottos*
White-crowned sparrow	*Zonotrichia leucophrys*
Brewer's blackbird	*Euphagus cyanocephalus*
House finch	*Carpodacus mexicanus*
Mammals	
Botta's pocket gopher	*Thomomys bottae*
California ground squirrel	*Otospermophilus beecheyi*
Reptiles and Amphibians	
Western fence lizard	*Sceloporus occidentalis*

raptors nest in trees in or near the site during some years. A variety of smaller birds, such as songbirds, likely nest within the trees, shrubs, and grasslands in the site, particularly within vegetation along the Bear Creek riparian corridor, and areas of oak woodlands. Red-winged blackbird (*Agelaius phoeniceus*) and other songbirds may nest in weedy grasslands in the site. Although road shoulders in the site are primarily bare dirt and gravel, it is possible that ground-nesting songbirds, such as killdeer (*Charadrius vociferous*) nest on the ground in or adjacent to the site.

Several mammals common to agricultural areas are likely occur in the project site. Several California ground squirrel (*Otospermophilus beecheyi*) and their burrows were observed within and adjacent to the site during the field surveys; pocket gopher (*Thomomys bottae*) burrows were also observed. Other common mammals including coyote (*Canis latrans*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), black-tailed hare (*Lepus californicus*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*) are expected to occur in the project site. A number of species of small rodents including mice (*Mus musculus, Reithrodontomys megalotis,* and *Peromyscus maniculatus*) and voles (*Microtus californicus*) also likely occur.

Based on habitat types present, a variety of amphibians and reptiles may use habitats in the site. Western fence lizard (*Sceloporus occidentalis*) was the only amphibian or reptile observed within the site during the field surveys; no amphibians were observed. Common amphibians and reptile species such as Pacific chorus frog (*Pseudacris regilla*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getulus*), western terrestrial garter snake (*Thamnophis elegans*), and western skink (*Eumeces skiltonianus*) may also occur in the site.

Bear Creek provides suitable habitat for a few common warm water fish species such as largemouth bass (*Micropterus salmoides*) and bluegill sunfish (*Lepomis macrochirus*).

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. Some jurisdictional waters of the U.S. also fall under the jurisdiction of CDFW and/or the California Regional Water Quality Control Board (RWQCB).

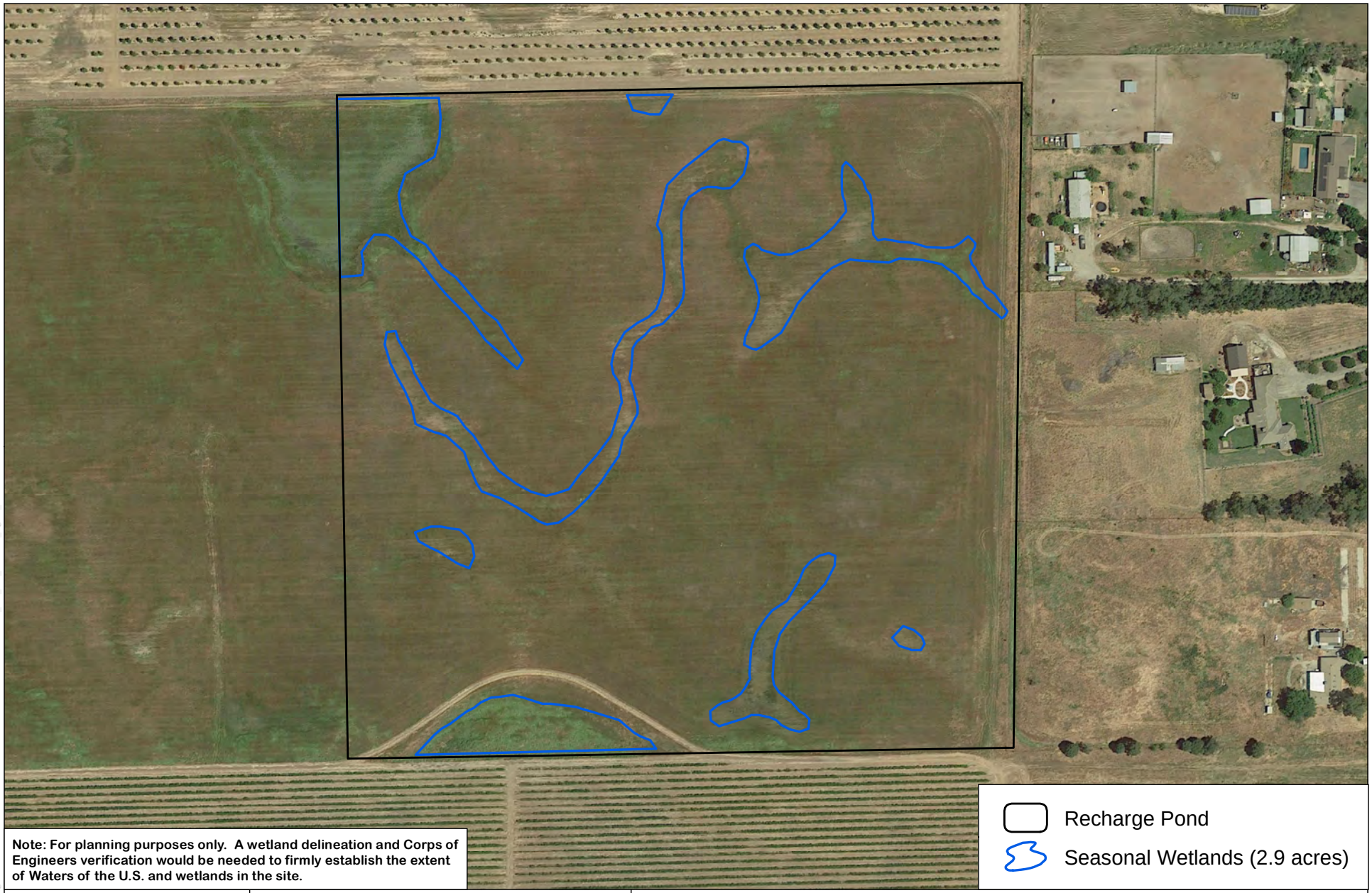
"Waters of the U.S.", as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their intermittent tributaries. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the "ordinary high water mark". The ordinary high water mark is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil, and hydrologic criteria defined by the ACOE *Wetlands Delineation Manual* and Regional Supplement (ACOE, 1987; 2008). Jurisdictional wetlands are usually adjacent to or hydrologically associated with Waters of the U.S. Most isolated wetlands are outside federal jurisdiction, but may be regulated by RWQCB under the State Wetlands Program.

Bear Creek is a jurisdictional Water of the U.S., although it is not considered navigable. The limit of federal jurisdiction of Bear Creek is the ordinary high water mark (OHWM). Bear Creek falls under the jurisdiction of CDFW and the RWQCB, with CDFW's jurisdiction also including the riparian corridor. The Central Valley Flood Protection Board has jurisdiction over Bear Creek downstream of Jack Tone Road, which is downstream of the proposed sewer pipelines and force main crossings of Bear Creek.

Bear Creek is mapped as a "blue-line" drainage on the USGS topographic map (Figure 2) and is mapped as a "Freshwater Emergent Wetland" feature in the National Wetland Inventory (NWI) (Attachment D).

The only other potentially jurisdictional Waters of the U.S. or wetlands observed int the site is an estimated 3+/- acres of seasonal wetlands in the South Reclamation Area (Figure 4). Despite high levels of disturbance from farming, the field is not leveled and there are topographic low areas scattered throughout the field. The seasonal wetlands have wetland hydrology as evidenced by ponded



Note: For planning purposes only. A wetland delineation and Corps of Engineers verification would be needed to firmly establish the extent of Waters of the U.S. and wetlands in the site.

Figure 4

Moore Biological Consultants

0 100 200

N W E S

Map Date: 09/29/2022
Aerial Source: Google Earth (05/2017)

South Recharge Pond - Seasonal Wetlands

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

water in wet season aerial photographs. The seasonal wetlands also contain cracked soils, which is indicative of hydric soils. Finally, the vegetation in the seasonal wetlands is dominated by hydrophytic (i.e., "wetland") plant species.

The USGS topographic map depicts a meandering blue-line drainage through the South Reclamation Area (Figure 2). A few of the seasonal wetlands in the South Reclamation Area are also mapped as "Freshwater Emergent Wetland" and "Riverine" features in the NWI (Attachment D).

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

Special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitats. The presence of species with legal protection under the Endangered Species Act often represents a constraint to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species.

Special-status plants are those, which are designated rare, threatened, or endangered and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2022). Finally, special-status

plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on CNPS List 3.

The likelihood of occurrence of listed, candidate, and other special-status species in the site is generally low. Table 3 provides a summary of the listing status and habitat requirements of special-status species that have been documented in the greater project vicinity or for which there is potentially suitable habitat in the greater project vicinity. This table also includes an assessment of the likelihood of occurrence of each of these species in the site. The evaluation of the potential for occurrence of each species is based on the distribution of regional occurrences (if any), habitat suitability, and field observations.

SPECIAL-STATUS PLANTS: Special-status plants identified in the CNDDB (2022) search include succulent owl's-clover (*Castilleja campestris var. succulenta*), legenere (*Legenere limosa*), and Sanford's arrowhead (*Sagittaria sanfordii*) (Table 3 and Attachment B). Succulent owl's-clover is also identified in the USFWS IPaC Trust Report; the IPaC includes no other special-status plants in the project area (Attachment B).

Special-status plants generally occur in relatively undisturbed areas in vegetation communities such as vernal pools, marshes and swamps, riparian scrub, and areas with unusual soils. The seasonal wetlands in the site are relatively shallow and highly disturbed from extensive hay farming, providing poor quality habitat for succulent owl's and legenere, which generally occur in more natural vernal pool environments. Some sections of Bear Creek may provide suitable for Sanford's arrowhead.

