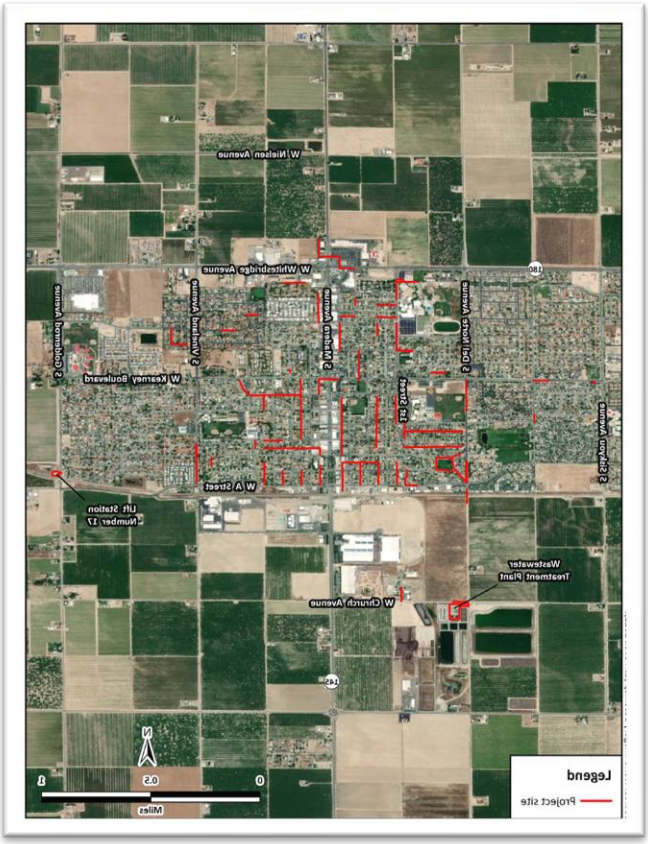

MITIGATED NEGATIVE DECLARATION

Kerman Sewer System Improvements Project

January 2023

PREPARED FOR:

City of Kerman
850 S. Madera Avenue
Kerman, CA 93630

PREPARED BY:

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

Initial Study/Mitigated Negative Declaration

Kerman Sewer System Improvements Project

Prepared for:

City of Kerman
850 S. Madera Avenue
Kerman, CA 93630
(559) 846-9386
Contact: Jesus R. Orozco, Community Development Director

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January 2023

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Chapter 1

INTRODUCTION

INTRODUCTION

1.1 Project Summary

This document is the Initial Study/Mitigated Negative Declaration describing the potential environmental effects of the proposed City of Kerman Sewer System Improvements Project (Project). The Project will involve replacing or repairing sewer pipelines at various locations throughout the City as well as various improvements to the City's existing wastewater treatment plant (WWTP). The proposed Project is more fully described in Chapter Two – Project Description.

The City of Kerman (City) will act as the Lead Agency for this Project pursuant to the *California Environmental Quality Act (CEQA)* and the *CEQA Guidelines.*

The Project is expected to be funded through a combination of City funds and Clean Water State Revolving Fund (CWSRF) funds administered through the California State Water Resources Control Board (Water Board). One requirement of CWSRF funding is that the City will be required to comply with the Water Board's environmental requirements including CEQA-Plus. CEQA-Plus involves additional environmental analysis of certain topics to include federal thresholds, rules and regulations (for topics such as air, biology, cultural, etc.). In addition to this Mitigated Negative Declaration, the City is preparing a separate Environmental Package for submittal to the Water Board which includes the CEQA-Plus analysis.

1.2 Document Format

This IS/MND contains five chapters, and appendices. Section 1, Introduction, provides an overview of the Project and the CEQA environmental documentation process. Chapter 2, Project Description, provides a detailed description of Project objectives and components. Chapter 3, Initial Study Checklist, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 4, Mitigation Monitoring and Reporting Program, provides the proposed mitigation measures,

completion timeline, and person/agency responsible for implementation and Chapter 5, List of Preparers, provides a list of key personnel involved in the preparation of the IS/MND.

Environmental impacts are separated into the following categories:

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less Than Significant After Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less Than Significant Impact. This category is identified when a project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (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.)

Regardless of the type of CEQA document that must be prepared, the basic purpose of the CEQA process as set forth in the CEQA Guidelines Section 15002(a) is to:

(1) Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

According to Section 15070(b), a Mitigated Negative Declaration is appropriate if it is determined that:

(1) Revisions in the project plans or proposals made by or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

The Initial Study contained in Section Three of this document has determined that with mitigation measures and features incorporated into the Project design and operation, the environmental impacts are less than significant and therefore a Mitigated Negative Declaration will be adopted.

Chapter 2

PROJECT DESCRIPTION

Project Description

2.1 Location

The City of Kerman is located in Fresno County, CA in the central portion of the San Joaquin Valley, just south of SR 180 and is bisected by SR 145. See Figure 1 – Regional Location Map and Figure 2 – Project Site Map for Project locations. The proposed Project consists of approximately 5.3 discontinuous miles of sewer pipeline throughout the City of Kerman and miscellaneous improvements and repairs to the City's existing Wastewater Treatment Plant (WWTP) (See Section 2.4 – Project Description for more detailed information).

2.2 Setting and Surrounding Land Use

The Project site is synonymous with the City of Kerman consists of paved streets, residential neighborhoods, commercial areas, public areas (schools, parks, etc.), paved parking lots, undeveloped portions of private property, and dirt road rights-of way. The Project work areas are bounded by West Nielsen Avenue to the north, South Goldenrod Avenue to the east, West Church Avenue to the south, and South Siskiyou Avenue to the west. The Project site also includes the existing WWTP that is located south of Church Avenue on the Del Norte Avenue alignment.

The proposed Project involves replacing 2,268 linear feet (LF) of gravity sewer mains with new sewer pipes using the conventional dig and replace construction method; rehabilitating 25,579 LF of gravity sewer mains using the trenchless cured-in-place pipeline (CIPP) method; and miscellaneous repairs to the WWTP. See Section 2.4 – Project Description for more information. The Project area of potential effect (APE) is entirely within existing, previously disturbed ROWs.

Figure 1 – Regional Location Map

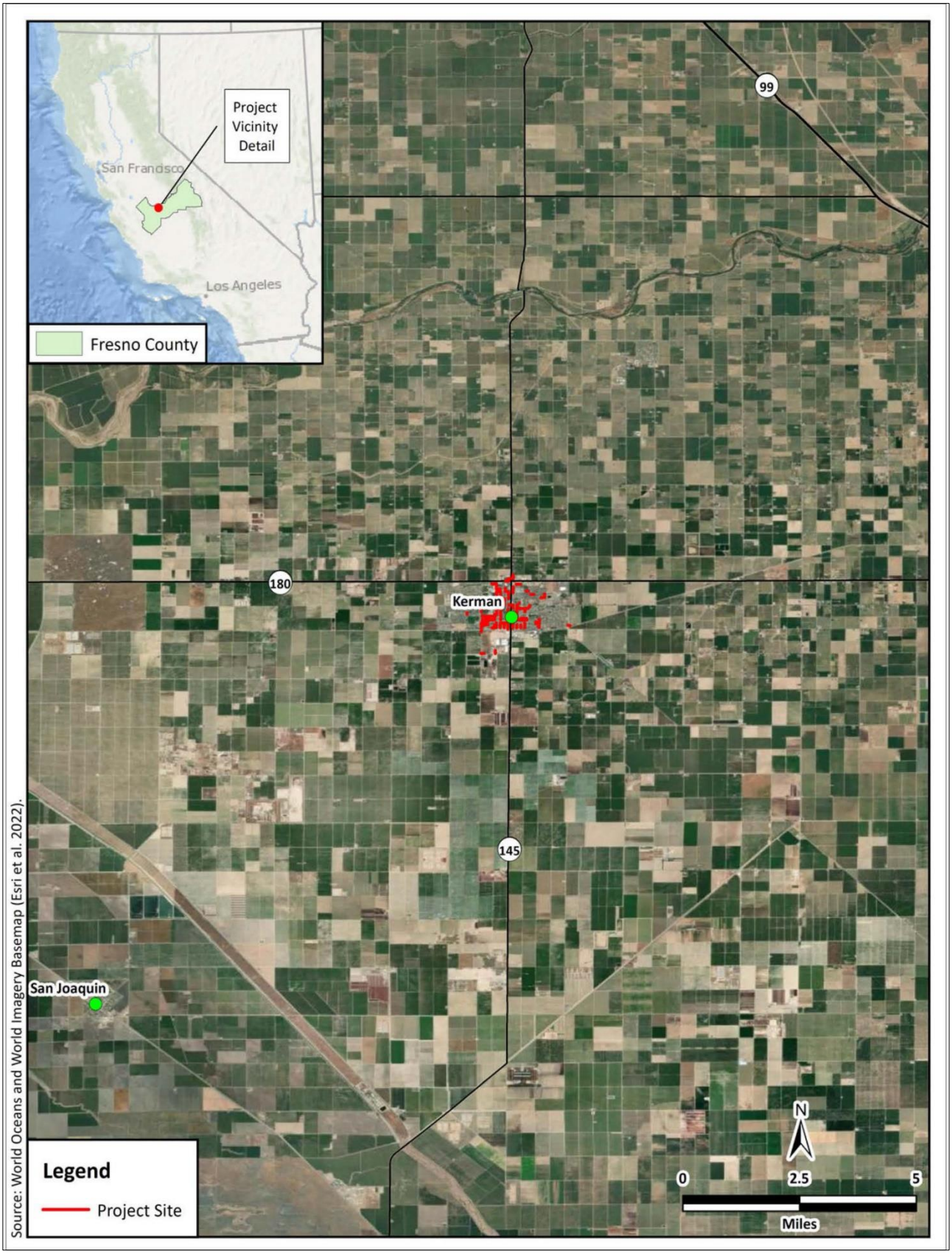
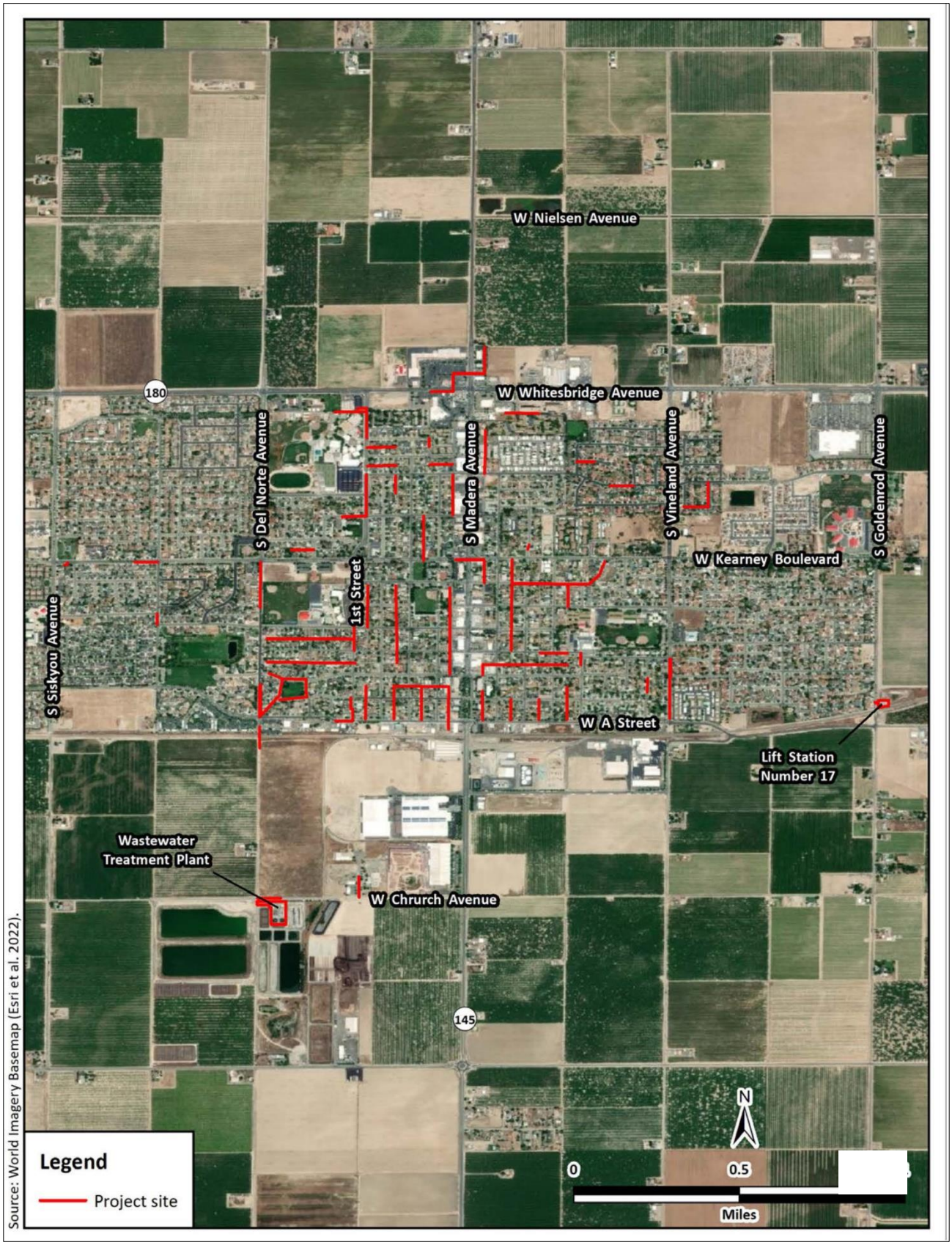


Figure 2 – Project Site Map



2.3 Project Background

The City owns and operates a City-wide sewer collection system and a WWTP under Waste Discharge Requirements (WDR) No. R5-2007-0115. The City provides sewer service to 3,611 connections and receives an average daily flow of approximately one million gallons per day (MGD).

The City's sewer collection system is aged and some of the older portions of the system experience frequent blockages, overflows and require cleaning or removal of roots. The physical condition of some of these sewer lines is believed to be very poor, likely beyond their life expectancy, and need to be replaced. Beyond the required maintenance and repair activities, there has not been any major replacement or rehabilitation of the City's sewer collection system to date.

The City's sewer collection system is aged and some of the older portions of the system experience frequent blockages, overflows and require cleaning or removal of roots. The physical condition of some of these sewer lines is believed to be very poor, likely beyond their life expectancy, and need to be replaced. Beyond the required maintenance and repair activities, there has not been any major replacement or rehabilitation of the City's sewer collection system to date.

A condition survey of the sewer collection system was conducted to document the system's existing condition, identify deficiencies, and estimate the useful life of the sewer mains. The current physical condition of the system's components was assessed through site-visits, discussion with City staff, and an comprehensive closed-circuit television (CCTV) inspection. As part of this preliminary engineering process, the City conducted a comprehensive CCTV inspection on the older portions of the sewer collection system.

The primary need for a sewer collection system improvement project is due to the significant deterioration of some portions of the sewer infrastructure. The City's maintenance staff responds to problems with the collection system such as back-ups and overflows/spills and spends a great deal of their time locating and/or repairing the system in response to emergency calls from the City's residents. According to the results of the CCTV inspection, approximately 22 percent of the sewer lines inspected require either replacement or rehabilitation.

2.4 Project Description

A Preliminary Engineering Report entitled "City of Kerman Sewer Collection System and Wastewater Treatment Plant Improvements" was prepared by AM Consulting Engineers in

September 2022 to address the needed improvements. Please refer to that document for specific project characteristics. A summary of Project activities is included herein.

Sewer Main Replacement and Rehabilitation

This Project will involve replacing or rehabilitating approximately 27,847 LF of existing gravity sewer mains within the City of Kerman. Sewer main improvements will consist of "in-kind" rehabilitation and replacements of the City's gravity sewer mains. In order to ensure structural integrity of the sewer system, conventional "open-trench" construction methods will be used to replace the sewer mains that display pipe deformations, broken pipes, or sags greater than 60 percent of the pipe diameter. Sewer main replacement will involve traditional "open-trench" construction methods on approximately 2,268 LF of sewer main. Sewer main rehabilitation will involve trenchless, cured-in-place-pipe (CIPP) construction methods on approximately 25,579 linear feet of sewer main. Using this method will reduce the amount of ground disturbance and limit the number of traffic and pedestrian detours needed to complete the Project.

Improvements to the Existing WWTP

In addition to the sewer collection system, several miscellaneous improvements and repairs are needed at the City's WWTP to improve treatment operations. A list of priority improvements and needed repairs to the City's WWTP are listed below:

- WWTP needs a plant water system for miscellaneous non-potable needs. Currently, the plant uses potable water for all plant needs including cleaning of treatment ponds, washdown of equipment, etc. Several thousand gallons of drinking water used in this manner for non-potable uses can be avoided due to the construction of a non-potable water system.
- The clarifier gearbox is old and needs to be rebuilt.
- The hoists in at the headworks are not safe to operate. The hoist system has been repaired several times in the past, but the hoist specialists have deemed them unrepairable and recommended replacement.
- Install new Turbo Blowers for the Biolac system and the digester. Turbo blowers have proven to provide 10-40% in energy savings over a typical multi-stage blower. As one of the biggest energy users of the plant, aeration system improvements are a prime target for energy conservation measures in extended aeration plants such as the Kerman WWTP.
- WWTP needs a Blower building to house the blower pumps. Blowers need to be placed in an enclosed structure with air filters to increase the useful life of the equipment. Currently Kerman WWTP blowers are housed in the open without any protection from dust and rain.