The highly disturbed road shoulders where the proposed pump stations and sewer pipelines and force mains will primarily be situated do not provide suitable habitat for any special-status plants.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Likelihood of Occurrence in the Site
PLANTS						
Succulent owl's clover	*Castilleja campestris var. succulenta*	T	E	1B	Vernal pools.	Unlikely: the seasonal wetlands in the site are highly disturbed from dryland hay farming and provide very poor quality habitat for succulent owl's clover. The nearest occurrence of this species in the CNDDB (2022) search area is approximately 8.5 miles northwest of the site.
Legenere	*Legenere limosa*	None	None	1B	Vernal pools.	Unlikely: the seasonal wetlands in the site are highly disturbed from dryland hay farming and provide very poor quality habitat for legenere. The nearest occurrence of this species in the CNDDB (2022) search area is approximately 7.5 miles northeast of the site.
Sanford's arrowhead	*Sagittaria sanfordii*	None	None	1B	Standing or slow-moving freshwater ponds, marshes, and ditches.	Unlikely: Bear Creek provides potentially suitable habitat for Sanford's arrowhead. The nearest occurrence of Sanford's arrowhead in the CNDDB (2022) search area is approximately 2.5 miles southwest of the site.
WILDLIFE						
Birds						
Swainson's hawk	*Buteo swainsoni*	None	T	N/A	Nesting: large trees, usually within riparian corridors. Foraging: agricultural fields and annual grasslands.	High: Swainson's hawks likely nest in some of the large trees in the site. Grassland and cropland in and near the site provide potential foraging habitat for Swainson's hawks. There are several records of this species in the general project vicinity, including a few records adjacent to project components (CNDDB, 2022).
Bank swallow	*Riparia riparia*	None	T	N/A	Nests colonially in riparian habitats; requires vertical banks and cliffs with fine-textured soils.	Unlikely: there is no suitable nesting habitat for bank swallows along the banks of Bear Creek or other parts of the site. The nearest occurrence of bank swallow in the CNDDB (2022) search area is approximately 5 miles northeast of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Likelihood of Occurrence in the Site
Tricolored blackbird	*Agelaius tricolor*	None	T	N/A	Requires open water and protected nesting substrate, usually cattails and riparian scrub with surrounding foraging habitat.	Unlikely: there is no high-quality nesting habitat for tricolored blackbird in or adjacent to the site. There are a few records of tricolored blackbird in the general project vicinity (CNDDB, 2022).
Yellow-breasted chat	*Icteria virens*	None	SC	N/A	Nests in willow thickets and brushy tangles associated with streams.	Unlikely: there is no suitable habitat in or adjacent to the site to support this species; yellow-breasted chat also rarely breeds in the Central Valley. The only record of this species in the CNDDB (2022) search area is approximately 7.5 miles northeast of the site.
Yellow warbler	*Setophaga petechia*	None	SC	N/A	Nests in riparian areas, usually in willows, alders, and cottonwoods.	Unlikely: Bear Creek provides marginally suitable habitat for this species. The nearest occurrence of yellow warbler in the CNDDB (2022) search area is approximately 3 miles northwest of the site.
White-tailed kite	*Elanus leucurus*	None	FP	N/A	Herbaceous lowlands with variable tree growth and dense population of voles.	High: the grasslands in the site provide foraging habitat for white-tailed kite and large trees in the site and surrounding the site are suitable for nesting. There are no occurrences of white-tailed kite in the CNDDB (2022) search area.
Mammals						
Riparian brush rabbit	*Sylvilagus bachmani riparius*	E	E	N/A	Riparian thickets in Stanislaus and southern San Joaquin Counties.	Unlikely: the site and adjacent areas do not provide suitable habitat for riparian brush rabbit; there are no expansive areas of riparian forest or scrub-shrub vegetation in the site to support this species. This species is not known from the area and there are no occurrences of this species in the CNDB (2022) search area.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Likelihood of Occurrence in the Site
Reptiles & Amphibians						
California tiger salamander	*Ambystoma californiense*	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) near grassland/ woodland habitats with summer refugia (i.e., burrows).	High: California tiger salamander could aestivate in grasslands in the project site. There is a documented California tiger salamander breeding pond approximately 1,200 feet northwest of the proposed North Reclamation Area CNDDB (2022). There are two other potentially suitable breeding ponds 800 to 1,000 feet west of the proposed North Reclamation Area. The site is not within designated critical habitat for California tiger salamander (USFWS, 2005a).
Giant garter snake	*Thamnophis gigas*	T	T	N/A	Freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	Unlikely: there is no potentially suitable habitat for giant garter snake in or near the site. There are no occurrences of this species in the CNDDB (2022) search area.
Western pond turtle	*Emys marmorata*	None	SC	N/A	Ponds, marshes, streams, and ditches with emergent aquatic vegetation and basking areas.	Unlikely: Bear Creek is densely shaded, providing poor quality habitat for western pond turtle. The nearest occurrence of western pond turtle in the CNDDB (2022) search area is approximately 6.5 miles north of the site.
Western spadefoot	*Spea hammondii*	None	SC	N/A	Breeds and lays eggs in seasonal water bodies such as deep vernal pools or stock ponds.	Unlikely: the seasonal wetlands in the site are highly disturbed, providing poor quality habitat for western spadefoot. While less disturbed wetlands and ponds near the site may be suitable for this species, it is primarily associated with seasonal aquatic habitats in foothill grasslands several miles east of the site. The nearest occurrence of western spadefoot in the CNDDB (2022) search area is approximately 3.5 miles northeast of the site.

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Likelihood of Occurrence in the Site
Fish						
Central Valley steelhead	*Oncorhynchus mykiss*	T	None	N/A	Riffle and pool complexes with adequate spawning substrates within Central Valley drainages.	None: Bear Creek does not provide suitable habitat for Central Valley steelhead. The nearest occurrence of Central Valley steelhead in the CNDDB (2022) search area is approximately 2.5 miles northwest of the site in the Mokelumne River. The site is not within designated critical habitat for Central Valley steelhead (NOAA, 2005).
Delta smelt	*Hypomesus transpacificus*	T	T	N/A	Shallow lower delta waterways with submersed aquatic plants and other suitable refugia.	None: Bear Creek does not provide suitable habitat for delta smelt, which is restricted to tidal delta waterways. Delta smelt is not recorded in the CNDDB (2022) search area. The site is not in designated critical habitat for delta smelt (USFWS, 1994).
Invertebrates						
Vernal pool fairy shrimp	*Branchinecta lynchi*	T	None	N/A	Vernal pools.	Low: despite high levels of disturbance, the seasonal wetlands in the site provide potentially suitable habitat for vernal pool fairy shrimp, which are relatively tolerant of dryland hay farming. The nearest occurrence of this species in the CNDDB (2022) search area is approximately 6 miles southeast of the site. The site is not within designated critical habitat for vernal pool fairy shrimp (USFWS 2005b).
Vernal pool tadpole shrimp	*Lepidurus packardi*	E	None	N/A	Vernal pools.	Unlikely: the seasonal wetlands in the site are highly disturbed, providing poor quality habitat for vernal pool tadpole shrimp. The nearest occurrence of this species in the CNDDB (2022) search area is approximately 8 miles west of the site. The site is not within designated critical habitat for vernal pool tadpole shrimp (USFWS 2005b).

TABLE 3

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNPS List[3]	Habitat	Likelihood of Occurrence in the Site
Conservancy fairy shrimp	*Branchinecta conservatio*	E	None	N/A	Vernal pools.	Unlikely: the seasonal wetlands in the site are highly disturbed, providing poor quality habitat for Conservancy fairy shrimp. This species is not known from eastern San Joaquin County; there are no occurrences of this species recorded in the CNDDB (2022) within the search area. The site is not in designated critical habitat for Conservancy fairy shrimp (USFWS, 2005b).
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	None	N/A	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely: no blue elderberry shrubs were observed in or adjacent to project components during field surveys. The nearest occurrence of valley elderberry longhorn beetle in the CNDDB (2022) search area is in the general project vicinity, mapped nonspecifically around Bear Creek (CNDDB, 2022).
Monarch butterfly	*Danaus plexippus*	C	None	N/A	Variety of habitats in California, primarily associated with coastal environments; larvae dependent on milkweed.	Unlikely: no extensive areas of milkweed, upon which the larvae depend, was observed in the site. Monarch butterfly may fly over the site during its migration. There are no occurrences of this species in the CNDDB (2022) search area.

[1] T = Threatened; E = Endangered; C = Candidate for listing.

[2] T = Threatened; E = Endangered; SC= State of California Species of Special Concern.

[3] CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the project site by special-status wildlife species is generally low. Special-status wildlife species that have been recorded in greater project vicinity in the CNDDB (2022) include Swainson's hawk, tricolored blackbird (*Agelaius tricolor*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), bank swallow (*Riparia riparia*), California tiger salamander (*Ambystoma californiense*), western spadefoot (*Spea hammondii*), western pond turtle (*Emys marmorata*), Central Valley steelhead (*Oncorhynchus mykiss*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

Although not included in the CNDDB within the search area, riparian brush rabbit (*Sylvilagus bachmani riparius*), giant garter snake (*Thamnophis gigas*), delta smelt (*Hypomesus transpacificus*), Conservancy fairy shrimp (*Branchinecta conservatio*), and monarch butterfly (*Danaus plexippus*) are listed in the USFWS IPaC Trust Resource Report (Attachment B). White-tailed kite (*Elanus leucurus*), which was observed in the site, was also added to Table 3.

While the project site may have provided habitat for several special-status wildlife species at some time in the past, farming and development have substantially modified natural habitats in the greater project vicinity, including most of the project site. Of the wildlife species identified in the CNDDB, Swainson's hawk, white-tailed kite, California tiger salamander, and vernal pool fairy shrimp are species with potential to occur in the site on more than a transitory or occasional basis. Swainson's hawk and white-tailed kite could be adversely affected by conversion of habitat to development and/or disturbed by construction if construction occurs in close proximity to active nests. Vernal pool fairy shrimp and California tiger salamander, if present in the seasonal wetlands and grasslands in close proximity to these wetlands, could be impacted by construction in or near the wetlands and grasslands.

SWAINSON'S HAWK: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act (MBTA) and Fish and Game Code of California (FGCC) protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15). Swainson's hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August.

The site is within the nesting range of Swainson's hawks and the CNDDB (2022) contains several records of nesting Swainson's hawks in the general project vicinity, including several in and near Lockeford (Attachment B). Large trees in and near the site could be used by nesting Swainson's hawks and the grassland areas and croplands in and adjacent to the site provide suitable foraging habitat for this species. Although this species was not observed in the site during field visits, Swainson's hawks are known to nest in this part of San Joaquin County each year and it is likely Swainson's hawks will nest in this area in future years.

Over the buildout of the Master Plan, some of the infrastructure improvement "projects", such as one of the force mains depicted in Attachment A, may elect to participate in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) (SJCOG, 2000). The HCP involves payment of fees and compliance with standard Incidental Take Minimization Measures (ITMMs) that will be issued for the project. Pursuant to the HCP, if construction is scheduled to commence during the nesting season (i.e., between February 15 through

August 31), and Swainson's hawks are nesting in or near the site, a construction setback of twice the diameter of the drip-line of the nest tree (as measured from under the nest) would be required until nesting is complete.

WHITE-TAILED KITE: White-tailed kite is a State of California Species of Concern, but is not a listed species at the state or federal level. The MBTA and FGCC protect white-tailed kite year-round, as well as their nests during nesting season; nesting for this species peaks from May to August. White-tailed kites can be found in a variety of habitats across California including grasslands, open woodlands, riparian areas, marshes and cultivated fields. Populations of white-tailed kites are concentrated in the Central Valley, but their range spans west of the Sierra Nevada's to the California coastline.

White-tailed kite may nest in trees in or near the site and may forage in the on-site fields and grasslands near the site. Nesting usually commences in the early-spring, concurrent with other resident Central Valley raptors, and most young fledge by early-July. There are no occurrences of white-tailed kite in the CNDDB (2022) search area.

Pursuant to the HCP, if construction is scheduled to commence during the nesting season (i.e., between February 15 through September 15), and white-tailed kites are nesting in or near the site, a construction setback of a 100-foot construction setback from the nest would be required until nesting is complete.

CALIFORNIA TIGER SALAMANDER**:** In 2004, the California tiger salamander was listed as threatened under FESA (USFWS, 2004), and in 2010, it was also listed as threatened under CESA. In August 2005, USFWS designated critical habitat for the Central Valley population of California tiger salamander (USFWS, 2005a). Review of the USFWS maps of designated critical habitat for California tiger salamander indicates that the project site is not within a Critical Habitat Unit for California tiger salamander.

California tiger salamanders require stock ponds without game fish or deep, large vernal pools, which hold water well into the spring (i.e., April or May) for breeding. Grasslands containing ground squirrel burrows and other smaller mammal burrows near breeding ponds are used for over-summering. Following heavy winter rains, the adults emerge from their burrows, migrate to breeding ponds, spend a few days in the ponds breeding, and then return to their burrows. Following larval metamorphosis, the young emerge from the ponds, disperse across upland habitats, and spend the summer months in subterranean refugia. While most salamanders aestivate in burrows within several hundred feet of their breeding ponds, they have been documented over-summering up to a mile or more from their breeding ponds.

There is a documented California tiger salamander breeding pond approximately 1,200 feet northwest of the proposed North Reclamation Area (CNDDB, 2022). There are two other potentially suitable breeding ponds 800 to 1,000 feet west of the proposed North Reclamation Area. Because California tiger salamanders are known to aestivate in grasslands near their breeding pond, it is likely that this species occupies grassland habitats in and adjacent to some of the project components, even in disturbed areas along the road shoulders. Despite high levels of disturbance, California tiger salamander may also potentially breed in some of the larger seasonal wetlands in the South Reclamation Area.

VERNAL POOL BRANCHIOPODS: In 1994, USFWS listed three species of Central Valley fairy shrimp and one species of tadpole shrimp as threatened or endangered species under FESA. The vernal pool fairy shrimp was listed as threatened, while Conservancy fairy shrimp, longhorn fairy shrimp (*B. longiantenna*), and vernal pool tadpole shrimp were listed as endangered. All of these species occur in vernal pools and other seasonal wetland habitats throughout much of the Central Valley. In most years, following cold winter rains which fill vernal pools, shrimp hatch, grow for a period ranging from a couple of weeks to a couple of months, then lay eggs and die. The eggs drift to the mud at

the bottom of the pools, and remain in the dirt throughout the summer when the pools dry out. They hatch the following winter.

Although the seasonal wetlands in the South Reclamation Area are highly disturbed from farming, they provide potentially suitable habitat for vernal pool fairy shrimp. Vernal pool fairy shrimp are relatively widespread in eastern San Joaquin County and are relatively tolerant of dryland hay farming, even in cases of decades of hay farming. In contrast, the seasonal wetlands in the South Reclamation Area provide poor quality habitat for vernal pool tadpole shrimp and Conservancy fairy shrimp, which are not known from the area and are generally restricted to larger, deeper vernal pools in in more natural settings. The nearest record of vernal pool fairy shrimp in CNDDB (2022) search area is approximately 6 miles southeast of the site.

Pursuant to the HCP, the seasonal wetlands in the site are considered “potential habitat” for federally-listed large branchiopods, triggering an automatic “no construction” buffer extending 250 feet from the wetlands, until sampling is done. If the sampling results are negative (i.e., no shrimp are found), the buffer is eliminated. If the sampling results are positive, take is granted under the HCP.

Pursuant to the HCP, the filling seasonal wetlands containing vernal pool invertebrates shall be delayed until the wetlands are dry. SJCOG biologists then collect the surface soils from the wetlands and store them for future use on off-site seasonal wetland creation on SJCOG Preserve Lands.

OTHER SPECIAL-STATUS SPECIES: The site does not provide highly suitable habitat for other special-status wildlife species. Other special-status birds, such as tricolored blackbird, may fly over the area on occasion, but there is no suitable nesting habitat in or adjacent to project components. Similarly, there is no suitable well-developed riparian vegetation for nesting by other bird species such as yellow warbler or yellow-breasted chat and these species are not known from the area. There are no open cliff-like banks in the site for nesting bank swallow;

the banks of Bear Creek are generally less than 10 feet tall, are vegetated, and densely shaded.

There is no well-developed riparian forest vegetation required for riparian brush rabbit, which has never been found in this part of San Joaquin County. There are no major waterways with expansive areas of riparian forest and scrub-shrub vegetation to support this species.

Western pond turtle may occur in Bear Creek, but the creek is densely shaded, providing very limited basking habitat for western pond turtle. Western spadefoot is associated with aquatic habitats in foothill environments further east of the site and is not expected to occur in seasonal wetlands in or near the site. The site does not provide suitable aquatic habitat for giant garter snake, which is also largely restricted to tidal delta waterways.

In the Lockeford vicinity, Bear Creek does not provide suitable habitat for Central Valley steelhead, delta smelt, or other special-status fish.

No blue elderberry shrubs were observed in the project site, precluding the potential occurrence of valley elderberry longhorn beetle. Monarch butterfly may fly over the site during migration periods, but is not be expected to utilized habitats in the site in a meaningful capacity.

CRITICAL HABITAT: The site is not within designated critical habitat for California tiger salamander (USFWS, 2005a), federally listed vernal pool shrimp or plants (USFWS, 2005b), delta smelt (USFWS, 1994), valley elderberry longhorn beetle (USFWS, 1980), Central Valley steelhead (NOAA, 2005), or other federally listed species (Attachment F).

SAN JOAQUIN COUNTY MULTI-SPECIES HABITAT CONSERVATION AND OPEN SPACE PLAN: The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (SJCOG, 2000) is a comprehensive county-wide program

for mitigating the biological impacts of land development, mining and other development activities. The HCP provides coverage for non-federal projects under FESA, CESA, and the California Environmental Quality Act (CEQA). Under FESA and CESA, participation in the HCP is considered compensation for Incidental Take for the HCP covered species. The HCP is voluntary and may be used throughout county during the 50-year term of the plan. The proposed project is eligible for participation in the HCP.

Most of the site is mapped as “Natural Lands Open Spaces” in the HCP or is mapped as “Urban” (see Lockeford Community Map in Attachment G). The per-acre fee for Natural Lands Open Spaces is currently $19,255.00 per acre and the Urban areas are fee exempt. The South Reclamation Area is mapped as “Vernal Pool” in the HCP. The HCP per-acre fee for upland grasslands in Vernal Pool habitats is currently $75,320.00, while the fee for wetlands is currently $176,878.00. While the HCP may provide cost-effective mitigation for some of the Master Plan infrastructure improvement “projects”, such as one of the force mains depicted in Attachment A, participation in the HCP appears cost-prohibitive for the South Reclamation Area.

Conclusions and Recommendations

- The majority of the proposed infrastructure improvement are in disturbed habitats that are relatively biologically unremarkable. The Bear Creek riparian corridor and the proposed South Reclamation Area are the most biologically sensitive areas in the site.

- Bear Creek is a jurisdictional Water of the U.S. and also falls under the jurisdiction of CDFW and the RWQCB.

- There is an estimated 3+/- acres of potentially jurisdictional Waters of the U.S. and wetlands in the South Reclamation Area. This estimate

was based on preliminary mapping. A comprehensive wetland delineation to current standards would need to be submitted to ACOE for verification to ascertain the extent of jurisdictional Waters of the U.S. and wetlands in the South Reclamation Area. In the event ACOE declines to take jurisdiction over some of the wetlands, they may still be regulated by RWQCB as “Waters of the State”.

- A Clean Water Act Section 404 Permit from ACOE will need to be secured prior to the placement of any fill material within jurisdictional Waters of the U.S. Dependent on the type of 404 permit, 401 Water Quality Certification from RWQCB may also be required. Pursuant to Section 1602 of FGCC, work in Bear Creek would trigger a need to notify CDFW regarding the potential need for a Streambed Alteration Agreement. Finally, Waste Discharge Requirements may be required to fill wetlands that are outside ACOE jurisdiction.

- Compensatory mitigation will be needed to reduce impacts to jurisdictional Waters of the U.S. or seasonal wetlands to a less than significant level. Compensatory mitigation should be provided at a minimum ratio of 1:1 and would be best accomplished through the purchase of credits from an agency approved mitigation bank.

- Swainson’s hawk, white-tailed kite, California tiger salamander, and vernal pool fairy shrimp are the primary special-status wildlife species expected to occur in the site on more than an occasional basis.

- Swainson’s hawk and white-tailed kite may nest in trees in or near the site and may use the grasslands in the site for foraging; construction disturbance in close proximity to an active nest could result in nest abandonment. Conversion of annual grassland habitats to recharge ponds and project facilities will result in a loss of Swainson’s hawk and white-tailed kite foraging habitat.

- Vernal pool fairy shrimp may be present in the seasonal wetlands in the South Reclamation Area. Conversion of the vernal pool grassland habitats to recharge ponds and project facilities could result in a take of vernal pool fairy shrimp, if they are in fact present. Protocol-level surveys would be needed to determine if the seasonal wetlands are occupied by vernal pool fairy shrimp.

- Because there is a documented California tiger salamander breeding pond approximately 1,200 feet northwest of the proposed North Reclamation Area, this species may be present in grassland habitats in and adjacent to some of the project components. As this species can traverse over a mile from breeding ponds to where it lives underground in small burrows and cracks, this species could occur throughout much of the project site. California tiger salamander may also potentially breed in some of the seasonal wetlands in the South Reclamation Area. Ground disturbance, particularly excavation, could result in take of California tiger salamander.

- Overall, the project will contribute to a cumulative loss of Open Space and associated biological resource values and may result in take of special-status species or species protected by MBTA. FGCC, or other laws and regulations. With the exception of the South Reclamation Area, mitigation for the loss of Open Space and authorization for take for each of the infrastructure improvements covered by the Master Plan would be best accomplished through participation in the HCP (SJCOG, 2000).

- Participation in the HCP appears cost-prohibitive for the South Reclamation Area. Permitting the fill of the seasonal wetlands the South Reclamation Area also appears cost-prohibitive, primarily due to the cost of compensatory mitigation. Further analysis of the South

Reclamation Area, including completing a comprehensive wetland delineation to current standards and conducting protocol-level survey for vernal pool fairy shrimp is recommended to better assess the feasibility of using this area for reclamation.

- Standard Take Avoidance measures outlined in the HCP for nesting Swainson's hawks, white-tailed kite will likely be required. These will include pre-construction surveys for nesting Swainson's hawks within 0.5 miles of the site for construction activities between March 1 and September 15, and pre-construction surveys for white-tailed kite for construction activities between February 15 and September 15. If active nests are found, temporal restrictions on construction as outlined in the HCP will be required.

- A focused biological assessment by a qualified biologist is recommended prior to implementation of each of the infrastructure improvements covered by the Master Plan. In the event a project does not seek coverage under the HCP, consultation with USFWS and CDFW is recommended to determine if permits and take authorization is needed.

- Trees and grasslands in or near each Master Plan infrastructure improvement project site could be used by birds protected by the MBTA and/or FGCC. If vegetation removal or construction commences during the general avian nesting season (March 1 through July 31), a pre-construction survey for all species of nesting birds is recommended. If active nests are found, work in the vicinity of the nests should be delayed until the young fledge.

- The site is not within designated critical habitat for any federally listed species.

We hope this information is useful. Please call me at (209) 745-1159 with any questions.

Sincerely,

Diane S. Moore, M.S.
Principal Biologist

References and Literature Consulted

ACOE (U.S. Army Corps of Engineers). 1987. Technical Report Y87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MI.

ACOE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. U.S. Army Engineer Research and Development Center, Vicksburg, MS. September.