- Replace the old and failing screw press sludge feed pump, and a second pump for redundancy.
- Replace the old decant pump.
- Replace the pump in the septic receiving station and use the current pump for redundancy.
- Install flow meters on the RAS and WAS lines. Currently flows are estimated from pump runtimes and are not reliable.
- Replace the existing 10HP RAS/WAS pump with a 20HP pump and add a second 20 HP pump for redundancy. These pumps are used every day and there is currently no redundancy in operation.
- The existing 10HP pump is inadequate for Kerman's requirements and needs to be replaced.
- Install new DO sensors for the Biolac system and Digester. The old DO sensors frequently plug and show inaccurate DO levels. This could lead to overestimation of the aeration requirements and result in energy wastage, or underestimation and lead to incomplete treatment.
- Install new MLSS sensors for the Biolac system and Digester to ensure adequate level of treatment and maintain healthy sludge age in the treatment basins.
- Upgrade the SCADA system to show historic DO, pH, MLSS and flow trends to aid day-to-day decisions. Existing SCADA system does not show historic trends that are valuable in operational decision making.
- Install variable Frequency Drives (VFDs) on RAS/WAS pump. VFDs help run the pumps at their best efficiency point (BEP) and help realize significant energy cost savings.
- The screens from the existing Traveling Screen Unit are wet and unsanitary, which would require a replacement of the washer compactor.
- Install upgrades to Lift Station No.17, including wet well rehabilitation, repair of pump chain welds and electric wiring upgrades.

Project Schedule

Construction is expected to begin in March 2025 and will take approximately 12 months to complete.

2.5 Objectives

The primary objectives of the proposed Project are as follows:

- To provide adequate sewer services to its customers, by upgrading the existing sewer system infrastructure.
- To prevent system failures and potential contamination associated with deteriorated sewer pipelines.
- To operate the sewer distribution system and WWTP with the most cost-effective methods available that meet the City's overall system performance and regulatory compliance requirements.

2.6 Other Required Approvals

The proposed Project will include, but not be limited to, the following regulatory requirements:

- The adoption of a Mitigated Negative Declaration by the City of Kerman.
- Regional Water Quality Control Board approval.
- State Water Board approval

Chapter 3

IMPACT ANALYSIS

Initial Study Checklist

3.1 Environmental Checklist Form

Project title:

Kerman Sewer Improvements Project

Lead agency name and address:

City of Kerman
850 S. Madera Avenue
Kerman, CA 93630

Contact person and phone number:

Jesus R. Orozco, Community Development Director
(559) 846-9386

Project location:

See Section 2.1

Project sponsor's name/address:

City of Kerman

General plan designation:

Multiple, City-wide project

Zoning:

Multiple, City-wide project

Description of project:

See Section 2.3

Surrounding land uses/setting:

See Section 2.2

Other public agencies whose approval or consultation is required (e.g., permits, financing approval, participation agreements):

See Section 2.5

California Native American Tribal Consultation:

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun or is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

In accordance with Assembly Bill (AB) 52, potentially affected Tribes were formally notified of this Project and were given the opportunity to request consultation on the Project. The Native American Heritage Commission was contacted, requesting a contact list of applicable Native American Tribes, which was provided. Letters were provided to the listed Tribes, notifying them of the Project and requesting consultation, if desired. See Section 3.17 – Tribal Cultural Resources for more information.

3.2 Environmental Factors Potentially Affected

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

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

3.3 Determination

Based on 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.

Travis Crawford, AICP — Date

Environmental consultant to:

City of Kerman

I. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 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?	☐	☐	☐	☒

RESPONSES

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 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?

No Impact. The City of Kerman proposes improvements and upgrades to its existing sewer system infrastructure. These improvements consist of replacement or rehabilitation of approximately 5.3 (discontinuous) miles of sewer lines and other minor improvements to the WWTP (which will occur within the existing WWTP footprint). The majority of the work within the WWTP will be replacements of deteriorated components and will not be visually noticeable. Other new components installed at the WWTP will be visually similar in appearance to existing conditions at the WWTP.

The sewer pipeline Project work areas are bounded by West Nielsen Avenue to the north, South Goldenrod Avenue to the east, West Church Avenue to the south, and South Siskiyou Avenue to the west. Currently the Project Area consists of paved streets, residential neighborhoods, commercial areas, public areas (schools, parks, etc.), paved parking lots, undeveloped portions of private property, and dirt road rights-of way. Views of surrounding areas will not be substantially impacted by the Project, since the majority of the finished work will be below grade. As such, the proposed Project will not impede any scenic vistas.

Construction activities will occur over an 12-month period and will be visible from the adjacent residences, businesses, and roadsides; however, the construction activities will be temporary in nature and will not affect a scenic vista, as described above.

There are no state designated scenic highways within the vicinity of the proposed Project site.[1] The proposed Project would not damage any trees, rock outcroppings or historic buildings within a State scenic highway corridor.

Current sources of light in the Project area are from vehicles traveling along surrounding roads and residential lighting. No lighting will be associated with pipeline installation. Accordingly, the proposed Project would not create substantial new sources of light or glare. There will be ***no impact.***

Mitigation Measures: None are required.

[1] California Department of Transportation. California Scenic Highway Mapping System. Fresno County. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed October 2022.

II. AGRICULTURE AND FOREST RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

RESPONSES

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?

No Impact. The City of Kerman proposes improvements and upgrades to its existing sewer system infrastructure. These improvements consist of replacement or rehabilitation of approximately 5.3 (discontinuous) miles of sewer lines and other minor improvements to the WWTP (which will occur within the existing WWTP footprint).

The pipelines and associated pipeline infrastructure will largely occur within the existing road right of way and will be installed underground. The improvements to the WWTP will occur within the existing WWTP footprint. The Project does not have the potential to result in the conversion of farmland to non-agricultural uses or forestland uses to non-forestland because there is no such land being impacted by the Project. Areas within the City of Kerman are not currently utilized for agriculture. Additionally, the California Department of Conservation's Important Farmland Finder program considers the areas within the City to be Urban and Built-Up Land. The proposed Project does not include land under a Williamson Act Contract. No conversion of forestland, as defined under Public Resource Code or General Code, as referenced above, would occur as a result of the proposed Project.

The proposed Project includes new sewer pipelines, primarily within the existing right-of-way, and improvements to the existing WWTP within the existing WWTP footprint. All improvements will take place within an area that is built up with rural and urban uses. As such, the proposed Project does not have the potential to result in the conversion of Farmland to non-agricultural uses or forestland uses to non-forestland. There is ***no impact***.

Mitigation Measures: None are required.

III. AIR QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors or adversely affecting a substantial number of people)?	☐	☐	☒	☐

RESPONSES:

a. Conflict with or obstruct implementation of the applicable air quality plan?

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c. Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The San Joaquin Valley Air Basin (SJVAB) is designated nonattainment of state and federal health-based air quality standards for ozone and $PM_{2.5}$. The SJVAB is designated nonattainment of state PM_{10}.[2] To meet Federal Clean Air Act (CAA) requirements, the SJVAPCD has multiple air quality attainment plan (AQAP) documents, including:

- Extreme Ozone Attainment Demonstration Plan (EOADP) for attainment of the 1-hour ozone standard (2004);

[2] San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm. Accessed October 2022.

- 2007 Ozone Plan for attainment of the 8-hour ozone standard;
- 2007 PM_{10} Maintenance Plan and Request for Redesignation; and
- 2008 $PM_{2.5}$ Plan.

Because of the region's non-attainment status for ozone, $PM_{2.5}$, and PM_{10}, if the Project-generated emissions of either of the ozone precursor pollutants (ROG or NOx), PM_{10}, or $PM_{2.5}$ were to exceed the SJVAPCD's significance thresholds, then the Project uses would be considered to conflict with the attainment plans. In addition, if the Project uses were to result in a change in land use and corresponding increases in vehicle miles traveled, they may result in an increase in vehicle miles traveled that is unaccounted for in regional emissions inventories contained in regional air quality control plans.

As discussed below, predicted construction and operational emissions would not exceed the SJVAPCD's significance thresholds for ROG, NOx, PM_{10}, and $PM_{2.5}$. As a result, the Project uses would not conflict with emissions inventories contained in regional air quality attainment plans, and would not result in a significant contribution to the region's air quality non-attainment status. Additionally, the Project would comply with all applicable rules and regulations.

The nonattainment pollutants for the SJVAPCD are ozone, PM_{10} and $PM_{2.5}$. Therefore, the pollutants of concern for this impact are ozone precursors, regional PM_{10}, and $PM_{2.5}$. Ozone is a regional pollutant formed by chemical reaction in the atmosphere, and the Project's incremental increase in ozone precursor generation is used to determine the potential air quality impacts, as set forth in the GAMAQI. The annual significance thresholds to be used for the Project emissions are as follows[3]:

Pollutant/Precursor	Construction Emissions (tpy)	Operational Emissions (permitted) (tpy)	Operational Emissions (non-permitted) (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

The sewer pipelines and improvements to the WWTP are not anticipated to generate emissions once they are constructed beyond existing conditions. The estimated annual construction emissions are shown below. CalEEMod version 2020.4.0 were utilized to estimate emissions generated from Project

[3] San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf. Page 80. Accessed September 2020.

construction. Modeling results are provided in Table 1 and the complete CalEEMod output file is provided in Appendix A. It should be noted that although Project construction is not anticipated to occur until Year 2025, for the air emission analysis a more conservative approach was used by assigning Years 2022 and 2023 for construction. Under either scenario, the air emissions associated with the Project are well below established thresholds.

Table 1
Proposed Project Construction Emissions

	VOC (RO	NO_x (tons	CO (tons	PM10*	PM2.5*	CO_2 (MT
2022	0.02	0.2	0.2	0.02	0.02	30.9
2023	0.03	0.22	0.25	0.02	0.01	38.6
Annual Construction	0.03	0.22	0.25	0.02	0.02	38.6
Threshold of	10	10	100	15	15	--
Exceed Threshold?	No	No	No	No	No	N/A

The nearest sensitive receptors to the proposed Project site are the residential houses located along the proposed pipeline alignments, as an objective of the Project is to improve and upgrade the existing sewer pipelines.

Construction would take place within the vicinity of sensitive receptors; however, construction emissions would be below SJVAPCD thresholds and be temporary in nature. Therefore, the relatively small amount of emissions generated and the short duration of the construction period would not expose sensitive receptors to substantial pollutant concentrations.

Because the Project will not exceed any established air emission thresholds, does not result in a cumulatively considerable net increase of any criteria pollutant, and does not significantly impact sensitive receptors, the impact is determined to be ***less than significant.***

Mitigation Measures: None are required.

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

Less Than Significant Impact. During construction, the various diesel-powered vehicles and equipment in use on-site could create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the Project site. In addition, once the Project is operational, there would be no new source of odors from the Project. The sewer pipelines will be enclosed underground and will not release odors. Therefore, the impact is ***less than significant.***

Mitigation Measures: None are required.

IV. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game 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?	☐	☒	☐	☐

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

RESPONSES:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact With Mitigation. A Biological Resource Evaluation (BRE) was prepared for the proposed Project in December 2022 by Colibri Ecological Consulting, LLC (CEC). The BRE is included as Appendix B. As part of the BRE, the California Natural Diversity Data Base (CNDDB), the California Native Plant Society's Inventory of Rare and Endangered Plants, and the USFWS special status species lists were queried for records of special-status plant and animal species in the Project area. In addition, multiple field surveys were conducted as described in Appendix B. The results of the BRE are summarized as follows:

Environmental Setting

The Project site associated with the pipelines supported developed, ruderal, and agricultural land covers. Work areas consisted of paved roads, alleys, parking lots, and existing facilities. The work area north of West Whitesbridge Avenue was bordered by an orchard to the north. The work area along South Del Norte Avenue south of A Street was bordered by an inactive agricultural field to the southeast and an orchard to the southwest. The work areas along West Church Avenue were bordered by orchards, inactive agricultural fields, a church, and a wastewater treatment plant with associated settling ponds. The work area along South Goldenrod Avenue was within a graveled pump facility surrounded by a detention basin, railroad tracks, an orchard, and residential development. All other pipeline work areas were surrounded by residential and commercial development. The improvements to the WWTP will occur within the existing WWTP footprint. The WWTP consists of a fenced area with gravel and paved areas, ponds, and associated buildings and equipment.

Desktop Review

The United States Fish & Wildlife Service species list for the Project site included nine species listed as threatened or endangered under the FESA (USFWS 2022a, Table 1, Appendix A of Appendix B). None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1 of Appendix B). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2022a, Appendix A of Appendix B).

Searching the CNDDB for records of special-status species from the Kerman 7.5-minute USGS quadrangle and the eight surrounding quadrangles produced 107 records of 29 species (Table 1, Appendix B of Appendix B). Of those 29 species, two were not considered further because they are not CEQA-recognized as special-status species by state or federal regulatory agencies or public interest groups (Appendix B of Appendix B). Of the remaining 27 species, 11 are known from within 5 miles of the Project site (Table 1, Figure 4 of Appendix B). Of those species only two, Swainson's hawk (*Buteo swainsoni* – ST) and burrowing owl (*Athene cunicularia* – SSSC), could occur on or near the Project site (Table 1 of Appendix B).

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded 19 taxa (CNPS 2022, Appendix C of Appendix B), 15 of which have a CRPR of 1 or 2 (Table 1 of Appendix B). None of those species are expected to occur on or near the Project site due to the lack of habitat (Table 1 of Appendix B).

Reconnaissance Survey

Colibri Senior Scientist Ryan Slezak conducted a field reconnaissance survey of the Project site on July 6, 2022. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state- or federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 3 of Appendix B). The 0.5- mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (https://www.wildlife.ca.gov/conservation/lsa) and under the Porter-Cologne Water Quality Control Act. All plants except those planted for cultivation or landscaping and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.

Determination

Critical Habitat

The BRE concludes the Project will have no effect on designated or proposed critical habitat as no such habitat has been designated or proposed on or near the Project site.

Special-Status Species

The BRE concludes the Project may affect but is not likely to adversely affect the state listed as threatened Swainson's hawk and the state species of special concern Burrowing Owl. The Project is not expected to affect any other special-status species due to the lack of habitat or known occurrence records for those species near the Project site.

Migratory Birds

The BRE concludes the Project may affect but is not likely to adversely affect nesting migratory birds.

Regulated Habitats

The BRE concludes the Project will have no effect on regulated habitats.

Direct and Indirect Impacts

The Project could adversely affect, either directly or through habitat modifications, two special-status animal that occurs or may occur on or near the Project site (Swainson's hawk and Burrowing Owl). Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species or substantially modifies its habitat could constitute a significant impact. It is recommended that Mitigation Measures BIO-1 and BIO - 2 be included in the conditions of approval to reduce the potential impact to a ***less-than-significant level***.

Mitigation Measures:

BIO – 1 Protect nesting Swainson's hawks

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule work between September and February, a qualified biologist shall conduct a survey for active Swainson's hawk nests in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5 mile radius.

BIO – 2 Protect burrowing owls

1. Conduct focused burrowing owl surveys to assess the presence/absence of burrowing owl at the Project site in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) and *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1997). These involve conducting four pre-construction survey visits.
2. If burrowing owl or sign of burrowing owl use (e.g. feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. No wetlands were present in the proposed Project area and as such, there would be ***no impacts*** associated with the proposed improvements.

Mitigation Measures: None are required.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant with Mitigation. No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds were present in the survey area.

The Project could impede the use of nursery sites for native birds protected under the Migratory Bird Treaty Act and California Fish and Game Code. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort is considered take by the CDFW. Loss of fertile eggs or nestlings, or any activities resulting in nest abandonment, could constitute a significant impact if the species is particularly rare in the region. It is recommended that Mitigation Measure BIO-3 (below) be included in the conditions of approval to reduce the potential impact to a ***less-than-significant level***.

Mitigation Measures:

BIO – 3 Protect nesting birds.

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.

2. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during Project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas for nests. If an active nest is

found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

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 Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. There are no local policies or ordinances that the Project will conflict with. Additionally, there are no adopted local, regional, or state habitat conservation plans adopted for the area. As such, there is ***no impact.***

Mitigation Measures: None are required.

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

RESPONSES:

a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact With Mitigation. To meet State and federal requirements, ASM Affiliates, Inc. (ASM) was retained to conduct background research, complete a records search, request a search of the Native American Heritage Commission's Sacred Lands File and reach out to appropriate Native American contacts, conduct a cultural resources survey, and prepare a technical report, dated January 2023 (see Appendix C). The results of the Report are summarized herein and were used to support the determinations made in this CEQA document.

Native American Outreach

A Sacred Lands File (SLF) request was submitted to the Native American Heritage Commission (NAHC) on July 29, 2022. The NAHC responded with a negative result to the SLF search. Additionally, the NAHC provided a list of Native American tribes who have knowledge of the Project APE. ASM wrote to contacts provided by NAHC for additional information pertaining to the APE. Follow-up emails and phone calls

were made to the NAHC provided contacts. At the time of the report publication no responses have been made. Appendix C provides requests to the NAHC, their results, and information request letters to Native American tribes.

Records Search and Site-Specific Research

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known within it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on July 12, 2022. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the APE; (ii) if the APE had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the surrounding region was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The Native American Heritage Commission (NAHC) Sacred Lands files were also searched to determine whether tribal cultural resources are present.

According to the IC records search (Confidential Appendix A of Appendix C), eleven previous reports cover portions of the Project APE (Table 1 of Appendix C), and one known resource has been identified within the APE (Table 2 of Appendix C). Four additional surveys have been previously conducted within 0.5-miles (mi) of the Project APE (Table 3 of Appendix C), and two resources were identified within 0.5-mi of the APE (Table 4 of Appendix C).

Pedestrian Survey

An intensive Class III inventory/Phase I survey of the Kerman Sewer Improvement Project pipeline APE was conducted by ASM Associate Archaeologist/Crew Chief Robert Azpitarte, B.A. on September 1, 2022. An additional survey of the WWTP APE was conducted on December 1, 2022. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone) where applicable; the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Parallel survey transects spaced at 15-m intervals were employed for the inventory.

A 50-ft buffer surrounding the APE was also surveyed, where this was possible given private property restrictions.

The Project proposed improvements to the existing WWTP, Lift Station No. 17, and a discontinuous series of sewer line segments within the City. The total length of the proposed sewer upgrades totals 5.3-mi. With an applied buffer of 50-ft on all project aspects, the Area of Potential Effects (APE) for the proposed Project totals approximately 143-acres.