CDFG (California Department of Fish and Game). 1994. Staff Report regarding Mitigation for Impacts to Swainson's Hawks (*Buteo Swainsoni*) in the Central Valley of California. November.

CDFG. 2012. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Wildlife, Sacramento, California. March 7.

CNDDB (California Natural Diversity Database). 2022. California Department of Fish and Wildlife's Natural Heritage Program, Sacramento, California.

California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website http://www.rareplants.cnps.org

National Oceanic and Atmospheric Administration (NOAA). 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Final Rule. Federal Register 70 (170): 52488-52585. September 2, 2005.

Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento. California.
SWHTAC (Swainson's Hawk Technical Advisory Committee). 2000. Determining a Project's Potential for Impacting Swainson's Hawks. Prepared by the Swainson's Hawk Technical Advisory Committee, a non-profit organization.

USFWS (United States Fish and Wildlife Service). 1980. Part II, Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17. Listing the Valley Elderberry Longhorn Beetle as a Threatened Species with Critical Habitat. Federal Register 45 No. 155, pp. 52803-52807, August 8.

USFWS. 1994. Part II, Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17. Endangered and Threatened Wildlife and Plants. Final Critical Habitat for the Delta Smelt (*Hypomesus transpacificus*). Federal Register Vol. 59, No. 242, pp. 65256 – 65279. December 19.

USFWS. 2005a. Part II, Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule. Federal Register Vol. 70, No. 162, pp. 49390 – 49458. August 23.

USFWS. 2005b. Part II, Department of the Interior, Fish and Wildlife Service, 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation and Economic Exclusions from August 2003 Final Designation, Final Rule. Federal Register Vol. 70, No. 154. August 11.

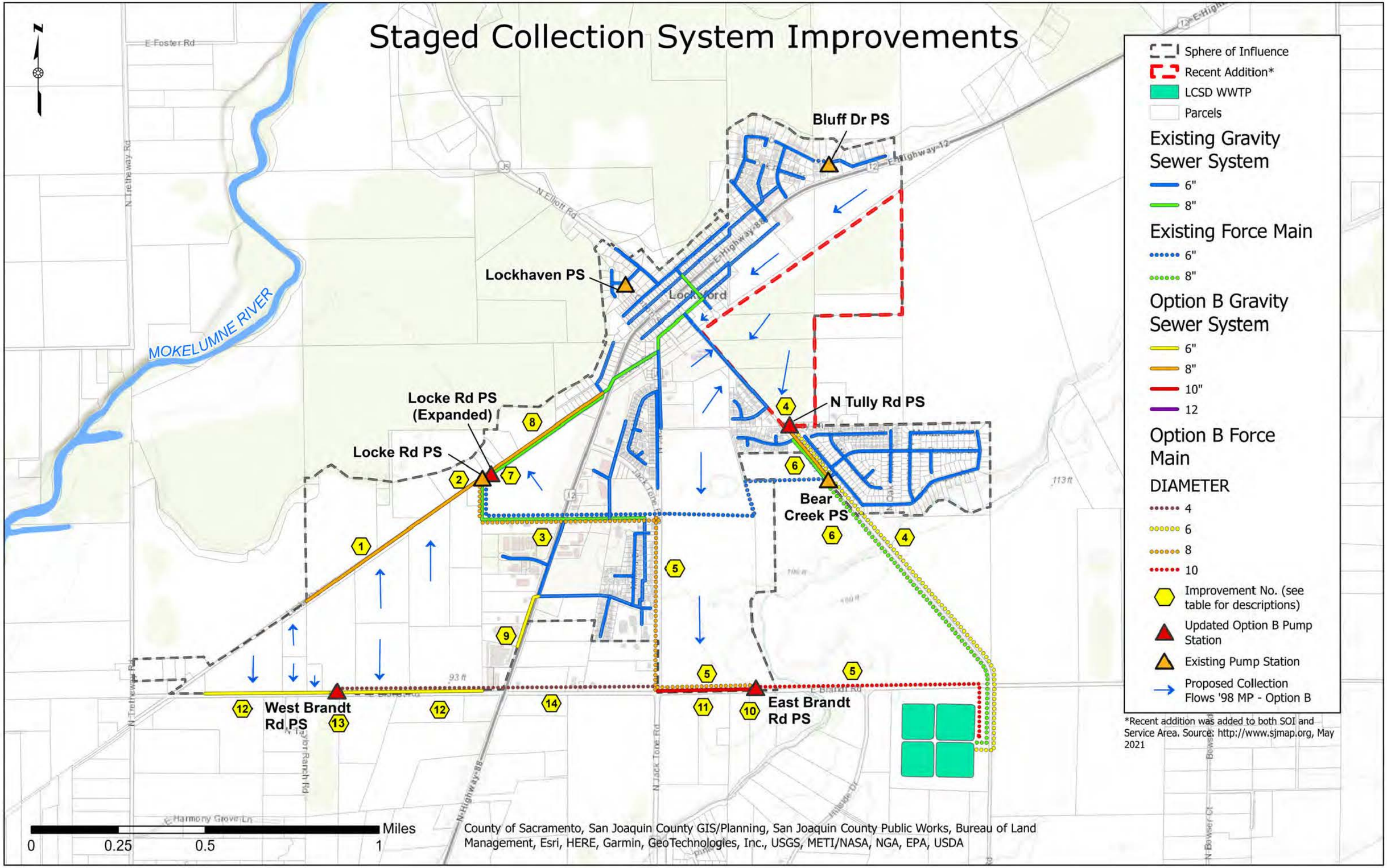
USFWS. 2006a. Part II, Department of the Interior, Fish and Wildlife Service. 50 CFR Part 17: Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for California Red-Legged Frog, and Special Rule Exemption Associated with Final Listing for Existing Routine Ranching Activities, Final Rule. Federal Register Vol. 71, No. 71, April 13.

USFWS. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28pp.

Attachment A

Project Maps

Staged Collection System Improvements



Staged Wastewater Treatment and Disposal Facilities

N

Candidate Recharge Pond Sites
LCSD WWTP & Remote Storage
Existing LCSD Disposal Lands
Waterways
Wetlands
Historic WWTP Phase 3a
Reclamation Area 2 Phase 2
RW Treatment Facility
Parcel Boundary

Conveyance

Existing Conveyance
Effluent Storage Return Piping
Phase 2
Phase 3A
Roadways
Well

Well 4
Well 2
Well 5
Well 3
Historic WWTP Site
Reclamation Area 2

ELLIOTT RD
LOCKE RD
STATE ROUTE 12 & 88
BEAR CREEK
TULLY RD
BRANDT RD
JACK TONE RD
HILLSIDE DR
BOWSER RD
SARGENT RD
Rockford
Bear Creek
Paddy Creek

0 0.25 0.5 1 Miles

Attachment B

CNDDB Summary Report and Exhibits

& USFWS IPaC Trust Report

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Lockeford (3812122) OR Waterloo (3812112) OR Clements (3812121) OR Linden (3812111))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Castilleja campestris var. succulenta succulent owl's-clover	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2T3	S3	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3	SSC

Record Count: 20

Northern Hardpan Vernal Pool
Northern Hardpan Vernal Pool
Boggs Lake hedge-hyssop
Boggs Lake hedge-hyssop
dwarf downingia
legenere
Northern Hardpan Vernal Pool
Northern Hardpan Vernal Pool
succulent owl's-clover
Northern Hardpan Vernal Pool
legenere
legenere
legenere
Hoover's calycadenia
legenere
legenere
Project Site
Sanford's arrowhead
Delta button-celery
Northern Hardpan Vernal Pool
Northern Hardpan Vernal Pool

GALT
CLAY
GOOSE CREEK
IONE
LODI NORTH
LOCKEFORD
CLEMENTS
WALLACE
LODI SOUTH
WATERLOO
LINDEN
VALLEY SPRINGS SW
CAMPO DE LOS FRANCESES
STOCKTON WEST
STOCKTON EAST
PETERS
FARMINGTON

Lockeford
Lodi
Victor
Clements
Dogtown
Waterloo
Linden
Peters
Orford
Bellota
Beacon

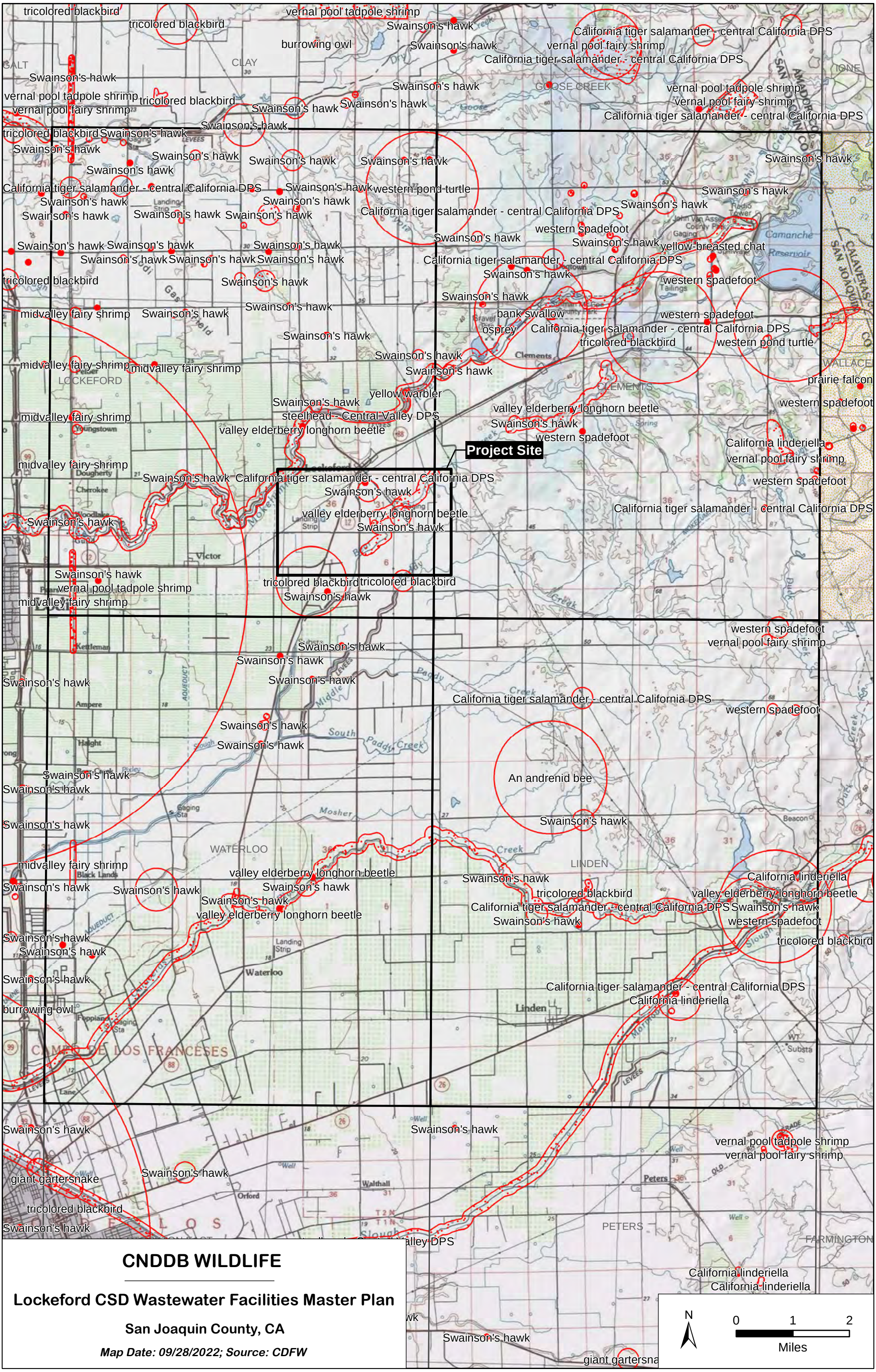
CNDDB PLANT

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

Map Date: 09/28/2022; Source: CDFW

N
0 1 2
Miles



CNDDB WILDLIFE

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

Map Date: 09/28/2022; Source: CDFW

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Riparian Brush Rabbit Sylvilagus bachmani riparius Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6189	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/7850

Crustaceans

NAME	STATUS

Conservancy Fairy Shrimp Branchinecta conservatio — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8246

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2246

Flowering Plants

NAME	STATUS

Fleshy Owl's-clover Castilleja campestris ssp. succulenta — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8095

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

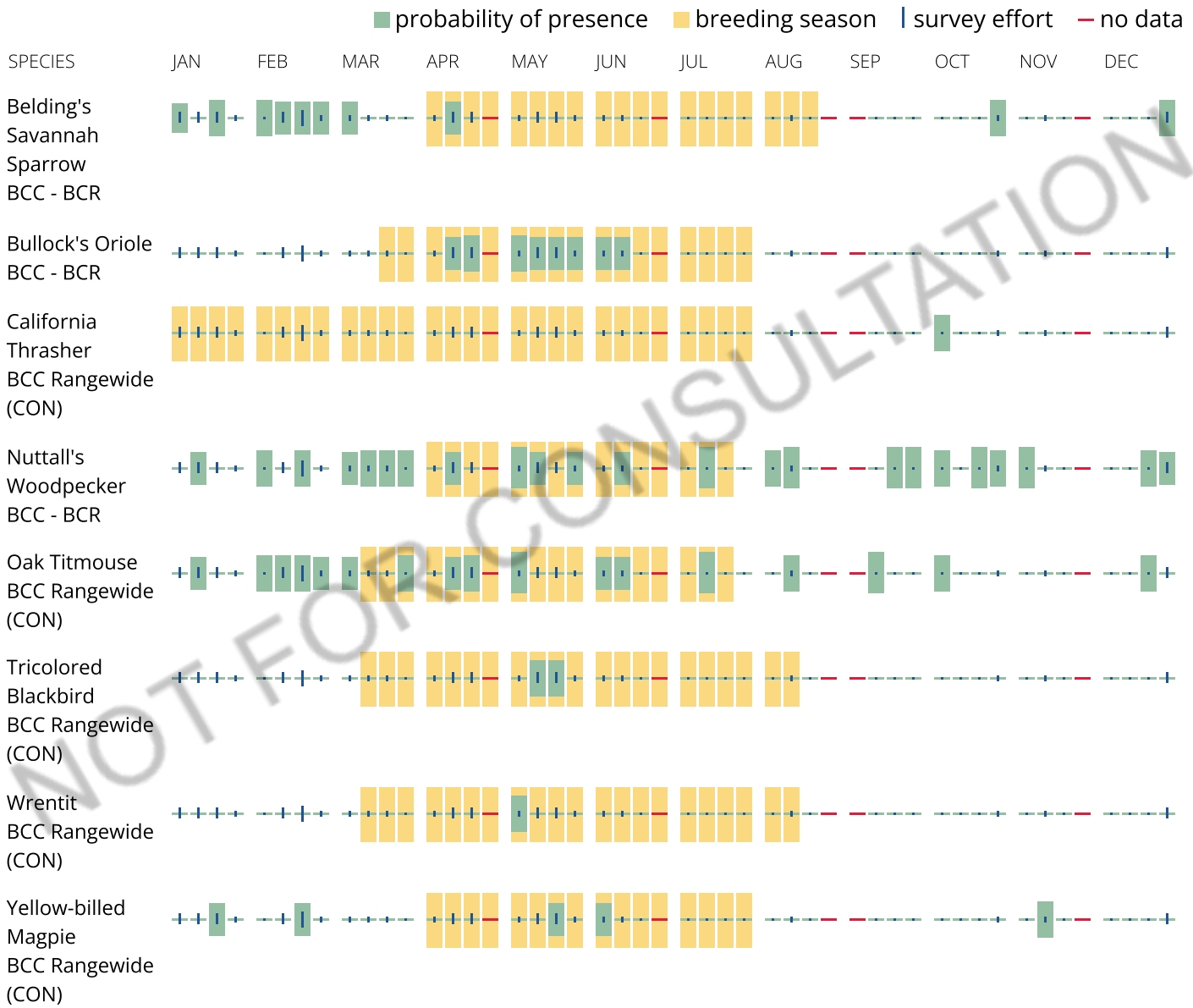
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure.

To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment C

Photographs

North Tully Road, looking northwest from just north of the bridge over Bear Creek; 06/23/22.

East Brandt Road, looking west from just west of the proposed western pump station.

Locke Road at the north part of the project site, looking southwest from just southwest of Highway 88; 06/23/22.

Pipeline alignment along Locke Road, looking southwest; 06/23/22. Land use south of this section of Locke Road is primarily industrial.

Disked grassland field with scattered oaks, looking west from Highway 88; 06/23/22.

North Jack Tone Road, looking south from just south of Dawson Road; 06/23/22.

Bridge over Bear Creek, looking west along the north edge of East Brandt Road; 06/23/22. A proposed force main will need to cross Bear Creek.

Second bridge over Bear Creek, looking northwest along the west edge of North Tully Road; 06/23/22. A proposed force main will need to cross Bear Creek.

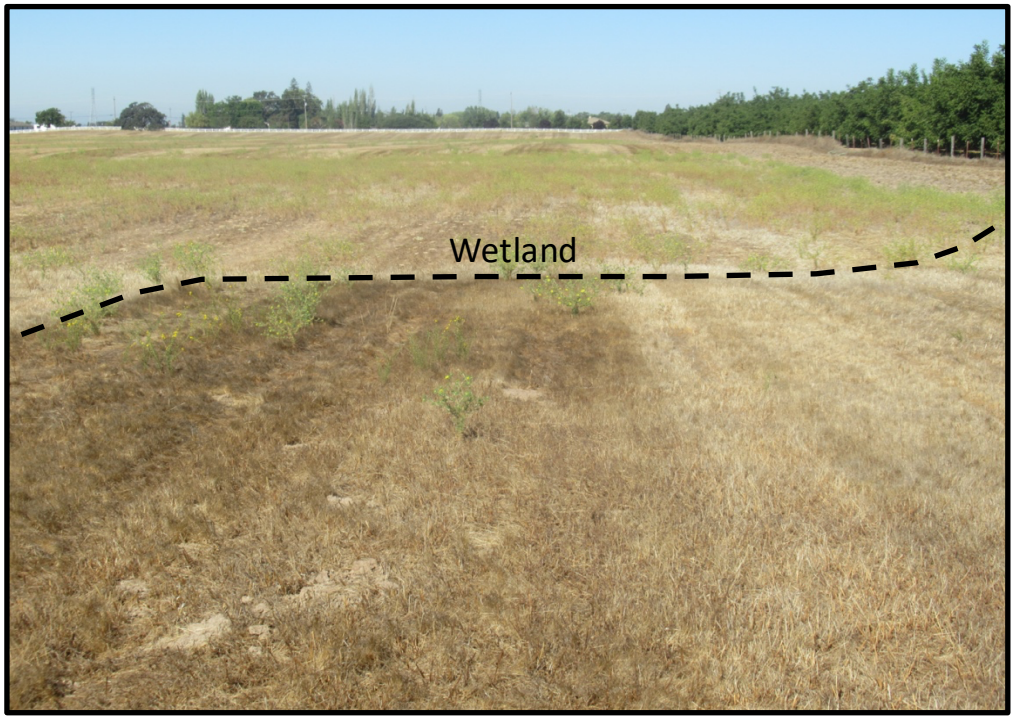
Pump station just south of Locke Road, looking south; 06/23/22. This pump station is proposed for expansion.

Approximate location of the proposed western pump station along East Brandt Road, looking northwest; 06/23/22.

Approximate location of the proposed eastern pump station just north of East Brandt Road, looking north; 06/23/22.

Approximate location of the proposed northern pump station along North Tully Road, looking north; 06/23/22.

Open field east of Tully Road where a recharge pond is proposed, looking northeast from the southwest corner of the field; 06/23/22. The site was recently farmed in a hay crop, which was harvested prior to the field survey.



Seasonal wetland in the northwest corner of the proposed recharge pond, looking west from the east edge of the seasonal wetland; 08/19/22. There is an estimated 2.9+/- acres of wetlands in the southern recharge pond site.

Disked grassland field where a second recharge pond is proposed, looking north from the southwest part of this field; 06/23/22. This site was used in the past for wastewater treatment.

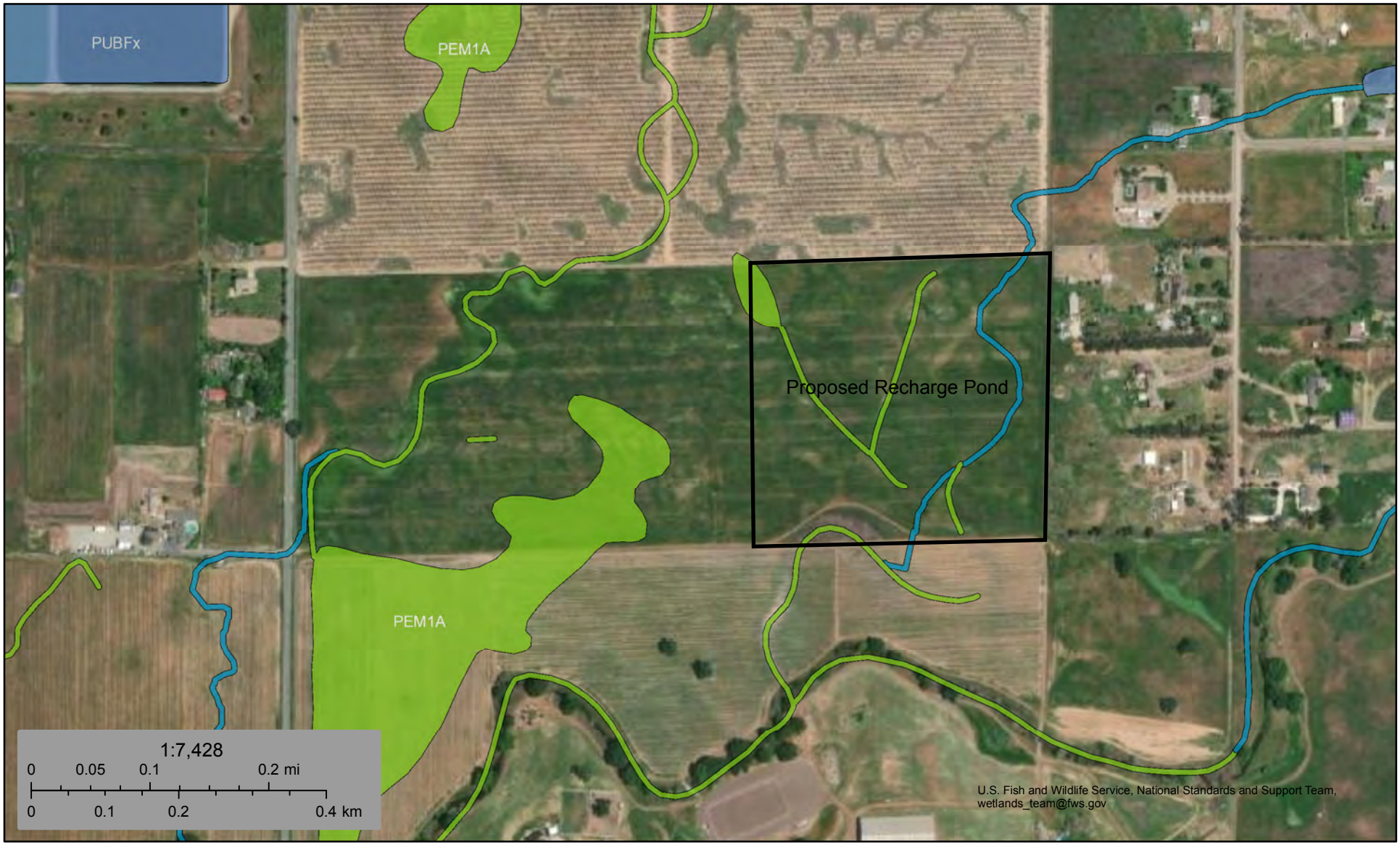
Bear Creek, looking northwest along its riparian corridor from the bridge over East Brandt Road; 06/23/22. The creek is relatively small and shaded, providing poor quality habitat for western pond turtle.