Currently the Project APE consists of the WWTP, Lift Station No. 17, paved streets, residential front yards with planted grass, paved parking lots, undeveloped portions of private property, and dirt road rights-of way. The vertical APE, consisting of the maximum depth of the Kerman Sewer Improvement Project is 10-ft. This places the Project area on the open flats of the San Joaquin Valley approximately 11-mi west of the city of Fresno. Elevation within the Project area, which is flat, ranges between approximately 215 and 225-ft above mean sea level (amsl). The APE and immediate surroundings have been heavily developed for urban and agricultural use for many years and no native vegetation is present (Figure 2 of Appendix C). Ground surface visibility was very poor throughout the APE and buffer as the majority of the project will be conducted on paved roadways. No cultural resources of any kind, however, were identified within the Kerman Sewer Improvement Project APE and buffer.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

Direct and Indirect Impacts

As described in the Cultural Resources Report, the records search, background historical research, Native American outreach and a pedestrian survey revealed that no archaeological, cultural or historical resources occur on the Project site or in the Project area.

Unidentified archaeological, cultural or historical resources could be uncovered during proposed Project construction which could result in a potentially significant impact; however, implementation of

Mitigation Measure CUL-1 would ensure that significant impacts remain ***less than significant with mitigation incorporation.***

Mitigation Measures:

CUL – 1 In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery and take appropriate actions as necessary.

c. Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact. Although unlikely given the highly disturbed nature of the site and the records search did not indicate the presence of such resources, subsurface construction activities associated with the proposed Project could potentially disturb previously undiscovered human burial sites. Accordingly, this is a potentially significant impact. The California Health and Safety Code Section 7050.5 states that if human remains are discovered on-site, no further disturbance shall occur until the Fresno County Coroner has made a determination of origin and disposition. If the Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC. The NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097.98.

Although considered unlikely subsurface construction activities could cause a potentially significant impact to previously undiscovered human burial sites, however compliance with regulations would reduce this impact to ***less than significant***.

Mitigation Measures: None are required.

VI. ENERGY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

RESPONSES

a. Result in potentially significant environmental impact 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?

Less Than Significant Impact. The City of Kerman proposes improvements and upgrades to its existing sewer system infrastructure. These improvements consist of replacement or rehabilitation of approximately 5.3 (discontinuous) miles of sewer lines and other minor improvements to the WWTP (which will occur within the existing WWTP footprint). During construction, the Project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass. Title 24 Building Energy Efficiency Standards would provide guidance on construction techniques to maximize energy conservation and it is expected that contractors and the community have a strong financial incentive to use recycled materials and products originating from nearby sources in order to reduce materials costs. As such, it is anticipated that materials used in construction and construction vehicle fuel energy would not involve the wasteful, inefficient, or unnecessary consumption of energy.

Operational Project energy consumption would be minimal, as the pipelines do not require energy once they are installed. Project improvements to the WWTP would require similar operational energy uses to

existing conditions. Operational energy would also be consumed during each vehicle trip associated with the proposed use for maintenance or otherwise.

As discussed in Impact XVII – Transportation/Traffic, the proposed Project would not generate on-going daily vehicle trips, other than for maintenance. The length of these trips and the individual vehicle fuel efficiencies are not known; therefore, the resulting energy consumption cannot be accurately calculated. Adopted federal vehicle fuel standards have continually improved since their original adoption in 1975 and assists in avoiding the inefficient, wasteful, and unnecessary use of energy by vehicles.

As discussed previously, the proposed Project would be required to implement and be consistent with existing energy design standards at the local and state level, such as Title 24. The Project would also be subject to energy conservation requirements in the California Energy Code and CALGreen for the new pipelines. Adherence to state code requirements would ensure that the Project would not result in wasteful and inefficient use of non-renewable resources due to operation.

Therefore, any impacts are ***less than significant***.

Mitigation Measures: None are required.

VII. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code	☐	☐	☒	☐

VII. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
creating substantial direct or indirect risks to life or property?				
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The City of Kerman is situated in the center of the Great Valley of California. According to the 2007 Kerman General Plan Update, this area is an almost-flat, northwest-southeast trending basin, which is approximately 450 miles long and 50 miles wide. Mesozoic platonic, volcanic and metamorphic rocks of the Sierra Nevada Mountains border the Great Valley basin on the east and the sedimentary rocks of the Coast Ranges on the western edge. The geologic formations found in and around the Kerman area are primarily the low alluvial fans of the perennial San Joaquin and Kings Rivers, and the multiple streams which comprise the Fresno alluvial fan sequence.

There are no known active earthquake faults in the City of Kerman. According to the 2007 Kerman General Plan Update, the greatest seismic threat to the region is posed by a complex thrust fault system, deep in the Sierran Block Boundary Zone, which is thought to be the source of the most notable earthquake recoded in the region (recorded in May 1983, 6.7 Rs). The nearest active fault near Kerman is the San Andreas, over 60 miles west.

According to the City's General Plan, much of the Planning area contains a combination of three major soil groups: Hanford, Traver and Hesperia. These soil types are generally considered well-drained.

RESPONSES

a-i. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. As described above, no active or potentially active faults have been mapped within the City and the Project area does not lie within a State-designated Alquist-Priolo Earthquake Fault Zone. The lack of mapped active and potentially active faults notwithstanding, the Project area could be subjected to strong ground shaking during an earthquake on a nearby faults.

The safety risk to people resulting from seismic activity would be significantly decreased by mandatory adherence to all relevant building codes, including the California Building Code (CBC) requirements, adopted by City. In addition, the Project does not include any habitable structures, as the Project only consists of sewer pipelines and minor improvements to the existing WWTP. Any impacts would be l***ess than significant.***

Mitigation Measures: None are required.

a (ii-iv). Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, liquefaction or landslides?

Less than Significant Impact. The proposed Project site is not in an area recognized for severe seismic ground shaking, landslides or liquefaction. Additionally, the Project does not include the construction of substantial structures that would expose people or structures to adverse effects involving rupture of a known earthquake fault. Impacts would be ***less than significant.***

Mitigation Measures: None are required.

b. Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed Project site has a varied topography, but does not include any Project features that would result in substantial soil erosion or loss of topsoil. Most of the Project components will be located below grade. Once construction is completed, the pipeline trenches will be

returned to pre-construction conditions and will not result in soil erosion greater than existing conditions. Therefore, the impact is ***less than significant***.

Mitigation Measures: None are required.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. As described in Impact VI (aii-aiv), the potential for landslides, liquefaction, settlement or other seismically related hazards is low. As such, any impacts will be ***less than significant.***

Mitigation Measures: None are required.

d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

Less than Significant Impact. As described above, the potential for hazard from landslide and liquefaction in the Project area is low. Therefore, the potential for liquefaction induced lateral spreading is also low. Causes of soil instability include, but are not limited to, withdrawal of groundwater, pumping of oil and gas from underground, liquefaction, and hydro-compaction.[4] The proposed Project does not include the on-site withdrawal of groundwater and the Project site is not located in an area that has been subjected to activities that might cause soil instability. Because the Project site has not been subject to activities that may cause soil instability, the risk of subsidence or collapse is expected to be low. Any impacts would be ***less than significant.***

Mitigation Measures: None are required.

[4] USGS. California Water Science Center. Land Subsidence: Cause & Effect. https://ca.water.usgs.gov/land_subsidence/california-subsidence-cause-effect.html. Accessed October 2022.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Less Than Significant Impact. The Project consists of improvements and upgrades to the existing City sewer pipelines and WWTP, and does not include installation of septic systems. The Project has been designed to work with the soil types in the community. Therefore, there would be a ***less than significant impact.***

Mitigation Measures: None are required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

There are no unique geological features or known fossil-bearing sediments in the vicinity of the proposed Project site. However, there remains the possibility for previously unknown, buried paleontological resources or unique geological sites to be uncovered during subsurface construction activities. Implementation of Mitigation Measure CUL-1 would require inadvertently discovery practices to be implemented should previously undiscovered paleontological resources be located. As such, impacts to undiscovered paleontological resources would be ***less than significant.***

VIII. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☒	☐

RESPONSES:

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?

Less than Significant Impact. The proposed Project would generate exhaust-related GHG emissions during construction resulting from construction equipment operation, material haul and delivery trucks, and by trips by construction worker vehicles. Construction-related GHG emissions would occur for approximately twelve months and would cease following completion of the Project.

The proposed Project is not a land-use development project that would generate vehicle trips and is not a roadway capacity increasing project that could carry additional VMT. Therefore, the proposed Project would not result in a net increase in operational GHG emissions. As such, the proposed Project would not interfere or obstruct implementation of an applicable GHG emissions reduction plan. The proposed Project would be consistent with all applicable local plans, policies, and regulations for reducing GHG emissions. Any impacts related to GHG emissions would be ***less than significant.***

Mitigation Measures: None are required.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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	☐	☐	☒	☐

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

RESPONSES:

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?

Less than Significant Impact. While trenching and construction activities may involve the limited transport, storage, use or disposal of hazardous materials, such as the fueling/servicing of construction equipment onsite, the activities would be short-term or one-time in nature and would be subject to federal, state, and local health and safety regulations.

Long-term operation of the proposed Project would involve little or no hazardous materials. Once operational, the pipelines are sealed and will not emit hazardous materials. Improvements to the existing WWTP will increase the efficiency of the system by providing upgrades to the system and will decrease hazards by replacing deteriorated WWTP. Since the Project is intended to improve and upgrade the operation of existing sewer systems, it is assumed to have a positive impact by reducing potential contamination, leakage, or other issues that may result in the release of hazardous materials.

With implementation of the proposed Project, there are no reasonably foreseeable upset and accident conditions that would create a significant hazard to the public due to the release of hazardous materials. Impacts are considered ***less than significant***.

Mitigation Measures: None are required.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. There are several schools located within one-half mile of the proposed Project, since the Project is located in various areas of the City. As previously described, long-term operation of the proposed Project would involve little or no hazardous materials. Once operational, the pipelines are sealed and will not emit hazardous materials. Improvements to the existing WWTP will increase the efficiency of the system by providing upgrades to the system and will decrease hazards by replacing deteriorated WWTP. Since the Project is intended to replace the existing deteriorated sewer pipelines, it is assumed to have a positive impact by reducing potential contamination or other issues that may result in the release of hazardous materials.

Mitigation Measures: None are required.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The proposed Project site is not located on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5.[5] As such, there is ***no impact.***

Mitigation Measures: None are required.

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?

Less Than Significant Impact. There are no airports within two miles of the Project. As previously described, the Project does not include any significant above-grade structures and as such has ***a less than significant impact*** on any airport operations.

Mitigation Measures: None are required.

[5] California Department of Toxic Substance Control. EnviroStor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=kerman+ca. Accessed October 2022.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Pipeline installation may cause temporary partial road closures that could interfere with any adopted emergency response or evacuation plan. Construction schedules pertaining to pipelines within roadways will be coordinated with City police/fire/ambulance and other emergency services. Adequate emergency access will be maintained at all times. As such, any impacts will be ***less than significant***.

Mitigation Measures: None are required.

g. Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?

No Impact. Implementation of the Project would not change the degree of exposure to wildfires because no new housing or businesses will be constructed. Therefore, there is ***no impact.***

Mitigation Measures: None are required.

X. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 offsite;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐

X. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

RESPONSES:

a. <u>Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?</u>

Less than Significant Impact. The proposed Project includes replacement and/or repair of the existing sewer pipeline system.

Construction

Although the proposed with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

Three general sources of potential short-term construction-related stormwater pollution associated with the proposed Project are: 1) the handling, storage, and disposal of construction materials containing pollutants; 2) the maintenance and operation of construction equipment; and 3) earth moving activities which, when not controlled, may generate soil erosion and transportation, via storm runoff or mechanical equipment. Generally, routine safety precautions for handling and storing construction materials may effectively mitigate the potential pollution of stormwater by these

materials. These same types of common sense, "good housekeeping" procedures can be extended to non-hazardous stormwater pollutants such as sawdust and other solid wastes.

Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are also common sources of stormwater pollution and soil contamination. In addition, grading activities can greatly increase erosion processes. Two general strategies are recommended to prevent construction silt from entering local storm drains. First, erosion control procedures should be implemented for those areas that must be exposed. Secondly, the area should be secured to control offsite migration of pollutants. These Best Management Practices (BMPs) would be required in the Stormwater Pollution Prevention Plan (SWPPP) to be prepared prior to commencement of Project construction. When properly designed and implemented, these "good-housekeeping" practices are expected to reduce short-term construction-related impacts to less than significant.

In accordance with the National Pollution Discharge Elimination System (NPDES) Stormwater Program, the Project will be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the Regional Water Quality Control Board (RWQCB) has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement.

Operation

The Project does not include any processes that would result in the production of chemicals or substances that would adversely impact local water quality beyond existing conditions. The Project is intended to rehabilitate/replace deteriorating sewer pipelines, which will reduce leaks and result in increased protection of groundwater in the area. The Project will not result in any additional water releases that could potentially impact groundwater or water quality. Improvements to the existing WWTP will increase the efficiency of the system by providing upgrades to the system and will decrease the potential to impact water quality by replacing deteriorated WWTP. The Regional Water Quality Control Board will have ultimate control over the sewer system, thereby ensuring adequate water quality standards. Any impacts would be ***less than significant***.

Mitigation Measures: None are required.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The proposed Project includes improvements and upgrades to the City of Kerman's existing sewer pipeline infrastructure. The total length of the proposed sewer pipeline upgrades totals 5.3 miles. These improvements will be made to a discontinuous series of sewer line segments within the City and will not use additional groundwater beyond what is already being used by the City. However, a new potable water system is proposed at the existing WWTP to provide on-site water source for use in cleaning treatment ponds, washdown of equipment, etc. This minor amount of water demand will not result in a significant impact to water supplies. Additionally, the proposed Project will not significantly interfere with groundwater recharge as it will not introduce significant amounts of impermeable surfaces. As such, any impacts to groundwater supplies will be ***less than significant***.

Mitigation Measures: None are required.

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

Less than Significant Impact. The proposed pipelines and related improvements will be installed within the existing road right-of-way, or other easements and will not alter any existing drainage patterns. After construction, the pipeline trenches will be restored to pre-Project conditions and are not expected to effect stormwater drainage systems in the area. Improvements at the WWTP will occur within the existing footprint and will not introduce substantial areas of new impervious surfaces. There are no waterways in the immediate vicinity of the proposed Project that would be impacted by the Project. Any impacts would be ***less than significant.***

Mitigation Measures: None are required.

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?

No Impact. The Project is not within a regulatory floodway or within a base floodplain (100 year) elevation (FEMA Flood Map 060665). In addition, the Project does not include any housing or structures that would be subject to flooding either from a watercourse or from dam inundation. There are no bodies of water near the site that would create a potential risk of hazards from seiche, tsunami or mudflow. The Project will not conflict with any water quality control plans or sustainable groundwater management plan. Therefore, there are ***no impacts.***

Mitigation Measures: None are required.

XI. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

RESPONSES:

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?

No Impact. The proposed Project is located within the City of Kerman as presented in Figure 2. The improvements to the sewer lines and WWTP would not cause any land use changes in the surrounding vicinity nor would it divide an established community. Once construction is completed, disturbed ground will be restored to pre-Project conditions. The proposed Project involves upgrades to the existing sewer pipelines and WWTP and does not conflict with any land use plans, policies or regulations. ***No impacts*** would occur as a result of Project implementation.

Mitigation Measures: None are required.

XI. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

RESPONSES:

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?

No Impact. The proposed Project includes improvements and upgrades to the existing City sewer pipelines and WWTP. Construction will take place within the existing streetscape, and/or is otherwise heavily disturbed with urban uses and not in an area with known mineral resources. Therefore, there is ***no impact***.

Mitigation Measures: None are required.

XII. NOISE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

RESPONSES:

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?

Less than Significant Impact. The nearest sensitive receptors to the proposed Project would be the residences along the existing pipeline alignments, as presented in Figure 2. Project construction would involve temporary, short-term noise sources including site preparation and installation of the pipeline and site cleanup work is expected to last for approximately 12 months. It should be noted that construction will be spread out at different locations during the 12 months, rather than construction at a single location for 12 months. Construction-related short-term, temporary noise levels would be higher

than existing ambient noise levels in the Project area, but is temporary and would not occur after construction is completed.

Operations-related noise would be similar to existing conditions. The pipelines themselves do not emit noise, nor do the related improvements. Operational noise at the WWTP would be similar to existing conditions. As such, any impacts to sensitive receptors would be less than significant.

During the proposed Project construction, noise from construction related activities will contribute to the noise environment in the immediate vicinity. Activities involved in construction will generate maximum noise levels, as indicated in Table 2, ranging from 79 to 91 dBA at a distance of 50 feet, without feasible noise control (e.g., mufflers) and ranging from 75 to 80 dBA at a distance of 50 feet, with feasible noise controls.

Table 2
Typical Construction Noise Levels

Type of Equipment	dBA at 50 ft	
	Without Feasible Noise Control	With Feasible Noise Control
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75

The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time. Most residents recognize this reality and expect to hear construction activities on occasion.

Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. Construction associated with the proposed Project is earthmoving activities associated installing pipelines and installing equipment.

The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.[6] Table 3 describes the typical construction equipment vibration levels.

Table 3
Typical Construction Vibration Levels

Equipment	VdB at 25 ft
Small Bulldozer	58
Jackhammer	79

Vibration from construction activities will be temporary and not exceed the Federal Transit Authority threshold for the nearest sensitive receptors.

As such, any impacts resulting from an increase in noise levels or from groundborne noise levels is ***less than significant.***

Mitigation Measures: None are required.

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

No Impact. There are no airports in the vicinity of the Project area. As previously described, the Project does not include any above-grade structures and as such has ***no impact*** on or from noise associated with airport operations.

Mitigation Measures: None are required.

[6] Transit Noise and Vibration Impact Assessment. Final Report No. FTA-VA-90-1003 prepared for the U.S. Federal Transit Administration by Harris Miller Miller & Hanson Inc., May 2006. Page 7-5. http://www.rtd-fastracks.com/media/uploads/nm/14_Section_38_NoiseandVibration_Part3.pdf. Accessed September 2020.

XIV. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

RESPONSES:

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. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. There are no new homes or businesses associated with the proposed Project, nor would Project implementation displace people or housing. The proposed Project is needed to upgrade the existing City sewer pipelines and WWTP. There are ***no impacts***.

Mitigation Measures: None are required.

XV. PUBLIC SERVICES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

RESPONSES:

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:

Fire Protection?

No Impact. The proposed Project consists of improvements to the City's existing sewer pipelines and WWTP. The Project would not directly or indirectly induce population growth and there would be no changes needed to the existing fire suppression services. There is ***no impact.***

Police Protection?

No Impact. The proposed Project will continue to be served by existing police protection services. No additional police personnel or equipment is anticipated. There is ***no impact.***

Schools, Parks, Other Public Facilities?

No Impact. The proposed Project would not increase the number of residents in the community, as the Project does not include residential units. Because the demand for schools, parks, and other public facilities is driven by population, the proposed Project would not increase demand for those services. As such, the proposed Project would result in ***no impacts.***

Mitigation Measures: None are required.

XVI. RECREATION

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

RESPONSES:

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?

No Impact. The proposed Project does not include the construction of residential uses and would not directly or indirectly induce population growth. Therefore, the proposed Project would not cause physical deterioration of existing recreational facilities from increased usage or result in the need for new or expanded recreational facilities. The Project would have ***no impact*** to existing parks.

Mitigation Measures: None are required.

XVII. TRANSPORTATION/ TRAFFIC

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due 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?	☐	☐	☒	☐

RESPONSES:

a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

c. Substantially increase hazards due 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?

Less Than Significant Impact. The proposed Project would not cause a substantial increase in traffic, reduce the existing level of service, create any additional congestion at any intersections, or be inconsistent with CEQA Guidelines Section 15064.3. The construction of pipelines and improvements to the WWTP will not generate any additional traffic (beyond construction-related traffic trips) and as such, level of service standards and vehicle miles traveled standards would not be exceeded. There are no

components of the proposed Project that would increase hazards due to a geometric design feature. As traffic due to construction activities would be temporary in nature; the proposed Project would not cause a substantial increase in traffic or result in inadequate emergency access. Construction schedules pertaining to pipelines within roadways will be coordinated with police/fire/emergency services. Adequate emergency access will be maintained at all times. Access to existing residences will also be maintained throughout construction.

Once installed, the new pipelines and improvements to the WWTP would not generate significant additional traffic trips per day, other than as needed for periodic maintenance. The Project would not conflict with a program plan, ordinance, or policy addressing the circulation system and as such, impacts would be ***less than significant.***

Mitigation Measures: None are required.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:

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

RESPONSES:

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:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact. In accordance with Assembly Bill (AB) 52, potentially affected Tribes were formally notified of this Project and were given the opportunity to request consultation on the Project.

A Sacred Lands File (SLF) request was submitted to the Native American Heritage Commission (NAHC) on July 29, 2022. The NAHC responded with a negative result to the SLF search. Additionally, the NAHC provided a list of Native American tribes who have knowledge of the Project APE. ASM wrote to contacts provided by NAHC for additional information pertaining to the APE. Follow-up emails and phone calls were made to the NAHC provided contacts. At the time of the report publication no responses have been made. Appendix C provides requests to the NAHC, their results, and information request letters to Native American tribes.

Therefore, there is a ***less than significant impact***.

Mitigation Measures: None are required.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
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 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?	☐	☐	☒	☐

RESPONSES:

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact with Mitigation. The primary purpose of the proposed Project is to alleviate sewer pipeline and WWTP issues in the City of Kerman. The Project itself is the replacement and/or repair of approximately 5.3 miles of sewer pipeline and improvements to the WWTP. All environmental impacts resulting from the improvements are discussed within this document.

Mitigation Measures: The Project will require multiple mitigation measures as identified throughout this document.

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. The proposed Project includes improvements and upgrades to the City of Kerman's existing sewer pipeline infrastructure and WWTP. The total length of the proposed sewer pipeline upgrades totals 5.3 miles. These improvements will be made to a discontinuous series of sewer line segments within the City and will not use additional groundwater beyond what is already being used by the City. However, a new potable water system is proposed at the existing WWTP to provide on-site water source for use in cleaning treatment ponds, washdown of equipment, etc. This minor amount of water demand will not result in a significant impact to water supplies. There is a ***less than significant impact.***

Mitigation Measures: None are required.

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. The proposed Project includes improvements and upgrades to the City of Kerman's existing sewer pipeline infrastructure and WWTP. The Project does not result in additional impacts to the City's WWTP capacity. The Regional Water Quality Control Board will have ultimate

review and approval of the upgraded pipeline system, thereby ensuring the Project will be in compliance will all State and local regulations and requirements.

Mitigation Measures: None are required.

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?

Less Than Significant Impact. Proposed Project construction and operation will generate minimal amounts of solid waste. The proposed Project will not generate waste on an on-going basis and will comply with all federal, state and local statutes and regulations related to solid waste. Any impacts will be ***less than significant.***

Mitigation Measures: None are required.

XX. 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 Incorporation	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?	☐	☐	☒	☐

RESPONSES:

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?

Less Than Significant Impact. The proposed Project is located in areas within the City of Kerman that have been developed with urban uses. The proposed Project includes improvements and upgrades to the City's existing underground sewer pipelines and WWTP. There is no increased risk or on-going risk of wildfire beyond existing conditions associated with the Project.

As such, any wildfire risk to the Project structures or people would be ***less than significant.***

Mitigation Measures: None are required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

RESPONSES:

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact With Mitigation. The analyses of environmental issues contained in this Initial Study indicate that the proposed Project is not expected to have substantial impact on the environment or on any resources identified in the Initial Study. Mitigation measures have been incorporated in the Project to reduce all potentially significant impacts to ***less than significant***.

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)?

Less than Significant Impact. CEQA Guidelines Section 15064(i) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects,

other current projects, and probable future projects. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increase need for housing, increase in traffic, air pollutants, etc.). The impact is ***less than significant***.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact With Mitigation. The analyses of environmental issues contained in this Initial Study indicate that the Project is not expected to have substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the Project to reduce all potentially significant impacts to ***less than significant***

Chapter 4

MITIGATION MONITORING & REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the City of Kerman Sewer Improvements Project, in Fresno County, California. The MMRP lists mitigation measures recommended in the IS/MND for the proposed Project and identifies monitoring and reporting requirements as well as conditions recommended by responsible agencies who commented on the Project.

The first column of the Table identifies the mitigation measure. The second column, entitled "Party Responsible for Implementing Mitigation," names the party responsible for carrying out the required action. The third column, "Implementation Timing," identifies the time the mitigation measure should be initiated. The fourth column, "Party Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last column will be used by the City to ensure that individual mitigation measures have been monitored.

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
Biology				
BIO-1 Protect Nesting Swainsons Hawks. 1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August. 2. If it is not possible to schedule work between September and February, a qualified biologist shall conduct a survey for active Swainson's hawk nests in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5 mile radius. **BIO-2 Protect burrowing owls** 1. Conduct focused burrowing owl surveys to assess the presence/absence of burrowing owl at the Project site in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) and *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1997). These involve conducting four pre-construction survey visits. 2. If burrowing owl or sign of burrowing owl use (e.g. feathers, guano, pellets) is detected	City of Kerman	Prior to and during construction	City of Kerman	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW. **BIO-3 Protect Nesting Birds.** 1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August. **2.** If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during Project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas for nests. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or				

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.				
Cultural Resources				
Mitigation Measure CUL-1 – • In the event that archaeological remains are encountered at any time during development or ground-moving activities within the entire Project area, all work in the vicinity of the find should be halted until a qualified archaeologist can assess the discovery and take appropriate actions as necessary.	City of Kerman	Prior to and during construction	City of Kerman	

Chapter 5

PREPARERS

LIST OF PREPARERS

Crawford & Bowen Planning, Inc.

- Travis Crawford, AICP, Principal Environmental Planner
- Deepesh Tourani, Associate Planner

AM Consulting Engineers

- Alfonso Manrique, PE
- Angela Hall, PE

Colibri Ecological Consulting, LLC.

- Jeff Davis

ASM Affiliates

- Peter Carey

Appendices

Appendix A

CalEEMod Output Files

Kerman Sewer Systems Improvement Project - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Kerman Sewer Systems Improvement Project

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	28.00	1000sqft	0.64	28,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	7			**Operational Year**	2024
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

Project Characteristics - Project consists of sewer system improvements and upgrades.

Land Use - Total length of the proposed sewer upgrades is 5.3 miles. Sewer pipeline width is considered 12in.

Table Name	Column Name	Default Value	New Value

2.0 Emissions Summary

Kerman Sewer Systems Improvement Project - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2022	0.0199	0.1943	0.1981	3.5000e-004	8.6400e-003	9.8500e-003	0.0185	3.4300e-003	9.1200e-003	0.0126	0.0000	30.9080	30.9080	8.0600e-003	3.6000e-004	31.2175
2023	0.0291	0.2171	0.2472	4.4000e-004	4.2700e-003	0.0105	0.0148	1.1600e-003	9.6900e-003	0.0109	0.0000	38.6048	38.6048	0.0105	5.1000e-004	39.0206
Maximum	**0.0291**	**0.2171**	**0.2472**	**4.4000e-004**	**8.6400e-003**	**0.0105**	**0.0185**	**3.4300e-003**	**9.6900e-003**	**0.0126**	**0.0000**	**38.6048**	**38.6048**	**0.0105**	**5.1000e-004**	**39.0206**

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					
2022	0.0199	0.1943	0.1981	3.5000e-004	8.6400e-003	9.8500e-003	0.0185	3.4300e-003	9.1200e-003	0.0126	0.0000	30.9079	30.9079	8.0600e-003	3.6000e-004	31.2175
2023	0.0291	0.2171	0.2472	4.4000e-004	4.2700e-003	0.0105	0.0148	1.1600e-003	9.6900e-003	0.0109	0.0000	38.6047	38.6047	0.0105	5.1000e-004	39.0205
Maximum	**0.0291**	**0.2171**	**0.2472**	**4.4000e-004**	**8.6400e-003**	**0.0105**	**0.0185**	**3.4300e-003**	**9.6900e-003**	**0.0126**	**0.0000**	**38.6047**	**38.6047**	**0.0105**	**5.1000e-004**	**39.0205**

Kerman Sewer Systems Improvement Project - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	**10-19-2022**	**1-18-2023**	0.2597	0.2597
2	**1-19-2023**	**4-18-2023**	0.1966	0.1966
		Highest	0.2597	0.2597

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.4200e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-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	**2.4200e-003**	**0.0000**	**2.6000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	2.4200e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-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	**2.4200e-003**	**0.0000**	**2.6000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-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	10/19/2022	11/1/2022	5	10	
2	Site Preparation	Site Preparation	11/2/2022	11/2/2022	5	1	
3	Grading	Grading	11/3/2022	11/4/2022	5	2	

Kerman Sewer Systems Improvement Project - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	11/5/2022	3/24/2023	5	100	
5	Paving	Paving	3/25/2023	3/31/2023	5	5	
6	Architectural Coating	Architectural Coating	4/1/2023	4/7/2023	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.64

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,680 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Kerman Sewer Systems Improvement Project - San Joaquin Valley Unified APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	12.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.2000e-004	1.3600e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3324	0.3324	1.0000e-005	1.0000e-005	0.3358
Total	**1.7000e-004**	**1.2000e-004**	**1.3600e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3324**	**0.3324**	**1.0000e-005**	**1.0000e-005**	**0.3358**

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	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.2000e-004	1.3600e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3324	0.3324	1.0000e-005	1.0000e-005	0.3358
Total	**1.7000e-004**	**1.2000e-004**	**1.3600e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3324**	**0.3324**	**1.0000e-005**	**1.0000e-005**	**0.3358**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.4700e-003	1.9800e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**2.9000e-004**	**3.4700e-003**	**1.9800e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.2000e-004**	**1.5000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0166	0.0166	0.0000	0.0000	0.0168
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0166**	**0.0166**	**0.0000**	**0.0000**	**0.0168**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.4700e-003	1.9800e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4275	0.4275	1.4000e-004	0.0000	0.4310
Total	**2.9000e-004**	**3.4700e-003**	**1.9800e-003**	**0.0000**	**2.7000e-004**	**1.3000e-004**	**4.0000e-004**	**3.0000e-005**	**1.2000e-004**	**1.5000e-004**	**0.0000**	**0.4275**	**0.4275**	**1.4000e-004**	**0.0000**	**0.4310**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0166	0.0166	0.0000	0.0000	0.0168
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0166**	**0.0166**	**0.0000**	**0.0000**	**0.0168**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**5.3100e-003**	**5.2000e-004**	**5.8300e-003**	**2.5700e-003**	**4.8000e-004**	**3.0500e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2022

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	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0537
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0532**	**0.0532**	**0.0000**	**0.0000**	**0.0537**

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					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**5.3100e-003**	**5.2000e-004**	**5.8300e-003**	**2.5700e-003**	**4.8000e-004**	**3.0500e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

3.4 Grading - 2022

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	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0537
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0532**	**0.0532**	**0.0000**	**0.0000**	**0.0537**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.1405	0.1431	2.3000e-004		7.4400e-003	7.4400e-003		6.8400e-003	6.8400e-003	0.0000	20.0295	20.0295	6.4800e-003	0.0000	20.1915
Total	**0.0137**	**0.1405**	**0.1431**	**2.3000e-004**		**7.4400e-003**	**7.4400e-003**		**6.8400e-003**	**6.8400e-003**	**0.0000**	**20.0295**	**20.0295**	**6.4800e-003**	**0.0000**	**20.1915**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	5.4900e-003	1.5800e-003	2.0000e-005	6.6000e-004	6.0000e-005	7.2000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	2.0080	2.0080	1.0000e-005	3.0000e-004	2.0981
Worker	8.2000e-004	5.8000e-004	6.5400e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5957	1.5957	5.0000e-005	5.0000e-005	1.6117
Total	**1.0400e-003**	**6.0700e-003**	**8.1200e-003**	**4.0000e-005**	**2.5800e-003**	**7.0000e-005**	**2.6500e-003**	**7.0000e-004**	**7.0000e-005**	**7.7000e-004**	**0.0000**	**3.6037**	**3.6037**	**6.0000e-005**	**3.5000e-004**	**3.7098**

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	0.0137	0.1405	0.1431	2.3000e-004		7.4400e-003	7.4400e-003		6.8400e-003	6.8400e-003	0.0000	20.0295	20.0295	6.4800e-003	0.0000	20.1915
Total	**0.0137**	**0.1405**	**0.1431**	**2.3000e-004**		**7.4400e-003**	**7.4400e-003**		**6.8400e-003**	**6.8400e-003**	**0.0000**	**20.0295**	**20.0295**	**6.4800e-003**	**0.0000**	**20.1915**

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3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	5.4900e-003	1.5800e-003	2.0000e-005	6.6000e-004	6.0000e-005	7.2000e-004	1.9000e-004	6.0000e-005	2.5000e-004	0.0000	2.0080	2.0080	1.0000e-005	3.0000e-004	2.0981
Worker	8.2000e-004	5.8000e-004	6.5400e-003	2.0000e-005	1.9200e-003	1.0000e-005	1.9300e-003	5.1000e-004	1.0000e-005	5.2000e-004	0.0000	1.5957	1.5957	5.0000e-005	5.0000e-005	1.6117
Total	**1.0400e-003**	**6.0700e-003**	**8.1200e-003**	**4.0000e-005**	**2.5800e-003**	**7.0000e-005**	**2.6500e-003**	**7.0000e-004**	**7.0000e-005**	**7.7000e-004**	**0.0000**	**3.6037**	**3.6037**	**6.0000e-005**	**3.5000e-004**	**3.7098**

3.5 Building Construction - 2023

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	0.0190	0.1926	0.2129	3.4000e-004		9.6100e-003	9.6100e-003		8.8400e-003	8.8400e-003	0.0000	30.0625	30.0625	9.7200e-003	0.0000	30.3056
Total	**0.0190**	**0.1926**	**0.2129**	**3.4000e-004**		**9.6100e-003**	**9.6100e-003**		**8.8400e-003**	**8.8400e-003**	**0.0000**	**30.0625**	**30.0625**	**9.7200e-003**	**0.0000**	**30.3056**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	6.6300e-003	2.0300e-003	3.0000e-005	9.9000e-004	4.0000e-005	1.0400e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	2.8998	2.8998	1.0000e-005	4.3000e-004	3.0294
Worker	1.1300e-003	7.6000e-004	8.9600e-003	3.0000e-005	2.8800e-003	2.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.3307	2.3307	7.0000e-005	7.0000e-005	2.3527
Total	**1.3000e-003**	**7.3900e-003**	**0.0110**	**6.0000e-005**	**3.8700e-003**	**6.0000e-005**	**3.9300e-003**	**1.0500e-003**	**5.0000e-005**	**1.1100e-003**	**0.0000**	**5.2304**	**5.2304**	**8.0000e-005**	**5.0000e-004**	**5.3820**

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	0.0190	0.1926	0.2129	3.4000e-004		9.6100e-003	9.6100e-003		8.8400e-003	8.8400e-003	0.0000	30.0625	30.0625	9.7200e-003	0.0000	30.3056
Total	**0.0190**	**0.1926**	**0.2129**	**3.4000e-004**		**9.6100e-003**	**9.6100e-003**		**8.8400e-003**	**8.8400e-003**	**0.0000**	**30.0625**	**30.0625**	**9.7200e-003**	**0.0000**	**30.3056**

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3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	6.6300e-003	2.0300e-003	3.0000e-005	9.9000e-004	4.0000e-005	1.0400e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	2.8998	2.8998	1.0000e-005	4.3000e-004	3.0294
Worker	1.1300e-003	7.6000e-004	8.9600e-003	3.0000e-005	2.8800e-003	2.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.3307	2.3307	7.0000e-005	7.0000e-005	2.3527
Total	**1.3000e-003**	**7.3900e-003**	**0.0110**	**6.0000e-005**	**3.8700e-003**	**6.0000e-005**	**3.9300e-003**	**1.0500e-003**	**5.0000e-005**	**1.1100e-003**	**0.0000**	**5.2304**	**5.2304**	**8.0000e-005**	**5.0000e-004**	**5.3820**

3.6 Paving - 2023

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	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	8.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3700e-003**	**0.0138**	**0.0176**	**3.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

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3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.1200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2913	0.2913	1.0000e-005	1.0000e-005	0.2941
Total	**1.4000e-004**	**9.0000e-005**	**1.1200e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2913**	**0.2913**	**1.0000e-005**	**1.0000e-005**	**0.2941**

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	1.5300e-003	0.0138	0.0176	3.0000e-005		6.6000e-004	6.6000e-004		6.2000e-004	6.2000e-004	0.0000	2.3498	2.3498	6.8000e-004	0.0000	2.3669
Paving	8.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3700e-003**	**0.0138**	**0.0176**	**3.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.2000e-004**	**6.2000e-004**	**0.0000**	**2.3498**	**2.3498**	**6.8000e-004**	**0.0000**	**2.3669**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.1200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2913	0.2913	1.0000e-005	1.0000e-005	0.2941
Total	**1.4000e-004**	**9.0000e-005**	**1.1200e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2913**	**0.2913**	**1.0000e-005**	**1.0000e-005**	**0.2941**

3.7 Architectural Coating - 2023

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	5.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**6.3200e-003**	**3.2600e-003**	**4.5300e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

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	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0324	0.0324	0.0000	0.0000	0.0327
Total	**2.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0324**	**0.0324**	**0.0000**	**0.0000**	**0.0327**

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	5.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8000e-004	3.2600e-003	4.5300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6393
Total	**6.3200e-003**	**3.2600e-003**	**4.5300e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6393**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

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	2.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0324	0.0324	0.0000	0.0000	0.0327
Total	**2.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0324**	**0.0324**	**0.0000**	**0.0000**	**0.0327**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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 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 Asphalt Surfaces	9.50	7.30	7.30	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 Asphalt Surfaces	0.511221	0.052103	0.170611	0.160645	0.028932	0.007649	0.013284	0.025916	0.000654	0.000315	0.023645	0.001472	0.003552

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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 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 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 Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other 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 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 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	2.4200e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Unmitigated	2.4200e-003	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-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	5.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Total	**2.4100e-003**	**0.0000**	**2.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-004**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	5.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Total	**2.4100e-003**	**0.0000**	**2.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-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 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 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 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 Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other 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 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 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

Appendix B

Biological Evaluation Report

BIOLOGICAL RESOURCE EVALUATION

DECEMBER 2022

KERMAN SEWER IMPROVEMENTS PROJECT
KERMAN, FRESNO COUNTY, CALIFORNIA

PREPARED FOR:
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Executive Summary

The City of Kerman (City) proposes a sanitary sewer collection system and wastewater treatment plant improvements project in Kerman, Fresno County, California. The proposed project (Project) will involve repairing and replacing existing sewer line at various locations throughout the city, repairing and replacing equipment at the City's wastewater treatment plant, and upgrading Lift Station Number 17.