Appendix D

National Wetland Inventory Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Lockeford CSD WW Master Plan



October 3, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Appendix E

Designated Critical Habitat

Project Site

Steelhead

California tiger Salamander

Fleshy owl's-clover

Vernal pool fairy shrimp

CRITICAL HABITAT

Lockeford CSD Wastewater Facilities Master Plan

San Joaquin County, CA

Map Date: 09/28/2022; Source: USFWS; NOAA

N

0 1 2

Miles

Appendix F

San Joaquin County Multi-Species Habitat Conservation And Open Space Plan: Lockeford Community Compensation Map & 2023 Fee Schedule

COMMUNITY OF LOCKEFORD

SU-91-15
Diamond Bar
(Expires 12/08/2003)

LAND CATEGORY / PAY ZONES

CATEGORY A
EXEMPT
NO PAY ZONE

CATEGORY B
OTHER OPEN SPACES
PAY ZONE A

CATEGORY C
AG. HABITAT OPEN SPACES
PAY ZONE B (Agriculture)

CATEGORY D
NATURAL LANDS HABITAT
OPEN SPACES
PAY ZONE B (Natural)

CATEGORY E
VERNAL POOLS
PAY ZONE C

PLANNING AREA BOUNDARY

Community Outline
Parcel Outline
Existing Project

500 0 500 1000 1500 Feet

November 15, 2001 JK

San Joaquin County Geographic Information Systems
1810 East Hazelton Avenue, Stockton, CA 95205

SJCOG, Inc.

555 East Weber Avenue ● Stockton, CA 95202 ● (209) 235-0600 ● FAX (209) 235-0438

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)

2023 Updated Habitat Fees*

Habitat Type	Fee Per Acre
Multi-Purpose Open Space	$9,629
Natural	$19,255
Agriculture	$19,255
Vernal Pool - uplands	$75,320
Vernal Pool - wetted	$176,878

* Effective January 1, 2023 – December 31, 2023

2023 Endowment Fees with In-lieu Land**

Type of Preserve	*Enhancement Cost/acre*	*Land Management Cost/acre*	TOTAL PER ACRE ENDOWMENT
Agricultural Habitat Lands	$5,769.00	$769.97	$6,539
Natural Lands	$5,769.00	$769.97	$6,539
Vernal Pool Habitat			
Vernal Pool Grasslands	$14,491.00	$1,901.76	$16,393
Vernal Pool Wetted	$117,102.00	$1,864.45	$118,966

** Effective January 1, 2023 – December 31, 2023 in lieu of fees to be used as the endowment for the dedicated land preserves (Category B + C) based on impacted acres.

VELB Mitigation

A special fee category shall apply when removal of the Valley Elderberry Long-horned Beatle (VELB) habitat of elderberry shrubs occurs. The fee shall be paid to SJCOG, Inc. or a VELB mitigation bank approved by the Permitting Agencies. The current fee, as established in the VELB Conservation Fund Account managed by the Center for Natural Lands Management, and approved by the USFWS, is $1,800 per VELB Unit (one unit= one stem over 1" in diameter at ground level which is removed). Fees shall be established by the JPA during preconstruction surveys (i.e., counts of stems to be removed with and without exit holes shall be completed during preconstruction surveys) and shall be paid to the JPA prior to ground disturbance or stem removal, whichever comes first.

APPENDIX C
CULTURAL RESOURCES REPORT

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

July 8, 2022

Dr. Brian Ludwig
Solano Archaeological Services

Via Email to: Brian@solanoarchaeology.com

Re: Lockeford Wastewater Collection Improvements and Recycled Water Disposal Project, San Joaquin County

Dear Dr. Ludwig:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Ione Band of Miwok Indians on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological 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. Please contact all of those listed; if they cannot supply information, they may 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: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

P.O. Box 367
Elmira, CA 95625

707-718-1416 ▲ Fax 707-451-4775
www.solanoarchaeology.com

CULTURAL RESOURCES CONSTRAINTS ANALYSIS

Date: June 14, 2022

To: BaseCamp Environmental, Inc.

From: Solano Archaeological Services, LLC

Subject: Lockeford Wastewater Collection Improvements and Recycled Water Disposal Project, San Joaquin County, California

This technical memorandum prepared by Solano Archaeological Services, LLC (SAS) summarizes the preliminary records search, archival research, and Native American Heritage Commission (NAHC) Sacred Lands File (SLF) database review for the Lockeford Community Service District's (LCSD) proposed Lockeford Wastewater Collection Improvements and Recycled Water Disposal Project (the "Project") in the town of Lockeford, San Joaquin County, California (Attachment A, Figure 1). SAS understands that the LCSD is currently assessing the feasibility of constructing a new recycled water pump station facility, associated pipelines, and two reclamation areas within the LCSD service area. This memorandum is for informational and planning purposes only and does not provide Project-based recommendations or resource evaluations per federal, state, or local environmental regulatory compliance guidelines.

PROJECT LOCATION

The project area encompasses a total of approximately 172.19 acres (ac.) consisting of the proposed new recycled water pump station facility, two treated wastewater distribution areas, and about 8.5 miles (mi.) of pipeline corridor with a 200-foot-wide record search corridor. The project area is situated on the U.S. Geological Survey (USGS) *Lockeford,* and *Clements, California* topographic 7.5-minute quadrangles, in Township 3 North, Range 7 East, sections 1, and 2, Township 3 North, Range 8 East, sections 5, and 6, Township 4 North, Range 7 East, sections 35, and 36, and Township 4 North, Range 8 East, sections 31, and 32 (Attachment A, Figures 2–3).

CULTURAL SETTING

Prehistoric Context

Archaeological data gathered over the past century has shown that humans have inhabited the state for at least the past 10,000–12,000 years. Due in part to the varied topography and climate of the state, technological adaptations to these disparate conditions vary greatly from region to region and over long periods of time. Although evolving environmental conditions can account for many technological changes over time, the effects of the inter-group exchange of material and non-material cultural elements was almost certainly an important factor affecting cultural development and variability throughout California. The basic aspects of these broad temporal and cultural periods are outlined below and are based in large part on the work of David Fredrickson (1973):

- The Paleo-Indian Period (10,000 BC to 6,000 BC) saw the first clearly demonstrated entry and spread of humans into California. Known sites are situated along shores of pluvial lakes and

typically exhibit implements likely used in hunting. A developed milling tool technology may also exist during this period and has been noted at some sites. The social units are thought to have been small, highly mobile and were not heavily dependent upon exchange of resources with exchange activities occurring on an ad-hoc, individual basis.

- The beginning of the *Lower Archaic Period* (6,000 BC to 3,000 BC) coincides with a middle Holocene climatic change. Generally drier conditions prevailed, and this brought about a reduction in the size and number of pluvial lakes that appear to have been so important in earlier land-use patterns. Subsistence appears to be focused on the consumption of plant foods over faunal resources and settlement appears to have been semi-sedentary. The *Middle Archaic Period* (3,000 BC to 1,000 BC) begins at the end of mid-Holocene and climatic conditions were similar to those of the present day. The material cultural changes noted in the archaeological record likely occurred at least in part as a response to shifting environmental factors. The economic base became more diversified and acorn-processing technology first appeared. The growth of sociopolitical complexity marks the *Upper Archaic Period* (1,000 BC to 500 AD) and the development of status distinctions based upon material wealth is well documented. Group-oriented religions emerged and may represent the origins of the Kuksu religious system at the end of the Period. There is greater complexity of exchange systems with evidence of regular, sustained exchanges between groups.

- Several technological and social changes distinguish the *Emergent Period* (500 AD to 1800 AD). The bow and arrow were introduced, ultimately replacing the dart and atlatl which were employed at least as early as the Lower Archaic Period. Territorial boundaries between groups became well established and settlement patterns were highly sedentary. It was during the latter years of this period that large scale European settlement began to greatly impact traditional Native lifeways.

Ethnographic Setting

Ethnographically, the Northern Valley Yokuts occupied the project area and vicinity within a larger traditional territory including lands on either side of the San Joaquin River from the Sacramento-San Joaquin Delta to south of Mendota. The Diablo Range probably marked their western boundary (Wallace 1978:462) while the eastern extent would have lain along the Sierra Nevada foothills. Milliken (1997) places the *Yatchicumne* Yokuts group in the area now encompassed by the City of Stockton, and the *Passime* group in the French Camp and Duck Creek Slough areas.

Occupation of the northern parts of the range by the Yokuts may be fairly recent with linguistic evidence suggesting an earlier Miwok occupation. The Yokuts gradually expanded their lands northward and clearly occupied the project area and vicinity during the Spanish colonial period, as evidenced by mixed assemblages of historic-era and prehistoric artifacts on archaeological sites. The late prehistoric Yokuts may have been the largest ethnic group in pre-contact California and were organized into at least 11 small political units or tribes (Wallace 1978). Each tribe had a population of approximately 300 people, most of who lived within one principal settlement that usually had the same name as the political unit. Euro-American contact with the Northern Valley Yokuts began with infrequent excursions by Spanish explorers traveling through the Sacramento, and San Joaquin Valleys in the late 1700s to early 1800s. Cook (1955) attempted to identify San Joaquin Valley village and tribal groups based on early accounts from Spanish explorers and Mission records. Many Yokuts were lured or captured by missionaries and taken to Mission San Jose or Mission Santa Clara. A probable malaria epidemic in 1833 decimated the indigenous population, killing thousands. The influx of Europeans during the Gold Rush era further reduced the population because of disease and violent encounters with the miners. Though little or no gold at all was found in the Yokuts territory, miners passing through on their way to the rich diggings in

the Sierra Nevada foothills resulted in a significant degree of cultural upheaval. Former miners, who had seen the richness of the San Joaquin Valley on their way east to the diggings later returned to settle and farm the former Yokuts lands (Wallace 1978).