This Project will be funded by the Clean Water State Revolving Fund (CWSRF). The CWSRF is a state and federal partnership that offers low cost financing for a wide variety of water quality projects. It is administered by the State of California and is partially funded by the United States Environmental Protection Agency (EPA). Therefore, the Project must not only meet environmental documentation and review requirements under the California Environmental Quality Act (CEQA) but must meet federal cross-cutting requirements as well.

To evaluate whether the Project may affect biological resources under CEQA and federal cross-cutting purview, we (1) obtained official lists from the United States Fish and Wildlife Service and the California Department of Fish and Wildlife of special-status species and designated and proposed critical habitat, (2) reviewed other relevant background information such as satellite imagery and topographic maps, and (3) conducted a field reconnaissance survey of the Project site.

This biological resource evaluation summarizes existing biological conditions on the Project site, the potential for special-status species and regulated habitats to occur on or near the Project site, the potential impacts of the proposed project on biological resources and regulated habitats, and measures to reduce those potential impacts to a less-than-significant level under CEQA.

We concluded the Project will not affect regulated habitats but could affect two special-status species, the state-listed as threatened Swainson's hawk (*Buteo swainsoni*) and the state species of special concern burrowing owl (*Athene cunicularia*), as well as nesting migratory birds. However, effects can be reduced to less-than-significant levels with mitigation.

Abbreviations

Abbreviation	Definition
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWSRF	Clean Water State Revolving Fund
EFH	Essential Fish Habitat
FE	Federally listed as Endangered
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FP	State Fully Protected
FT	Federally listed as Threatened
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Association
NRCS	Natural Resources Conservation Science
SE	State listed as Endangered
SSSC	State Species of Special Concern
ST	State listed as Threatened
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

1.1 Background

The City of Kerman (City) proposes to repair and replace sewer line at various locations throughout the city, repair and replace equipment at the existing wastewater treatment plant, and upgrade Lift Station Number 17. This Project will be funded by the Clean Water State Revolving Fund (CWSRF). The CWSRF is a state and federal partnership that offers low cost financing for a wide variety of water quality projects. It is administered by the State of California and partially funded by the United States Environmental Protection Agency (EPA). Due to this federal nexus, issuing funds from the CWSRF constitutes a federal action, one that requires that the EPA determine whether the proposed action may affect federally protected resources. The Project must therefore comply with requirements of both the California Environmental Quality Act (CEQA) and certain federal environmental laws and regulations.

The purpose of this biological resource evaluation is to assess whether the Project will affect state- or federally protected resources pursuant to CEQA and federal cross-cutting regulatory guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA), as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of the California Fish and Game Code. Biological resources considered here also include designated or proposed critical habitat recognized under the FESA. This biological resource evaluation also addresses Project-related impacts to regulated habitats, which are those under the jurisdiction of the United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), or California Department of Fish and Wildlife (CDFW), as well as those addressed under the Wild and Scenic Rivers Act, Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and Executive Order 11988 pertaining to floodplain management.

1.2 Project Description

This Project will involve three components: (1) repairing and replacing approximately 5.3 miles of existing sewer line at various locations throughout Kerman; (2) improving the City's wastewater treatment plant by constructing a non-potable water system, installing new sensors and flow meters, replacing hoists, pumps, screens, Turbo Blowers, the Biolac system digester, and the washer compactor, and constructing a building to house the blower pumps; and (3) upgrading Lift Station Number 17 through wet well rehabilitation and repairing pump chain welds and electric wiring.

1.3 Project Location

The Project will include work at various locations throughout Kerman, Fresno County, California (Figures 1 and 2). The sewer line work areas are bounded by West Nielsen Avenue to the north, South Goldenrod Avenue to the east, West Church Avenue to the south, and South Siskiyou Avenue to the west. The wastewater treatment improvements will occur within existing buildings and tanks at the City's wastewater treatment plant southeast of the intersection of West Church Street and South Del Norte Avenue. Upgrades to Lift Station Number 17 will occur within Pump Station 17 west of South Goldenrod Avenue approximately 300 feet north of West California Avenue.

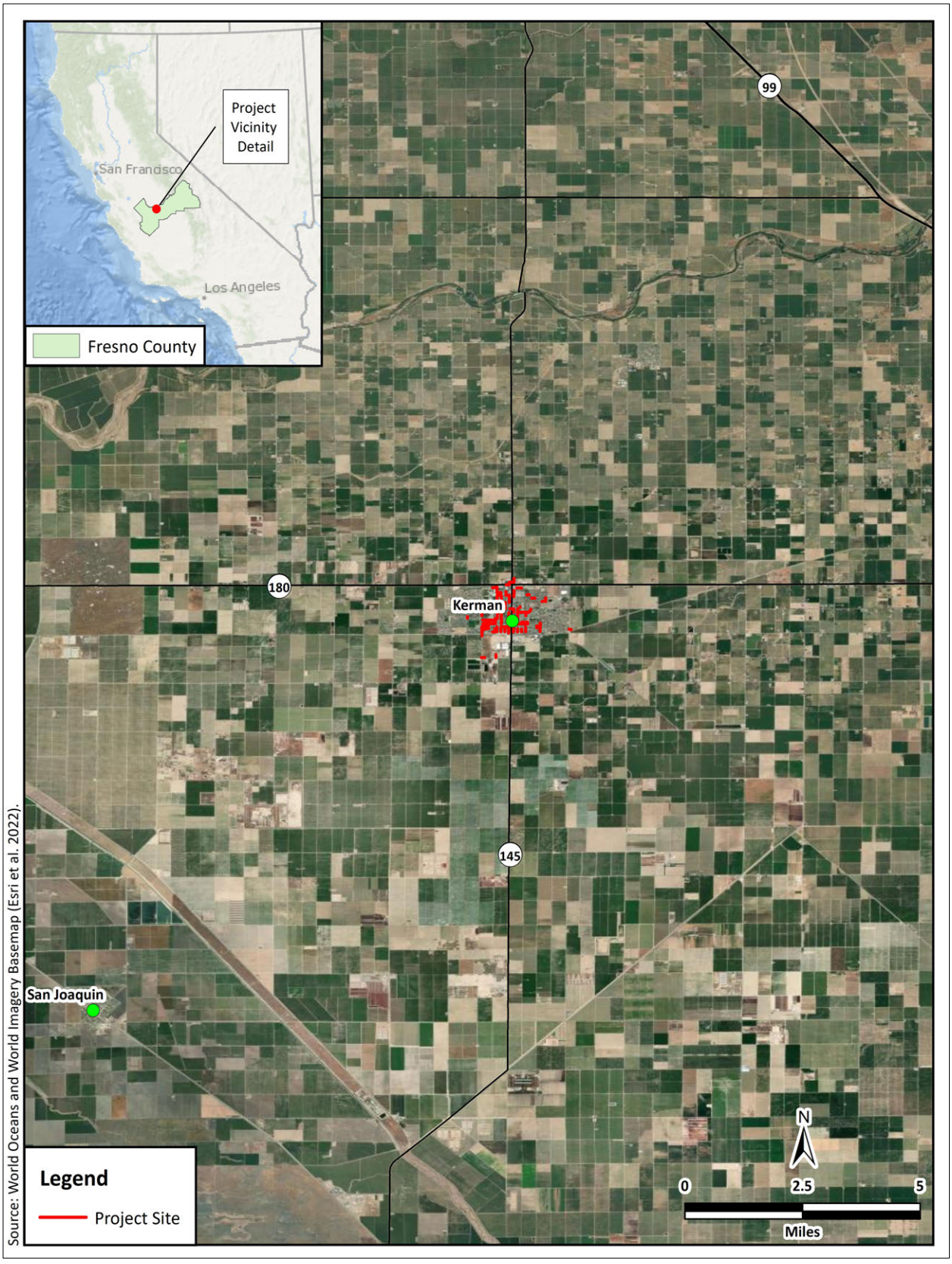

Figure 1. Project site vicinity map.

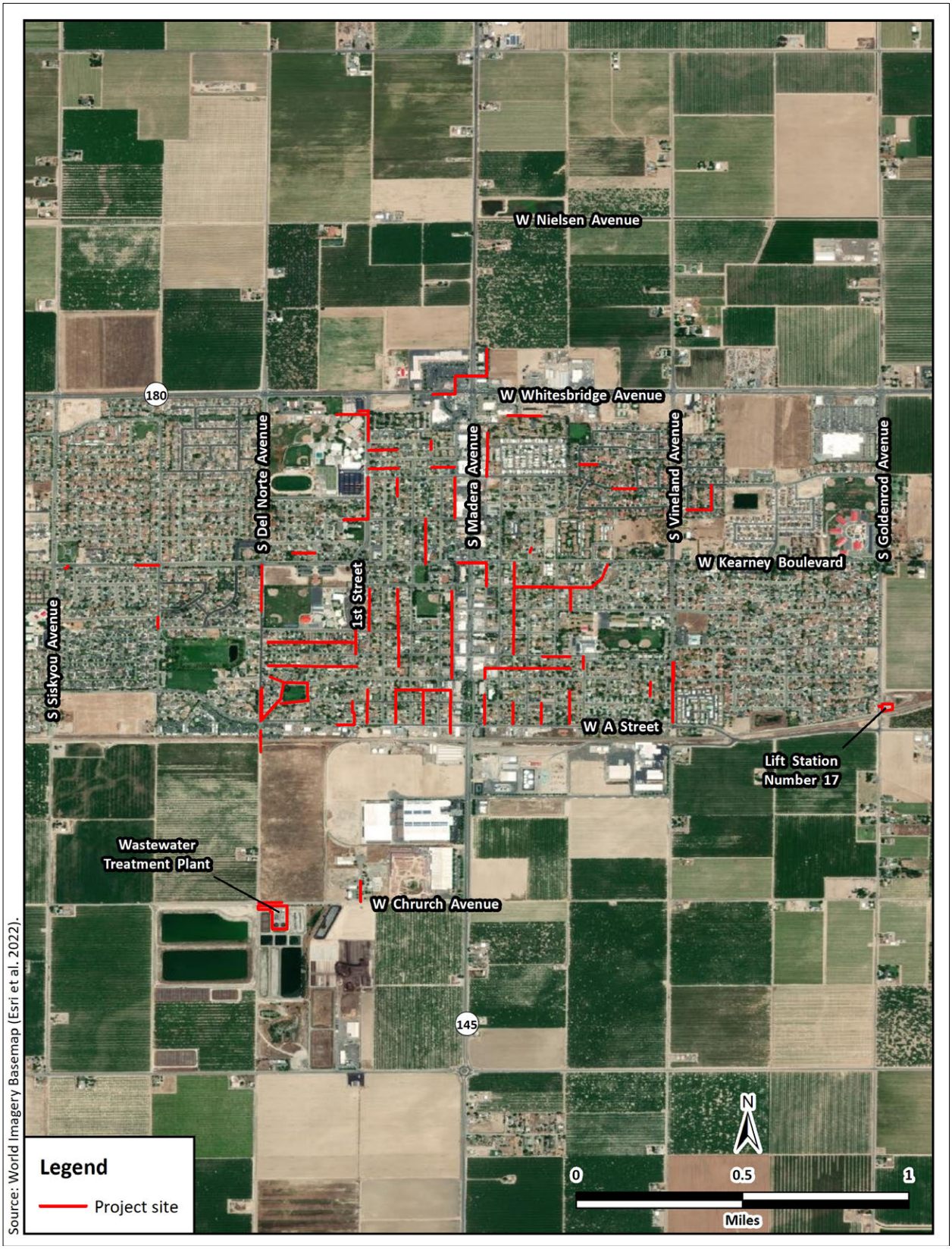

Figure 2. Project site map.

1.4 Purpose and Need of Proposed Project

The purpose of the Project is to upgrade the City of Kerman sewer and wastewater treatment systems. The Project is needed to protect water quality and public health.

1.5 Consultation History

Lists of all species listed or proposed for listing as threatened or endangered and all designated or proposed critical habitat under the FESA that could occur near the Project site were obtained by Colibri Senior Scientist Ryan Slezak from the United States Fish and Wildlife Service (USFWS) website (https://ecos.fws.gov/ipac/) on 14 June 2022 (Appendix A).

1.6 Regulatory Framework

The relevant regulatory requirements and policies that guide the impact analysis of the Project are summarized below.

1.6.1 Federal Requirements

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 USC § 668-668d), originally the Bald Eagle Protection Act, was enacted in 1940 to protect bald eagle (*Haliaeetus leucocephalus*), the species selected as a national emblem of the United States. The act was amended in 1962 to include the golden eagle (*Aquila chrysaetos*). As amended, the Act prohibits take, possession, and commerce of bald and golden eagles and their parts, products, nests, or eggs, except by valid permit. Take is defined as "*pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.*" Disturb means agitating or bothering to a degree that causes, or is likely to cause, injury, a decrease in productivity, or nest abandonment. This law also prohibits human-induced alterations near previously used nest sites when eagles are not present if upon the eagle's return it is disturbed as defined above. Take permits may be issued for conducting certain types of lawful activities such as scientific research, propagation, and Indian religious purposes. The USFWS is responsible for enforcing this act.

Executive Order 11988: Floodplain Management. Executive Order 11988 (42 Federal Register 26951, 3 CFR, 1977 Comp., p. 117) requires federal agencies to avoid to the extent possible the long-term and short-term adverse effects associated with occupying and modifying flood plains and to avoid direct and indirect support of developing floodplains wherever there is a practicable alternative.

Federal Endangered Species Act. The United States Fish and Wildlife Service (USFWS) and the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) enforce the provisions stipulated in the Federal Endangered Species Act of 1973 (FESA, 16 United States Code [USC] § 1531 et seq.). Threatened and endangered species on the

federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed action within its jurisdiction must determine whether any federally listed species may be present in the project site and determine whether the proposed action may affect such species. Under the FESA, habitat loss is considered an effect to a species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA (16 USC § 1536[3], [4]). Therefore, proposed action-related effects to these species or their habitats would be considered significant and would require mitigation.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (Public law 94-265; Statutes at Large 90 Stat. 331; 16 U.S.C. ch. 38 § 1801 et seq.) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult the NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect "essential fish habitat (EFH)." EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Magnuson-Stevens Act states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase "adversely affect" refers to any effect that reduces the quality or quantity of EFH. Federal activities that occur outside of EFH, but which may affect EFH must also be considered. The Act applies to salmon species, groundfish species, highly migratory species such as tuna, and coastal pelagic species such as anchovies.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA) (16 USC § 703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. "Take" is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC § 703 and § 715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an "active nest." However, the "Migratory Bird Permit Memorandum" issued by the USFWS in 2003 and updated in 2018 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2018).

National Environmental Policy Act. The purposes of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. §§ 4321–4347), including all relevant subsequent guidelines and regulations, include encouraging "harmony between [humans] and their environment and promoting efforts which will prevent or eliminate damage to the environment… and stimulate the health and welfare of [humanity]". The purposes of NEPA are accomplished

by evaluating the effects of federal actions. The results of these evaluations are presented to the public, federal agencies, and public officials in document format (e.g., Environmental Assessments and Environmental Impact Statements) for consideration prior to taking official action or making official decisions. Environmental documents prepared pursuant to NEPA must be completed before federal actions can be implemented. The NEPA process requires careful evaluation of the need for action, and that federal actions be considered alongside all reasonable alternatives, including the No Action alternative. NEPA also requires that the potential impacts on the human environment be considered for each alternative. Detailed implementing regulations for NEPA are contained in 40 C.F.R. 1500 et seq.

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The SWRCB is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

Wild and Scenic Rivers Act. The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with significant natural, cultural, and recreational values in a free-flowing condition. The Act safeguards the special character of these rivers, while also recognizing the potential for their appropriate use and development.

1.6.2 State Requirements

California Department of Fish and Wildlife Jurisdiction. The CDFW has regulatory jurisdiction over lakes and streams in California. Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code Section 1602.

California Endangered Species Act. The California Endangered Species Act (CESA) of 1970 (Fish and Game Code § 2050 et seq., and California Code of Regulations [CCR] Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state-listed species. During consultation, CDFW determines whether take would occur and identifies "reasonable and prudent alternatives" for the project and conservation of special-status species. CDFW can authorize take of state-listed species under Sections 2080.1 and 2081(b) of the California Fish and Game Code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed Project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

California Environmental Quality Act. The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore, species considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2022). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare and endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act. The California Native Plant Protection Act of 1977 (California Fish and Game Code §§ 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting birds. California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are "Fully Protected" as those that may not be taken or possessed except under specific permit.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (CWC § 13000 et. sec.) was established in 1969 and entrusts the State Water Resources Control Board and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California's diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state's surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply California water quality standards. The Porter-Cologne Water Quality Control Act addresses all "waters of the State," which are more broadly defined than waters of the Unites States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

2.0 Methods

2.1 Desktop Review

We obtained a USFWS species list for the Project site as a framework for the evaluation and reconnaissance survey (USFWS 2022a, Appendix A). In addition, we searched the California Natural Diversity Data Base (CDFW 2022, Appendix B) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2022, Appendix C) for records of special-status plant and animal species from the vicinity of the Project site. Regional lists of special-status species were compiled using USFWS, CNDDB, and CNPS database searches confined to the Kerman 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Biola, Gravelly Ford, Helm, Herndon, Jamesan, Kearney Park, Raisin, and San Joaquin). A local list of special-status species was compiled using CNDDB records from within 5 miles of the Project site. Species that lack a CEQA-recognized special-status designation by federal or state regulatory agencies or public interest groups were omitted from the final list. Species for which the Project site does not provide habitat were eliminated from further consideration. We also reviewed satellite imagery from Google Earth (Google 2022) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2022), the National Wetlands Inventory (USFWS 2022b), the National Wild and Scenic Rivers System (USFWS 2022c), Federal Emergency Management Agency (FEMA 2022) flood maps, and relevant literature.

2.2 Reconnaissance Survey

Colibri Senior Scientist Ryan Slezak conducted a field reconnaissance survey of the Project site on 6 July 2022. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state- or federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 3). The 0.5-mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (https://www.wildlife.ca.gov/conservation/lsa) and under the Porter-Cologne Water Quality Control Act. All plants except those planted for cultivation or landscaping and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.

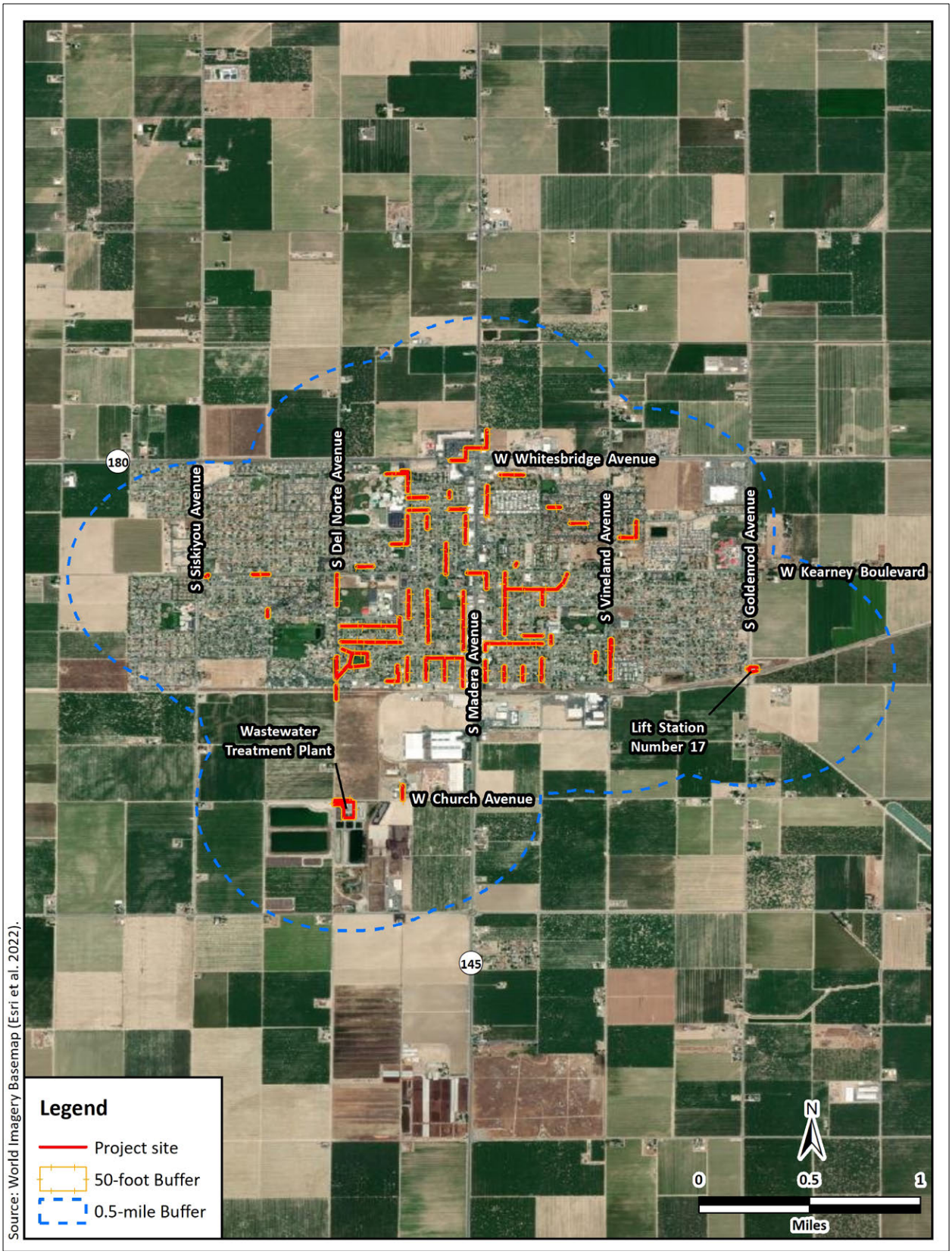

Figure 3. Reconnaissance survey area map.

2.3 Effects Analysis and Significance Criteria

2.3.1 Effects Analysis

Factors considered in evaluating the effects of the Project on special-status species included the (1) presence of designated or proposed critical habitat in the survey area, (2) potential for the survey area to support special-status species, (3) dependence of any such species on specific habitat components that would be removed or modified, (4) the degree of effects to the habitat, (5) abundance and distribution of the habitat in the region, (6) distribution and population levels of the species, (7) cumulative effects of the Project and any future activities in the area, and (8) the potential to mitigate any adverse effects.

Factors considered in evaluating the effects of the Project on bald eagle, golden eagle, and migratory birds included the potential for the Project to result in (1) mortality of eagles or migratory birds or (2) loss of their nests containing viable eggs or nestlings.

Factors considered in evaluating the effects of the Project on regulated habitats included the (1) presence of features comprising or potentially comprising waters of the United States, Wild and Scenic Rivers, essential fish habitat (EFH), floodplains, and lakes or streams within the survey area, and (2) potential for the Project to affect such habitats.

2.3.2 Significance Criteria

CEQA defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in the environment" (Pub. Res. Code § 21068). Under CEQA Guidelines Section 15065, a Project's effects on biological resources are deemed significant where the Project would do the following:

a) Substantially reduce the habitat of a fish or wildlife species,
b) Cause a fish or wildlife population to drop below self-sustaining levels,
c) Threaten to eliminate a plant or animal community, or
d) Substantially reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do any of the following:

e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

f) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;

g) 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;

h) 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;

i) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

j) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project site included nine species listed as threatened or endangered under the FESA (USFWS 2022a, Table 1, Appendix A). None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2022a, Appendix A).

Searching the CNDDB for records of special-status species from the Kerman 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 107 records of 29 species (Table 1, Appendix B). Of those 29 species, two were not considered further because they are not CEQA-recognized as special-status species by state or federal regulatory agencies or public interest groups (Appendix B). Of the remaining 27 species, 11 are known from within 5 miles of the Project site (Table 1, Figure 4). Of those species only two, Swainson's hawk (*Buteo swainsoni* – ST) and burrowing owl (*Athene cunicularia* – SSSC), could occur on or near the Project site (Table 1).

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded 19 taxa (CNPS 2022, Appendix C), 15 of which have a CRPR of 1 or 2 (Table 1). None of those species are expected to occur on or near the Project site due to the lack of habitat (Table 1).

The Project site is underlain by Hesperia sandy loam (74.0%), Hanford sandy loam (10.7%), Traver sandy loam (7.3%), Hanford coarse sandy loam (6.0%), and Tujunga loamy sand (1.9%). The Project site is at an elevation of 211–225 feet above mean sea level (Google 2022).

Table 1. Special-status species, their listing status, habitats, and potential to occur on or near the Project site.

Species	Status[1]	Habitat	Potential to Occur[2]
Federally and State-Listed Endangered or Threatened Species			
Hairy Orcutt grass (*Orcuttia pilosa*)	FE, SE, 1B.1	Vernal pools and depressions.	**None.** Habitat lacking; no vernal pools or depressions were found on the Project site.
Palmate-bracted bird's beak[3] (*Chloropyron palmatum*)	FE, SE, 1B.1	Alkaline flats below 200 feet elevation.	**None.** Habitat lacking; no alkaline flats found on the Project site; the single CNDDB record known from within 5 miles of the Project site is considered extirpated.
Monarch California overwintering population (*Danaus plexippus*)	FC	Groves of trees within 1.5 miles of the ocean that produce suitable micro-climates for overwintering such as high humidity, dappled sunlight, access to water and nectar, and protection from wind.	**None.** Habitat lacking; the Project site is not within 1.5 miles of the ocean.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Elderberry (*Sambucus* spp.) plants having basal stem diameter greater than 1" at ground level.	**None.** Habitat lacking; the Project site is outside the currently recognized range of this species; no elderberry plants were found on the Project site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools; some artificial depressions, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	**None.** Habitat lacking; no vernal pools or other potentially suitable aquatic features were found on the Project site.
Delta smelt (*Hypomesus transpacificus*)	FT, SE	River channels and tidally influenced sloughs.	**None.** Habitat lacking; no connectivity to the aquatic habitat this species requires.

California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal pools or seasonal ponds for breeding; small mammal burrows for upland refugia in natural grasslands.	**None.** Habitat lacking; the Project site consisted of urban and residential areas surrounded by agricultural and urban development; the Project site is outside the current known local range of this species.
Blunt-nosed leopard lizard (*Gambelia silus*)	FE, SE, FP	Upland scrub and sparsely vegetated grassland with small mammal burrows.	**None.** Habitat lacking; the Project site consisted of urban land cover; the Project site is outside the current known local range of this species.
Giant garter snake (*Thamnophis gigas*)	FT, ST	Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season.	**None.** Habitat lacking; no suitable aquatic resources in the survey area; the Project site is outside the current known local range of this species.
Swainson's hawk[3] (*Buteo swainsoni*)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	**Present.** A pair of Swainson's hawks soared near the work area along West Church Avenue during the 6 July 2022 reconnaissance survey. Potential nest trees were present within the 0.5-mile survey area.
Tricolored blackbird (*Agelaius tricolor*)	ST	Freshwater emergent wetlands, some agricultural fields, grassland, and silage fields near dairies.	**None.** Habitat lacking; no suitable aquatic resources or agricultural land in the survey area.
Fresno kangaroo rat[3] (*Dipodomys nitratoides exilis*)	FE, SE	Sandy, alkaline, saline, and clay soils in upland scrub and grassland.	**None.** Habitat lacking; the Project site consisted of urban and residential areas surrounded by agricultural and urban development.

San Joaquin kit fox[3] (*Vulpes macrotis mutica*)	FE, ST	Grassland and upland scrub and fallowed agricultural lands adjacent to natural grasslands or upland scrub.	**None.** Habitat lacking; the Project site consisted of urban and residential areas, lacked adjacent natural lands, and the most recent record from within 5 miles was from 1975.
State Species of Special Concern			
Western spadefoot[3] (*Spea hammondii*)	SSSC	Open areas with sandy or gravelly soil that allow rain pools to gather for breeding.	**None.** Habitat lacking; no rain pools or other ephemeral water bodies found on the Project site.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	SSSC	Chenopod scrub and valley and foothill grassland with small mammal burrows for refuge and reproduction.	**None.** Habitat lacking; the Project site consisted of urban and residential areas surrounded by agricultural and urban development.
Burrowing owl[3] (*Athene cunicularia*)	SSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	**Low.** The inactive agricultural field and settling ponds south of West Church Avenue contained friable soil and burrows large enough to support the species.
Mountain plover (*Charadrius montanus*)	SSSC	Open, flat, and arid habitats with low, sparse vegetation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas surrounded by agricultural and urban development.
American badger (*Taxidea taxus*)	SSSC	Variable. Open, dry areas with friable soils and small mammal populations in grassland, conifer forest, and desert.	**None.** Habitat lacking; the Project site consisted of urban and residential areas surrounded by agricultural and urban development.
California Rare Plants			
Alkali-sink goldfields[3] (*Lasthenia chrysantha*)	1B.1	Vernal pools and wet saline flats below 320 feet elevation.	**None.** Habitat lacking; the Project site lacked saline flats and consisted of

			urban and residential areas.
Brittlescale (*Atriplex depressa*)	1B.2	Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools below 1000 feet elevation.	**None.** Habitat lacking; the Project site lacked clay soils and consisted of urban and residential areas.
California alkali grass[3] (*Puccinellia simplex*)	1B.2	Scrub, meadows, seeps, grassland, vernal pools, saline flats, and mineral springs below 3000 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	1B.2	Saline or alkaline soils in the Central Valley below 230 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Heartscale[3] (*Atriplex cordulata* var. *cordulata*)	1B.2	Grasslands, meadows and seeps, and chenopod scrub communities with saline or alkaline soils.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Lesser saltscale[3] (*Atriplex minuscula*)	1B.2	Saline or alkaline soils in the San Joaquin Valley below 328 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Lost Hills crownscale (*Atriplex coronata* var. *vallicola*)	1B.2	Chenopod scrub and valley and foothill grassland at 150–2000 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Munz's tidy-tips (*Layia munzii*)	1B.2	Alkaline, clay soils at 164–2625 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Recurved larkspur[3] (*Delphinium recurvatum*)	1B.2	Poorly drained, fine, alkaline soils in grassland and saltbush scrub at 98–1969 feet elevation.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.

Sanford's arrowhead (*Sagittaria sanfordii*)	1B.2	Ponds and ditches at sea level to 650 feet elevation.	**None.** Habitat lacking; the Project site lacked the wetland habitat this species requires.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	1B.2	Vernal pools, swales, and roadside ditches in valley and foothill grassland at 328–4166 feet elevation.	**None.** Habitat lacking; the Project site lacked the wetland habitat this species requires.
Subtle orache (*Atriplex subtilis*)	1B.2	Saline depressions.	**None.** Habitat lacking; the Project site consisted of urban and residential areas.
Vernal pool smallscale (*Atriplex persistens*)	1B.2	Alkaline vernal pools in the Central Valley below 377 feet elevation.	**None.** Habitat lacking; the Project site lacked the vernal pools this species requires.

CDFW (2022), CNPS (2022), USFWS (2022a).

Status[1]	**Potential to Occur[2]**	
FE = Federally listed Endangered	None:	Species or sign not observed; conditions unsuitable for occurrence.
FT = Federally listed Threatened	Low:	Neither species nor sign observed; conditions marginal for occurrence.
FP = State Fully Protected	Moderate:	Neither species nor sign observed; conditions suitable for occurrence.
SE = State listed Endangered	High:	Neither species nor sign observed; conditions highly suitable for occurrence.
ST = State listed Threatened	Present:	Species or sign observed; conditions suitable for occurrence.
SSSC = State Species of Special Concern		

CNPS California Rare Plant Rank[1]:	**Threat Ranks[1]:**
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.2 – moderately threatened in California (20-80% of occurrences).
3 – plants about which more information is needed.	0.3 – not very threatened in California (<20% of occurrences).
4 – plants have limited distribution in California.	

[3]Record from within 5 miles of the Project site.