Presently, the Nototome/North Valley Yokut Tribe, Inc., represents the Northern Valley Yokuts in the Stockton region. The group is dedicated to the perpetuation of their cultural heritage which involves the preservation, documentation, and interpretation of their past including ethnographic, archaeological, and human remains.

Historic Overview

Early explorers visited the San Joaquin valley and the region surrounding present-day Lockeford with some frequency, though no missions or settlements were established until relatively late after European contact. Eighteenth-century explorers included Pedro Fages in 1772, Juan Bautista de Anza in 1776, and Francisco Eliza in 1793. Mission reconnaissance expeditions were led by Gabriel Moraga in 1806 and 1808, Father Ramon Abella in 1811, Jose Antonio Sanchez in 1811, and Father Narciso Duran in 1817 though no missions were ever established in the Central Valley. Jedediah Strong Smith was most likely the first American to traverse the San Joaquin Valley when he opened the Sacramento Trail in the late 1820s. He reported back to the Hudson's Bay Company that founded the settlement of French Camp south of present-day Stockton in 1828 (Hoover et al. 2002).

Throughout the Spanish and Mexican periods, San Joaquin County remained largely unsettled. Following the Gold Rush, settlement of the Lockeford area increased as the agricultural potential of the region was recognized and railroad development throughout the area provided direct access. When California gained statehood in 1850, San Joaquin was established as one of the original counties. Although the early San Joaquin Valley economy was focused on cattle-raising and dry farming, by the early 20th century, irrigation had replaced dry farming and the region emerged as a leader in the agricultural and dairy industry.

Lockeford

The town of Lockeford is located in Elliott Township which laid out three years after the formation of San Joaquin County. Lockeford was named for the farm and livestock ranch of Dr. Dean J. Locke, born in New Hampshire in 1823. Locke attended Harvard Medical School, and came to California in 1849 as the surgeon of the Boston and Newton Joint Stock Association. After practicing medicine in Sacramento and engaging in mining at Mississippi Bar on the American River with his brother George for a few months, the brothers came to the Mokelumne River in December of 1850, where their brother Elmer had already settled (Hoover et al. 2002:355; Thompson & West 1879:125).

The town of Lockeford was laid out in June of 1862, and platted by S. P. Sabin, a blacksmith who came to the place in 1860. In 1860 a wagon shop was built by W.D. Read, and other buildings quickly followed. By 1879, when Thompson & West published their history of San Joaquin County, the main street of Lockeford was neatly laid out with commercial, residential, and public buildings. As the town grew, Lockeford developed into a transportation hub for eastern San Joaquin County, with access provided by trails, roads, river, and railroad. The earliest roads were developed from trails established by miners in the earliest years of the Gold Rush on their way to the mines in Amador and Calaveras counties from the head of navigation at Stockton.

ARCHIVAL RESEARCH

On May 12th, 2022, The Central California Information Center (CCIC) of the California Historical Resources Information System forwarded the results of a record search for the project area (CCIC File No. 12187L). The CCIC also provided the results of a second record search on June 9th, 2022, for minor

revisions to the project area (CCIC File No. 12207L). For both searches, the CCIC archives were reviewed for information on previously known or recorded cultural resources within a 100-ft. buffer of the project area boundaries. This research included, but was not necessarily restricted to a review of the following sources:

- *National Register of Historic Places*;
- *California Register of Historic Places*;
- *California Historical Landmarks* (California Office of Historic Preservation);
- *California Points of Historical Interest* (California Office of Historic Preservation);
- *California Inventory of Historic Resources.*

The CCIC record searches demonstrated that two previously documented historic-era sites consisting of a segment of the Union Pacific Railroad grade (P-32-00002), and a mid-20th century winery (P-39-004166) had been recorded in the project area. An additional resource, the circa 1860 Harmony Grove Methodist Church (P-39-000516) had been documented outside the project area but within the 100-ft. search area. Given the narrow confines of much of the Project alignment, it is unlikely that any of these resources would be impacted.

HISTORIC MAP RESEARCH

To supplement the CCIC record search, SAS conducted a sample review of historic USGS topographic quadrangle maps, and General Land Office (GLO) plat maps that show early developments that occurred within and near the project area. This research provided information on patterns of land use in and near the project area and allowed for the identification of any archaeologically sensitive areas that could be affected by the proposed Project.

The 1855 GLO plat of Township 4 North, Range 8 East, sections 31, and 32 does not show any developments in the area with the exception of an un-named east-west road alignment that does not conform to any present-day routes. Similarly, another un-named north-south road is depicted in sections 5, and 6 on the 1855 plat of Township 3 North, Range 8 East which also does not align with any current-day roadways. However, two "Arroyo(s)" are depicted extending from the southwest to the northeast in sections 5, and 6 which probably represent the channels of Bear Creek. Roads are also shown on the 1859 plat of Township 4 North, Range 7 East, sections 35, and 36 including the "Upper Road from Stockton to Sacramento" (present-day Locke Road), and indications of possible land ownership (e.g., an undefined area noted as "Epperly's), a "brush fence", and a "bluff" adjacent to and to the north of Locke Road in Section 35.

Topographic mapping dating to as early as 1908 indicates that while the town of Locke itself saw significant growth during the early 20th century, the area surrounding the town was only slowly and sporadically developed. At the northwest intersection of Locke Road, and Brandt Road, a cemetery is shown immediately adjacent to and west of the railroad grade and the Project corridor. This is also the location of circa 1860 Harmony Grove Methodist Church. Other present-day road alignments, the route of the Union Pacific Railroad, and occasional buildings are depicted within and in the vicinity of the road alignments comprising parts of the project area. These remain widely-spaced throughout the 20th century although gradually increasing density can be seen in general area on topographic mapping dating to 1939, 1942, 1954, 1958, and through the 1960s and early 1970s. Regardless of the relatively early nature of many of the developments within and adjacent to the project area, given the narrow confines of much of the Project footprint, it is unlikely that any of these potential resource locations would be significantly impacted.

NATIVE AMERICAN HERITAGE COMMISSION SACRED LAND FILE REVIEW

On May 10th, 2022, SAS emailed a letter to the NAHC requesting a search of the SLF database for the project area. As of this analysis, the NAHC has yet to replay but when the SLF search results are provided, SAS will prepare an addendum to this report as appropriate

SUMMARY

- The CCIC record searches identified two historic-era cultural resources, a winery building, and a railroad grade, within the project area and one additional historic-era site, the circa 1860 Harmony Grove church, within 100 ft. of the Project boundary.
- Historic map reviews show that widely spaced but significant development occurred adjacent to and within portions of the project area during the late 1800s and into the 20th century.
- Portions of the project area at Bear Creek and near the Mokelumne River could be sensitive for exhibiting traces of early Native American activities and occupation.
- NAHC SLF search remains to be completed but when the results are made available, SAS will provide an addendum to this constraints analysis.

CULTURAL RESOURCES SENSITIVITY ASSESSMENT

- *Historic-era Resources* – Archival research indicates that two historic-period resources are present within the project area but neither would be impacted by Project activities. Historic map research indicates other developments took place within or immediately adjacent to the project area alignments since the mid-19th century. However, much of the Project is proposed to be constructed in narrow corridors within or adjacent to roadways where few impacts would occur. Consequently, the possibility that significant impacts would occur to historic-period resources is considered low.

- *Prehistoric Resources* – Archival research indicates that no documented early Native American cultural resources are known to be present within or immediately adjacent to the project area. However, the channel of the Mokelumne River is located immediately north of some of the project area alignments, and other components directly intersect Bear Creek along Brandt Road, and Tully Road. These and other comparable perennial water sources are known to have been attractive areas for early Native American peoples. Consequently, the possibility that the proposed Project could impact presently undocumented prehistoric resources is considered high.

RECOMMENDATIONS

In the event that presently undocumented buried archaeological deposits are encountered during future Project-associated construction activities, work must cease within a 50-foot radius of the discovery. A qualified archaeologist must be retained to document the discovery, assess its significance, and recommend treatment. If human remains or any associated funerary artifacts are discovered during construction, all work must cease within the immediate vicinity of the discovery. In accordance with the California Health and Safety Code (Section 7050.5), the San Joaquin County Sheriff/Coroner must be contacted immediately. If the Coroner determines the remains to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will in turn appoint a Most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with the Project proponent/applicant and a qualified archaeologist to determine the proper treatment of the human remains and any associated funerary objects. Construction activities will not resume until either the human remains are exhumed, or the remains are avoided via project construction design change.

REFERENCES

Cook, Sherburne F.
1955 The Aboriginal Population of the San Joaquin Valley, California. Anthropological Records 16:31–80. University of California, Berkeley

Fredrickson, David A.
1973 Spatial and Cultural Units in Central California Archaeology. In Toward a New Taxonomic Framework for Central California Archaeology, essays by James A. Bennyhoff and David A. Fredrickson, edited by Richard E. Hughes, Contributions of the University of California Archaeological Research Facility No 52, Berkeley, CA.

Hoover, Mildred B., Eugene Rensch, Ethel Rensch, William Abeloe
2002 *Historic Spots in California*. Stanford University Press, Stanford, CA

Milliken, Randall
1997 Contact Period Ethnography of the Calaveras River Region. In: The Taylor's Bar Site (CA-CAL-1180/H): Archaeological and Ethnohistorical Investigations in Calaveras County, California, by Randall Milliken, William Bloomer, Susan Stratton, Jim Nelson, Denise Furlong, D. Craig Young Jr., Eric Wohlgemuth, Julia Costello, Pat Mikkelson, Tim Carpenter, and Deborah Jones. Submitted to Calaveras County Water District, San Andreas, CA

Thompson & West
1879 History of San Joaquin County. F.T. Gilbert, Oakland, CA

Wallace, William J.
1978 Northern Valley Yokuts. In *Handbook of North American Indians,* Vol. 8. Smithsonian Institution, Washington, D.C.