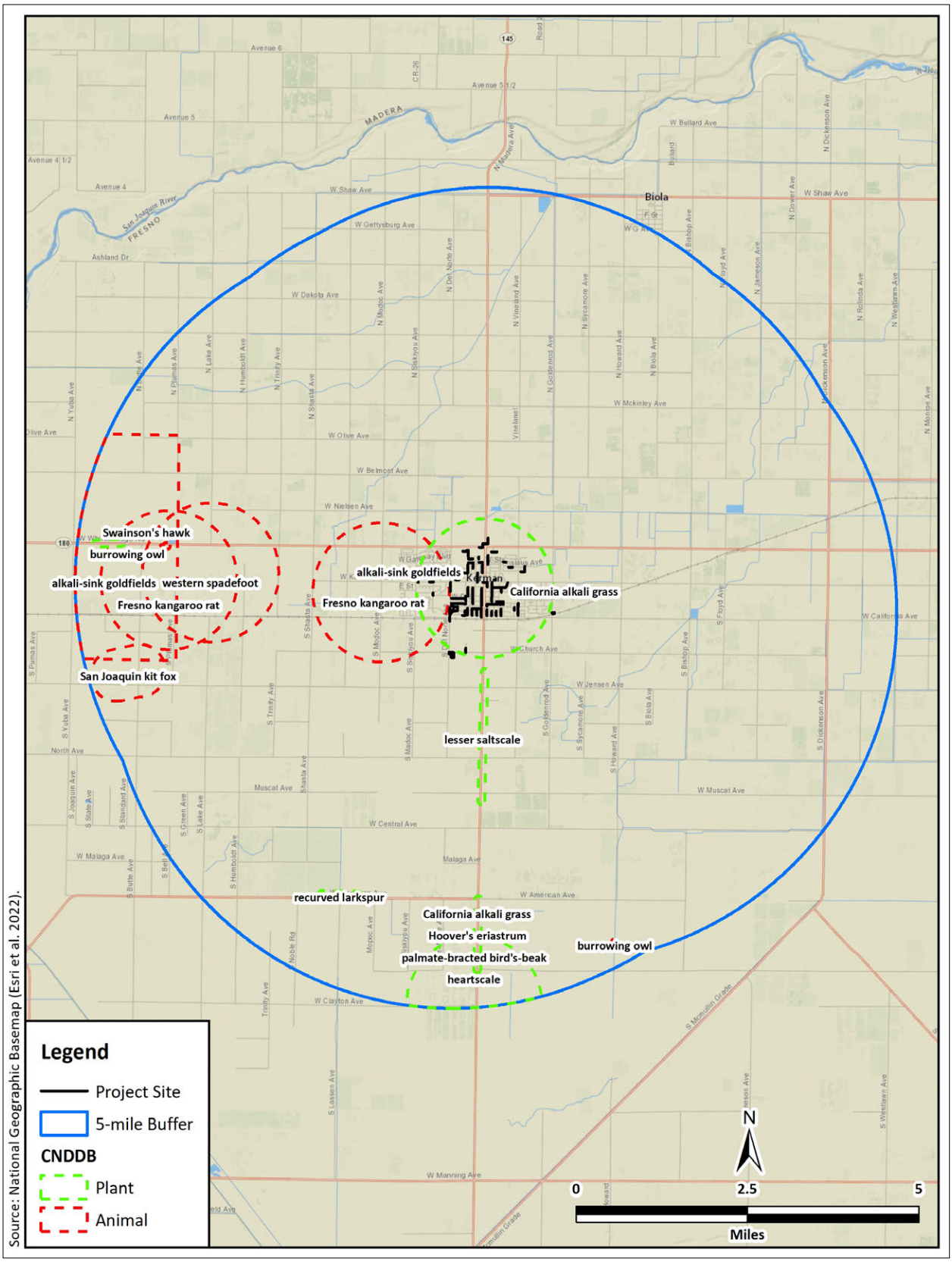

Figure 4. CNDDB occurrence map.

3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The Project site supported developed, ruderal, and agricultural land covers. Work areas consisted of paved roads, alleys, parking lots, and existing facilities (Figures 5 and 6). The work area north of West Whitesbridge Avenue was bordered by an orchard to the north (Figure 7). The work area along South Del Norte Avenue south of A Street was bordered by an inactive agricultural field to the southeast and an orchard to the southwest (Figure 8). The work areas along West Church Avenue were bordered by orchards, inactive agricultural fields, a church, and the wastewater treatment plant settling ponds (Figures 9 and 10). The work area along South Goldenrod Avenue was within a graveled pump facility surrounded by a detention basin, railroad tracks, an orchard, and residential development (Figure 11). All other work areas were surrounded by residential and commercial development.

Figure 5. Photograph of a sewer line repair site, looking south along First Avenue, showing Kerman High School and residential development.

Figure 6. Photograph of a sewer line repair site, looking west along an alley between First Street and Del Norte Avenue, showing residential development.

Figure 7. Photograph of a sewer line repair site, looking northwest from a commercial parking lot, showing commercial development with an orchard in the background.

Figure 8. Photograph of a sewer line repair site, looking south from Del Norte Avenue south of A Street, showing ruderal land cover, railroad tracks, an orchard, and an inactive agricultural field.

Figure 9. Photograph of a sewer line repair site, looking west from West Church Avenue, showing an inactive agriculture field and the wastewater treatment plant (left) with an orchard in the background.

Figure 10. Photograph of an inactive agricultural field adjacent to a sewer line repair site, looking south from West Church Avenue.

Figure 11. Photograph of the Lift Station Number 17 site, looking southeast from South Goldenrod Avenue.

3.2.2 Plant and Animal Species Observed

A total of 15 plant species (three native and 12 nonnative), 11 bird species, and two mammal species were observed during the survey (Table 2).

Table 2. Plant and animal species observed during the reconnaissance survey.

Common Name	Scientific Name	Status
Plants		
Family Amaranthaceae		
Prostrate pigweed	*Amaranthus blitoides*	Native
Family Asteraceae		
Flax-leaved horseweed	*Erigeron bonariensis*	Nonnative
Prickly lettuce	*Lactuca serriola*	Nonnative
Family Boraginaceae		
Salt heliotrope	*Heliotropium curassavicum*	Native
Family Brassicaceae		
Shortpod mustard	*Hirschfeldia incana*	Nonnative
Family Chenopodiaceae		
Lamb's quarters	*Chenopodium album*	Nonnative
Russian thistle	*Salsola tragus*	Nonnative
Family Euphorbiaceae		
Spotted spurge	*Euphorbia maculata*	Nonnative
Family Malvaceae		
Cheeseweed	*Malva parviflora*	Nonnative
Family Onagraceae		
Cutleaf evening primrose	*Oenothera laciniata*	Nonnative
Family Poaceae		
Bermuda grass	*Cynodon dactylon*	Nonnative
Ripgut brome	*Bromus diandrus*	Nonnative
Soft brome	*Bromus hordeaceus*	Nonnative
Family Solanaceae		
Jimsonweed	*Datura wrightii*	Native
Family Zygophyllaceae		
Puncture vine	*Tribulus terrestris*	Nonnative
Birds		
Family Accipitridae		
Red-tailed hawk	*Buteo jamaicensis*	MBTA, CFGC
Swainson's hawk	*Buteo swainsoni*	ST, MBTA, CFGC
Family Columbidae		
Eurasian collared-dove	*Streptopelia orientalis*	Nonnative
Rock pigeon	*Columbia livia*	Nonnative
Family Corvidae		

Common Name	Scientific Name	Status
American crow	*Corvus brachyrhynchos*	MBTA, CFGC
California scrub-jay	*Aphelocoma californica*	MBTA, CFGC
Family Fringillidae		
House finch	*Haemorhous mexicanus*	MBTA, CFGC
Family Hirundinidae		
Barn swallow	*Hirundo rustica*	MBTA, CFGC
Family Icteridae		
Brown-headed cowbird	*Molothrus ater*	MBTA, CFGC
Family Mimidae		
Northern mockingbird	*Mimus polyglottos*	MBTA, CFGC
Family Passeridae		
House sparrow	*Passer domesticus*	Nonnative
Mammals		
Family Geomyidae		
Botta's pocket gopher	*Thomomys bottae*	--
Family Sciuridae		
California ground squirrel	*Otospermophilus beecheyi*	--

MBTA = Protected under the Migratory Bird Treaty Act (16 USC § 703 et seq.); CFGC = Protected under the California Fish and Game Code (FGC §§ 3503 and 3513), ST = State-listed as Threatened.

3.2.3 Bald Eagle and Golden Eagle

The Project site and surrounding 0.5-mile buffer (Figure 3) lacked foraging and nesting habitat for bald eagle and golden eagle.

3.2.4 Nesting Birds and the Migratory Bird Treaty Act

Migratory birds could nest on or near the Project site. Bird species that may nest on or near the property include, but are not limited to, northern mockingbird (*Mimus polyglottos*), red-tailed hawk (*Buteo jamaicensis*), and American crow (*Corvus brachyrhynchos*). Large trees within 0.5 miles of the Project site could provide nesting substrates for raptors.

3.2.5 Regulated Habitats

No habitats regulated under jurisdiction of the CDFW, SWRCB, or USACE were present in the survey area. The nearest river, the San Joaquin River, is about 6 miles north of the Project site. According to the Wild and Scenic Rivers Act, there are no designated wild and scenic reaches of the San Joaquin River (USFWS 2022a).

No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds are present in the survey area. In addition, no EFH, defined by the Magnuson-

Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, are present in the survey area.

The Project site is not within a flood plain (FEMA 2022). The nearest flood plain limit is approximately 150 feet southeast of the sewer line repair site adjacent to South Goldenrod Avenue.

3.3 Special-Status Species

The following two special-status species could occur on or near the Project site based on the presence of habitat:

3.3.1 Swainson's Hawk

Swainson's hawk is a state listed as threatened raptor in the family Accipitridae. It is a migratory breeding resident of Central California. It uses open areas including grassland, sparse shrubland, pasture, open woodland, and annual agricultural fields such as grain and alfalfa to forage on small mammals, birds, and reptiles. After breeding, it eats mainly insects, especially grasshoppers (Bechard et al. 2020). Swainson's hawks build small to medium-sized nests in medium to large trees near foraging habitat. The nesting season begins in March or April in Central California when this species returns to its breeding grounds from wintering areas in Mexico and Central and South America. Nest building commences within one to two weeks of arrival to the breeding area and lasts about one week (Bechard et al. 2020). One to four eggs are laid and incubated for about 35 days. Young typically fledge in about 38–46 days and tend to leave the nest territory within 10 days of fledging (Bechard et al. 2020). Swainson's hawks depart for the non-breeding grounds between August and September.

There is one species occurrence record of Swainson's hawk from within 5 miles of the Project site: a 2018 CNDDB occurrence approximately 4 miles to the west. A pair of Swainson's hawks were observed near work areas along West Church Avenue during the 6 July 2022 reconnaissance survey. Potential nest trees were within 0.5 miles of some work areas. Therefore, the species is present and could nest near the Project site.

3.3.2 Burrowing Owl

Burrowing owl is a member of the family Strigidae recognized as a species of special concern by the CDFW (CDFW 2022). Burrowing owl depends on burrow systems excavated by other species such as California ground squirrel (*Otospermophilus beecheyi*) and American badger (*Taxidea taxus*) (Poulin et al. 2020). Burrowing owl uses burrows for protection from predators, weather, as roosting sites, and dwellings to raise young (Poulin et al. 2020). It commonly perches outside burrows on mounds of soil or nearby fence posts. Prey types include insects, especially grasshoppers and crickets, small mammals, frogs, toads, and lizards (Poulin et al. 2020). The nesting season begins in March, and incubation lasts 28–30 days. The female incubates the eggs

while the male forages and delivers food items to the burrow-nest; young then fledge between 44 and 53 days after hatching (Poulin et al. 2020). Adults can live up to 8 years in the wild.

There are two species occurrence records of burrowing owl from within 5 miles of the Project site: a 1984 CNDDB occurrence approximately 3.6 miles to the west and a 2016 CNDDB occurrence approximately 4.9 miles to the southeast. Several burrows that could support burrowing owl were present in the inactive agricultural field south of the sewer repair sites along West Church Avenue (Figure 10). The nearby settling ponds and detention basins could also provide foraging habitat. However, the habitat was previously disturbed, and no sign of burrowing owl was detected during the 6 July 2022 reconnaissance survey. Therefore, the potential for this species to occur on the Project site is low.

4.0 Environmental Effects

4.1 Effects Determinations

4.1.1 Critical Habitat

We conclude the Project will have **no effect** on critical habitat as no critical habitat has been designated or proposed in the survey area.

4.1.2 Special-Status Species

We conclude the Project **may affect but is not likely to adversely affect** the state-listed as threatened Swainson's hawk and the state species of special concern burrowing owl. The Project is not expected to affect any other special-status species due to the lack of habitat or known occurrence records for those species near the Project site.

4.1.3 Migratory Birds

We conclude the Project **may affect but is not likely to adversely affect** nesting migratory birds.

4.1.4 Regulated Habitats

We conclude the Project will have **no effect** on regulated habitats due the lack of such habitats in the survey area.

4.2 Significance Determinations

This Project, which will result in temporary impacts to urban and disturbed land, will not: (1) substantially reduce the habitat of a fish or wildlife species (criterion a) as no such habitat is present on the Project site; (2) cause a fish or wildlife population to drop below self-sustaining levels (criterion b) as no such potentially vulnerable population is known from the area; (3) threaten to eliminate a plant or animal community (criterion c) as no such potentially vulnerable communities are known from the area; (4) substantially reduce the number or restrict the range of a rare or endangered plant or animal (criterion d) as no such potentially vulnerable species are known from the area; (5) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS (criterion f) as no riparian habitat or other sensitive natural community was present in the survey area; (6) 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 (criterion g) as no impacts to wetlands will occur; (7) conflict with any local policies or ordinances protecting biological resources, such as a tree

preservation policy or ordinance (criterion i) as no trees or biologically sensitive areas will be impacted; or (8) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (criterion j) as no such plan has been adopted. Thus, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for Criteria BIO1 and BIO2 below. These criteria were used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (significance criterion e).

- Criterion BIO2: 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 (significance criterion h).

4.2.1 Direct and Indirect Effects

4.2.1.1 Potential Effect #1: Have a Substantial Effect on Any Special-Status Species (Criterion BIO1)

The Project could adversely affect, either directly or through habitat modifications, two special-status animals that occur or may occur on or near the Project site. Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species or substantially modifies its habitat could constitute a significant impact. We recommend that Mitigation Measures BIO1 and BIO2 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation Measure BIO1. Protect nesting Swainson's hawks.

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site.

3. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.

Mitigation Measure BIO2. Protect burrowing owls.

1. Conduct focused burrowing owl surveys to assess the presence/absence of burrowing owl at the well installation site in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) and *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1997). These involve conducting four pre-construction survey visits.
2. If a burrowing owl or sign of burrowing owl use (e.g., feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.

4.2.1.2 Potential Effect #2: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

The Project has the potential to impede the use of nursery sites for native birds protected under the Migratory Bird Treaty Act (MBTA). Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird in the Project site or immediately adjacent to the construction zone could constitute a significant effect. We recommend that the mitigation measure BIO3 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO3. Protect nesting birds.

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.
2. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area

to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

4.2.2 Cumulative Effects

The Project will involve repairing and replacing existing sewer line at various locations throughout the city, repairing and replacing equipment at the City's wastewater treatment plant, and upgrading Lift Station Number 17. Although all land adjacent to the Project site was previously disturbed by commercial, residential, or agricultural development, the Project site provides potential foraging and nesting habitat for Swainson's hawk, burrowing owl, and migratory birds. However, implementing Mitigation Measures BIO1, BIO2, and BIO3 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

4.2.3 Unavoidable Significant Adverse Effects

No unavoidable significant adverse effects on biological resources would occur from implementing the Project.

5.0 Literature Cited

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Appendix A. USFWS list of threatened and endangered species.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: June 14, 2022
Project Code: 2022-0054179
Project Name: Kerman Sewer Improvement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0054179
Event Code: None
Project Name: Kerman Sewer Improvement Project
Project Type: Wastewater Pipeline - Maintenance / Modification - Below Ground
Project Description: The Project will involve replacing and rehabilitating sewer mains at various locations throughout the City of Kerman.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.7235922,-120.05653982142857,14z

Counties: Fresno County, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

Mammals

NAME	STATUS
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5150	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

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

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

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

Flowering Plants

NAME	STATUS
Palmate-bracted Bird's Beak *Cordylanthus palmatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1616	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Colibri Ecological Services
Name: Ryan Slezak
Address: 9493 N Ft Washington Rd
City: Fresno
State: CA
Zip: 93730
Email rslezak@colibri-ecology.com
Phone: 5592426178

Appendix B. CNDDB occurrence records.

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Kearney Park (3611968) OR Herndon (3611978) OR Raisin (3611958) OR San Joaquin (3612052) OR Kerman (3612061) OR Jamesan (3612062) OR Gravelly Ford (3612072) OR Biola (3612071) OR Helm (3612051))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	165 235	955 S:4	0	0	0	0	0	4	3	1	4	0	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	178 230	2011 S:10	1	5	1	1	0	2	3	7	10	0	0
Atriplex cordulata var. cordulata heartscale	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	185 200	66 S:6	2	1	1	0	2	0	6	0	4	0	2
Atriplex cordulata var. erecticaulis Earlimart orache	G3T1 S1	None None	Rare Plant Rank - 1B.2	175 175	23 S:1	0	0	0	0	1	0	1	0	0	0	1
Atriplex coronata var. vallicola Lost Hills crownscale	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	190 190	75 S:1	0	0	0	0	0	1	1	0	1	0	0
Atriplex depressa brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2	185 190	60 S:4	0	3	0	0	0	1	4	0	4	0	0
Atriplex minuscula lesser saltscale	G2 S2	None None	Rare Plant Rank - 1B.1	185 200	52 S:9	2	3	1	0	0	3	9	0	9	0	0
Atriplex persistens vernal pool smallscale	G2 S2	None None	Rare Plant Rank - 1B.2	182 182	41 S:1	0	1	0	0	0	0	1	0	1	0	0
Atriplex subtilis subtle orache	G1 S1	None None	Rare Plant Rank - 1B.2	185 190	24 S:5	2	0	0	0	1	2	5	0	4	1	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	165 237	2548 S:10	0	2	3	0	0	5	5	5	10	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Charadrius montanus mountain plover	G3 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	175 175	90 S:1	0	0	0	0	0	1	1	0	1	0	0
Chloropyron palmatum palmate-bracted bird's-beak	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	195 195	25 S:1	0	0	0	0	1	0	1	0	0	0	1
Delphinium recurvatum recurved larkspur	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	180 195	119 S:3	0	0	1	0	2	0	2	1	1	0	2
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2T3 S3	Threatened None		225 225	271 S:1	0	0	0	0	0	1	1	0	1	0	0
Dipodomys nitratoides exilis Fresno kangaroo rat	G3TH SH	Endangered Endangered	IUCN_VU-Vulnerable	180 225	12 S:7	0	0	2	0	3	2	7	0	4	1	2
Eriastrum hooveri Hoover's eriastrum	G3 S3	Delisted None	Rare Plant Rank - 4.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	170 235	47 S:5	0	0	0	0	5	0	5	0	0	0	5
Eryngium spinosepalum spiny-sepaled button-celery	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	183 183	108 S:1	0	0	0	0	0	1	1	0	1	0	0
Gambelia sila blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	180 200	418 S:4	0	0	0	0	0	4	4	0	4	0	0
Lasthenia chrysantha alkali-sink goldfields	G2 S2	None None	Rare Plant Rank - 1B.1	185 220	55 S:9	0	0	0	0	4	5	4	5	5	4	0
Layia munzii Munz's tidy-tips	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	170 170	68 S:1	0	0	0	0	0	1	1	0	1	0	0
Masticophis flagellum ruddocki San Joaquin coachwhip	G5T2T3 S2?	None None	CDFW_SSC-Species of Special Concern	180 180	96 S:1	0	1	0	0	0	0	0	1	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Northern Claypan Vernal Pool	G1	None		175	21	0	0	0	0	0	1	1	0	1	0	0
Northern Claypan Vernal Pool	S1.1	None		175	S:1											
Orcuttia pilosa	G1	Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	310	35	0	0	0	0	1	0	1	0	0	1	0
hairy Orcutt grass	S1	Endangered		310	S:1											
Perognathus inornatus	G2G3	None	BLM_S-Sensitive IUCN_LC-Least Concern	265	140	0	0	0	0	1	0	1	0	0	0	1
San Joaquin pocket mouse	S2S3	None		265	S:1											
Puccinellia simplex	G3	None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	180	80	0	0	0	0	3	3	4	2	3	1	2
California alkali grass	S2	None		220	S:6											
Sagittaria sanfordii	G3	None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	185	143	0	0	0	0	0	2	1	1	2	0	0
Sanford's arrowhead	S3	None		295	S:2											
Spea hammondii	G2G3	None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	183	1422	0	0	2	1	0	1	2	2	4	0	0
western spadefoot	S3	None		202	S:4											
Taxidea taxus	G5	None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	180	594	0	1	0	0	0	2	1	2	3	0	0
American badger	S3	None		315	S:3											
Thamnophis gigas	G2	Threatened	IUCN_VU-Vulnerable	195	373	0	0	0	0	1	0	1	0	0	1	0
giant gartersnake	S2	Threatened		195	S:1											
Valley Sacaton Grassland	G1	None		175	9	0	0	1	0	0	0	1	0	1	0	0
Valley Sacaton Grassland	S1.1	None		175	S:1											
Vulpes macrotis mutica	G4T2	Endangered		185	1020	0	0	0	0	0	4	4	0	4	0	0
San Joaquin kit fox	S2	Threatened		302	S:4											

Appendix C. CNPS plant list.