ATTACHMENT A

Figures

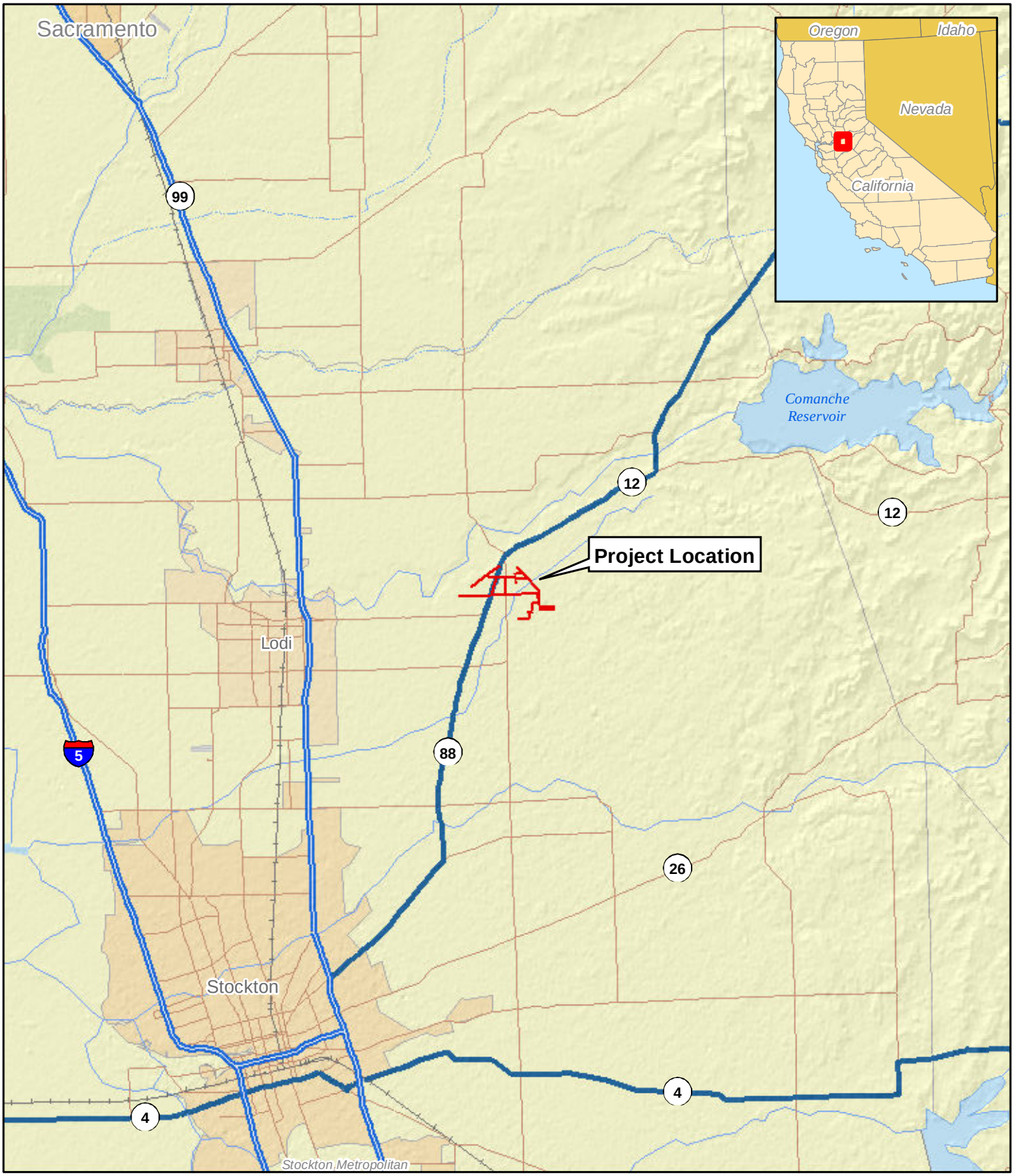


Figure 1. Project Vicinity Map.

Lockeford Wastewater Collection Improvements Project Area

1:250,000

0 3 Miles

0 6 Kilometers

Sources: *USA Base Map* [layer],*Data and Maps* [CD]. ESRI, 2006.

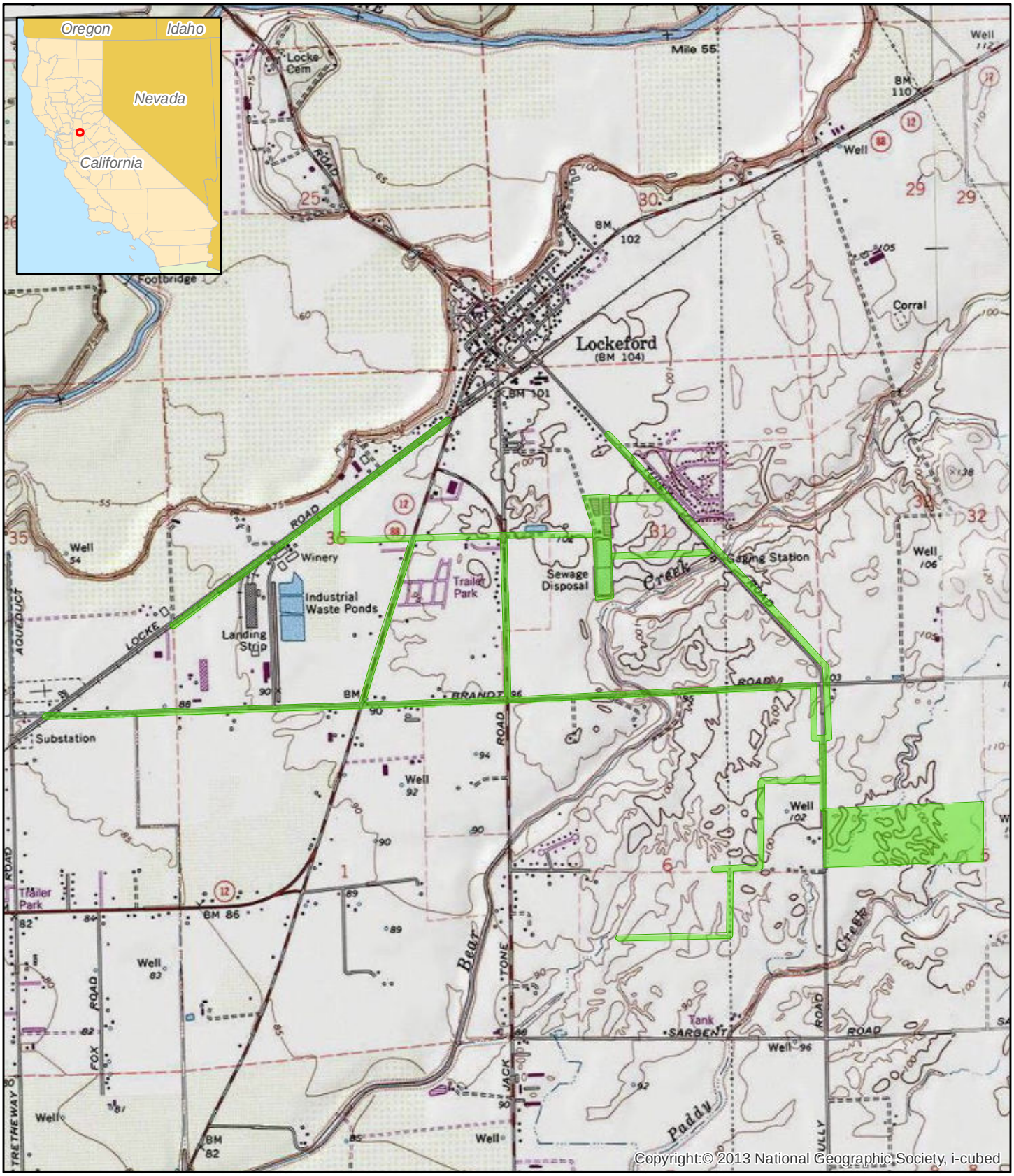


Figure 2. Project Location Map.

1:26,000

Lockeford Wastewater Collection Improvements Project Area

0.5 Miles

1 Kilometers

T03N, R07E, Secs 1, 2; T03N, R08E, Secs 5, 6;
T04N, R07E, Secs 35, 36; T04N, R08E, Secs 31, 32.
Clements (1972, pr 1978) and Lockeford (1980) 7.5' Series Quadrangles, USGS.

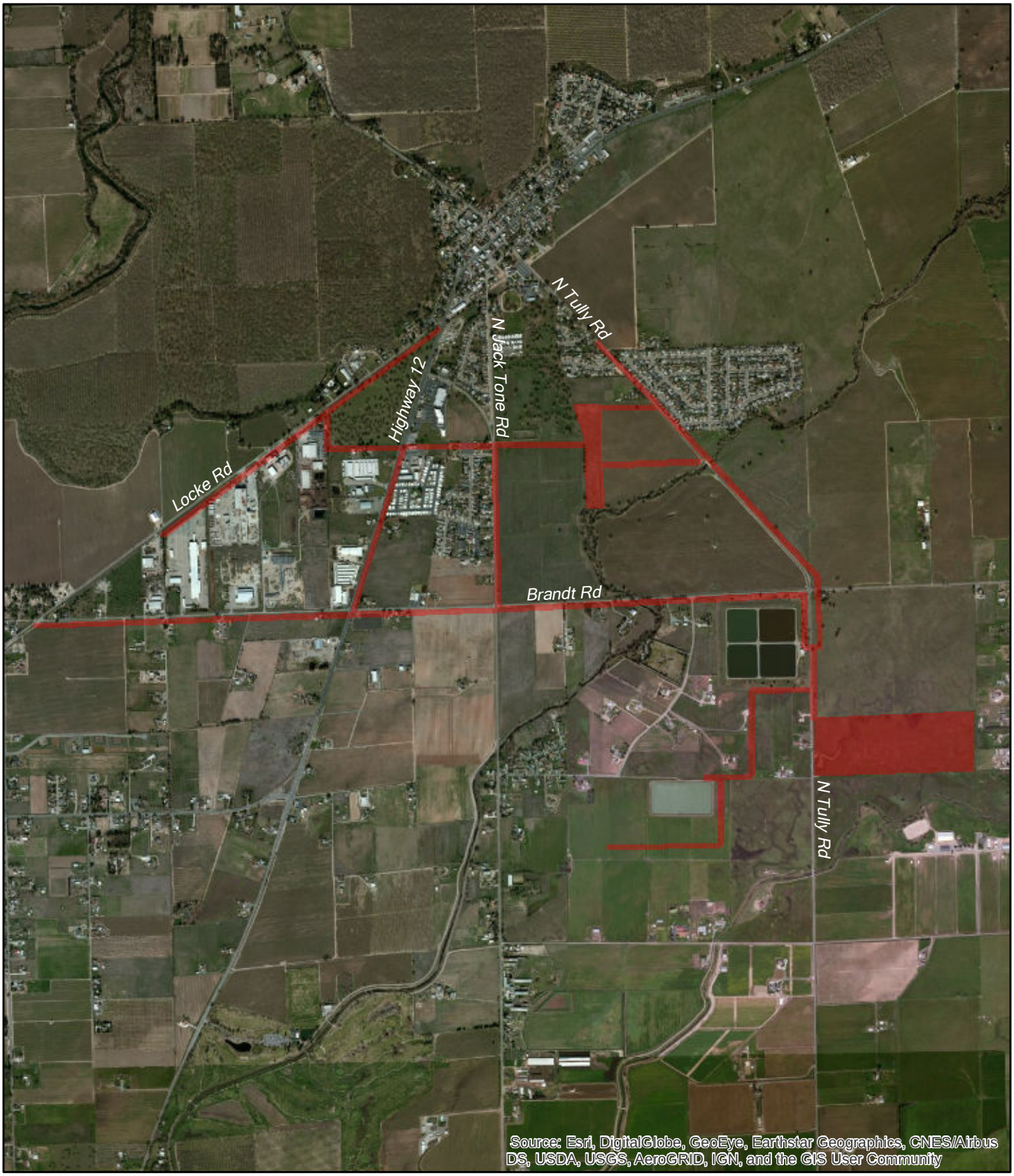


Figure 3. Project Area Map.

Lockeford Wastewater Collection Improvements Project Area

Total Acres: 172.19

1:26,000

0 1,000 Feet

0 500 Meters