California Native Plant Society

Search Results

19 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3611968:3611978:3611958:3612052:3612061:3612062:3612072:3612071:3612051**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2
Atriplex cordulata var. *erecticaulis*	Earlimart orache	Chenopodiaceae	annual herb	Aug-Sep(Nov)	None	None	G3T1	S1	1B.2
Atriplex coronata var. *vallicola*	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	None	None	G4T3	S3	1B.2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	None	None	G2	S2	1B.1
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	(Apr)Jun-Sep(Oct)	None	None	G1	S1	1B.2
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	CE	G1	S1	1B.1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2
Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	Mar-Jul	FD	None	G3	S3	4.2
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual/perennial herb	Apr-Jun	None	None	G2	S2	1B.2
Goodmania luteola	golden goodmania	Polygonaceae	annual herb	Apr-Aug	None	None	G3	S3	4.2
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2
Layia munzii	Munz's tidy-tips	Asteraceae	annual herb	Mar-Apr	None	None	G2	S2	1B.2
Orcuttia pilosa	hairy Orcutt grass	Poaceae	annual herb	May-Sep	FE	CE	G1	S1	1B.1
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G3	S2	1B.2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2
Trichostema ovatum	San Joaquin bluecurls	Lamiaceae	annual herb	(Apr-Jun)Jul-Oct	None	None	G3	S3	4.2

Showing 1 to 19 of 19 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 14 June 2022].

Appendix D. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley

RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

Swainson's Hawk Technical Advisory Committee

May 31, 2000

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

Speed
Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

Visual and Aural Ques
Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between. hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

Distractions
Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

Notes and Species Observed
Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC member or CDFG biologist.

Survey dates **Justification and search image**	**Survey time**	**Number of Surveys**
I. *January-March 20 (recommended optional)*	*All day*	*1*

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

II. *March 20 to April 5*	*Sunrise to 1000* *1600 to sunset*	*3*

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

III. *April 5 to April 20*	*Sunrise to 1200* *1630 to Sunset*	***3***

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

IV. *April 21 to June 10*	*Monitoring known nest sites only* ***Initiating Surveys is not recommended***	

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

V. ***June 10 to JuIy 30 (post-fledging)*** ***Sunrise to 1200*** ***3***
1600 to sunset

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, ‘and adults.

DETERMINING A PROJECT'S POTENTIAL
FOR IMPACTING SWAINSON'S HAWKS

LEVEL OF RISK	REPRODUCTIVE SUCCESS (Individuals)	LONGTERM SURVIVABILITY (Population)	NORMAL SITE CHARACTERISTICS (Daily Average)	NEST MONI-TORING
HIGH	Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity)	Loss of available foraging area.	Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc. *Do not include general cultivation practices in evaluation.*	**MORE**
		Loss of nest trees.		
	Loss of nest tree after nest building is begun prior to laying eggs.	Loss of potential nest trees.		
	Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old.	Cumulative: Multi-year, multi-site projects with substantial noise/personnel disturbance.		
	Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old.	Cumulative: Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm.		
	Heavy machinery only working within 50 yards of nest.		Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use. *Do not include general cultivation practices in evaluation.*	
	Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old.	Cumulative: Single-season projects with activities that "blend" well with site's "normal' activities.		
LOW	All project activities (personnel and machinery) greater than 200 yards from nest.			**LESS**

Appendix C

Cultural Resources Report

CLASS III INVENTORY/PHASE I SURVEY, KERMAN SEWER IMPROVEMENT PROJECT, KERMAN, FRESNO COUNTY, CALIFORNIA

Prepared for:

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PN 36790.09

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MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for the Kerman Sewer Improvement Project (Project), Fresno County, California. The Project is located in Sections 1, 12, and 13, Township 14 South, Range 17 East; and Sections 6, 7, and 8, Township 14 South, Range 18 East, Mount Diablo Base and Meridian (MDBM), in the City of Kerman, Fresno County, California. ASM Affiliates, Inc., conducted this study, with Peter A. Carey, M.A., RPA, serving as Principal Investigator. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Quality Act (CEQA).

A records search of site files and maps was conducted at the Southern San Joaquin Valley Archaeological Information Center (IC), California State University, Bakersfield. This investigation determined that eleven previous studies were conducted within the Project APE, and one resource has been identified within it. Resource P-10-003930 is a small portion of the Hartford and Summit Lake Railway that was part of the Southern Pacific Railroad constructed in 1912. Four additional surveys had been previously conducted within 0.5-miles (mi) of the Project APE and two previously recorded resource were identified within this same radius. Resource P-10-005808 is a historic building that consists of a single-story cottage that appears to date to the early 1960s (Freeman & Flores 2009), and P-10-007097 is a historic structure that consists of the Houghton Canal. This earthen and concrete-lined canal is one of the large laterals of the Fresno Irrigation District that appears on maps as early as 1891 (Anderson 2013).

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed on July 29th, 2022. Based on the NAHC records, no sacred sites or traditional cultural places had been identified within or adjacent to the Project. Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact-list. No responses were received from interested parties.

The Area of Potential Effect (APE) for the project was defined in consultation with the City of Kerman. The horizontal APE was defined as the area of all potential ground surface disturbance, which includes staging, work and lay-down areas. The horizontal APE is approximately 143-ac consisting of 5.3 discontinuous miles of pipeline route, the existing Kerman Wastewater Treatment Plant (WWTP), and Lift Station No.17. The vertical APE was defined as the maximum depth of subsurface disturbance, in this case the maximum depth of the existing sewer, or 10-feet (ft).

The Class III inventory/Phase I survey fieldwork was conducted in September 2022 with parallel transects spaced at 15-meter intervals walked across the APE. No historical resources or properties were discovered within the APE. Based on these results, the Kerman Sewer Improvement Project does not have the potential to result in significant impacts or adverse effects to historical resources or historic properties.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc., was retained by the Crawford and Bowen Planning, Inc. to conduct an intensive Class III inventory/Phase I cultural resources survey for the Kerman Sewer Improvement Project, City of Kerman, Fresno County, California (Figure 1). The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Protection Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources or historic properties do not occur as a result of project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the APE to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

Peter Carey, M.A., RPA, served as principal investigator. ASM Associate Archaeologist/Crew Chief Robert Azpitarte, B.A., conducted the fieldwork.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American outreach; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the APE.

1.1 PROJECT LOCATION

The Project is located in Sections 1, 12, and 13, Township 14 South, Range 17 East, and Sections 6, 7, and 8, Township 14 South, Range 18 East, MDBM, in the City of Kerman, Fresno County, California. This places the Project area on the open flats of the San Joaquin Valley approximately 11-mi west of the city of Fresno. Elevation within the Project area, which is flat, ranges between approximately 215 to 225-feet (ft) above mean sea level (amsl).

1.2 PROJECT DESCRIPTION AND APE

The City of Kerman proposes upgrades to existing sewer system infrastructure within the city limits. These improvements will be made to the existing WWTP, Lift Station No. 17, and a discontinuous series of sewer line segments within the city. The total length of the proposed sewer upgrades totals 5.3-mi. With an applied buffer of 50-ft on all project aspects, the Area of Potential Effects (APE) for the proposed Project totals approximately 143-ac. Currently the APE consists of the WWTP, Lift Station No. 17, paved streets, residential front yards with planted grass, paved parking lots, undeveloped portions of private property, and dirt road rights-of-way (ROW). The

vertical APE, consisting of the maximum depth of the Kerman Sewer Improvement Project is 10-ft.

1.3 REGULATORY CONTEXT

1.3.1 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

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

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

1.3.2 National Historic Preservation Act Section 106

NHPA Section 106 is applicable to federal undertakings, including projects financed or permitted by federal agencies regardless of whether the activities occur on federally managed or privately-owned land. Its purpose is to determine whether adverse effects will occur to significant cultural resources, defined as "historical properties" that are listed in or determined eligible for listing in the National Register of Historic Places (NRHP). The criteria for NRHP eligibility are defined at 36 CFR § 60.4 as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:
>
> (A) are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (B) are associated with the lives of persons significant in our past; or
>
> (C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) have yielded or may be likely to yield, information important in prehistory or history.

There are, however, restrictions on the kinds of historical properties that can be NRHP listed. These have been identified by the Advisory Council on Historic Preservation (ACHP), as follows:

> Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
>
> (a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
>
> (b) A building or structure removed from its original location, but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
>
> (c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
>
> (d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance. (http://www.achp.gov/nrcriteria.html)

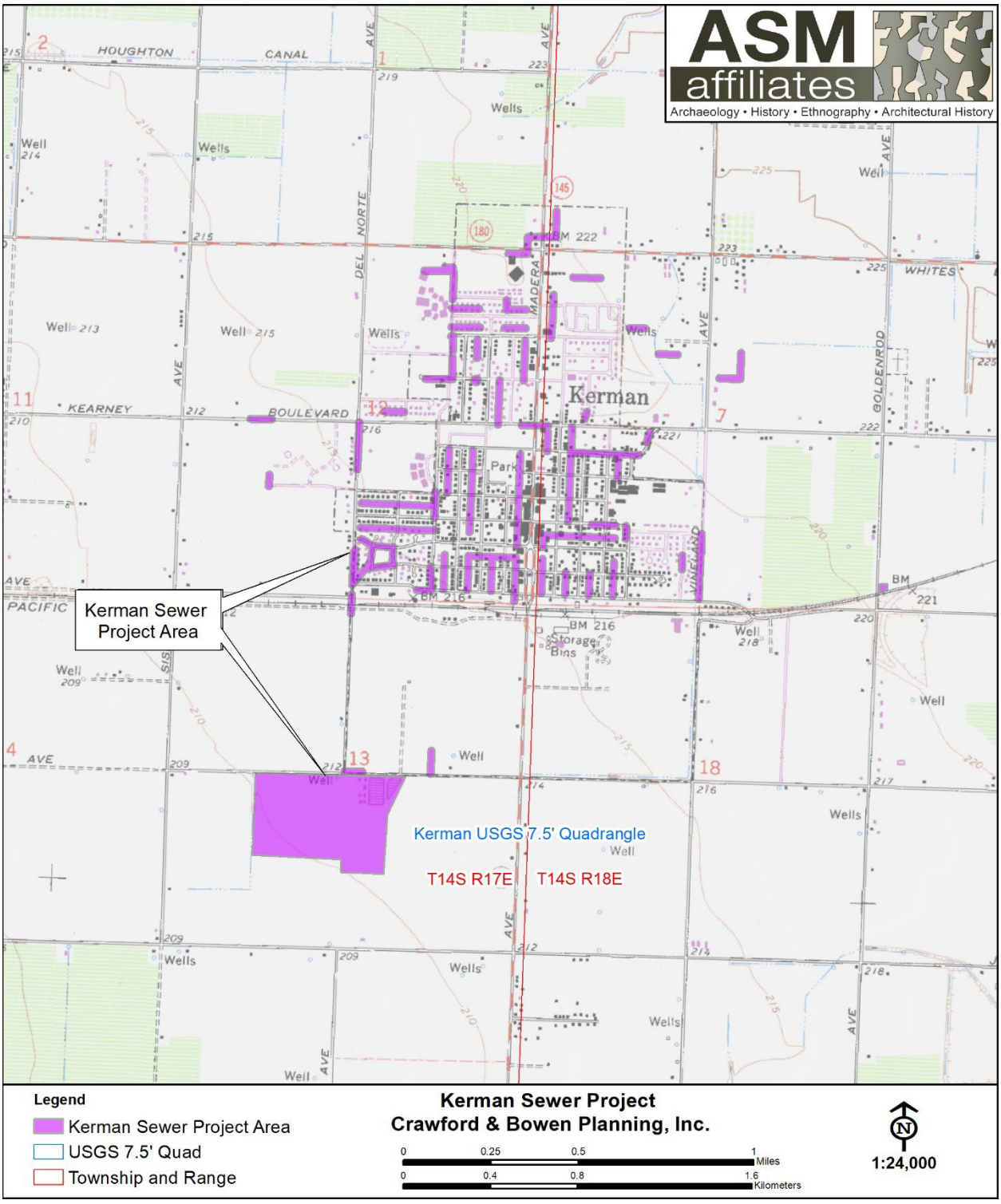

Figure 1. Location of Kerman Sewer Improvement Project, Kerman, Fresno County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the study area is located at between roughly 215 and 225-ft elevation amsl on the open flats of the San Joaquin Valley, about 11-mi west of Fresno, California. Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands, grading into riparian environments and marshlands further south toward the north bank of Tulare Lake (Preston 1981). The study area and immediate surroundings have been urbanized and/or farmed and grazed for many years and no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation. Currently, the study area consists of commercial and residential development.

A Caltrans geoarchaeological study that includes the City of Kerman area provides a guide for the likelihood of subsurface archaeological deposits within the APE (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A map was created from this information that ranked locations in 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. This map can be employed to provide a general measure of the potential for buried archaeological deposits in any given location. According to this model, the APE has a Low to Moderate potential for buried archaeological deposits. The presence of buried sites and cultural resources is therefore considered to be possible but not necessarily likely within the APE.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north, as well as other reservations in the foothills and Sierras. The result is

an unfortunate scarcity of ethnographic detail on valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the APE most likely lies in Pitkachi (Pitkache in Latta [1977:163]) territory. The village for this group nearest the APE was *Gewachiu* (*Gewachie* in Latta [1977:163]) on the south bank of the San Joaquin River, approximately 8-mi northwest of the study area.

Most Yokuts groups, regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps,

often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokut descendants continue to live in Fresno County, either on tribal reservations, or in local towns and communities.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received much less archaeological attention than other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981; Rosenthal et al. 2007). Indeed, Gifford and Schenk (1926) were the first to identify the similarity between southern San Joaquin Valley prehistory and the archaeological record along the Santa Barbara Channel, a specific observation that was analytically verified more recently by Siefkin (1999). This circumstance, overlooked by some subsequent researchers, has resulted in confusion in the literature due to the application of the Sacramento Delta chronology on the local archaeological record, where it has never really fit. Based on these sources and this observation, the general prehistory of the region can be outlined in south-central California terms, as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper. Both fluted and stemmed points are particularly common around lake margins (e.g., Wallace and Riddell 1993), suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time. Little else is known about these earliest peoples at this point, however, in part because the locations of their recorded sites occur in lakeshore contexts that have experienced repetitive transgressive and regressive shorelines, resulting in mixed archaeological deposits.

Substantial evidence for human occupation of California first occurs during the Early Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Little evidence for Early Horizon occupation exists in most inland portions of the state with (again) the exceptions being along lakeshores, partly due to a severe cold and dry paleoclimatic period occurring at this time. Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period known climatically as the Holocene Maximum (circa 3800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. Archaeologically, it was marked by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture, which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also hypothesized to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California or the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam, and Kitanemuk, may have moved into the region at this time, rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes, and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizon transition (A.D. 800 to 1200) in the understanding of south-central California. This corresponds to the so-called Medieval Climatic Anomaly, a period of climatic instability that included major

droughts and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is also believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of people into fewer but larger villages. What is clear is that Middle Period villages and settlements were widely dispersed across the landscape; many at locations that lack contemporary evidence of fresh water sources. Late Horizon sites, in contrast, are typically located where fresh water was available during the historical period, if not currently.

The Late Horizon then can be best understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic life-ways recorded by anthropologists extend at least 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley. The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (Caltrans 2007).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd

1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state-wide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866 and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the (http://www.mariposaresearch.net/santaclararesearch/SCBIOS/hmiller.html). They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (http://exiledonline.com/california-

class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield where their descendants live today (Boyd 1997).

The city of Fresno (originally "Fresno Station"), located approximately 10.6-mi east of the study area and the county seat for Fresno County, was founded in 1872 and incorporated in 1885. It was initially developed as a railway station along the Central Pacific Railroad, but quickly expanded with the development of irrigation in the region. Farmers saw success with the cultivation of wheat, grapes, and cattle. Eventually, Fresno County became one of the most agriculturally-rich counties in the United States (https://www.fresno.gov/darm/historic-preservation/history-of-fresno/).

Kerman (previously Collis) was first established as a water pumping station along the Southern Pacific Railroad in 1891 (https://cityofkerman.net/about/). One of the most historic events in Kerman occurred at this site in 1892 when the Sontag and Evans gang held up a San Francisco-Los Angeles Passenger train (Duke 1910). In 1900, William G Kerckhoff and Jacob Mansar purchased 3,027-ac for agricultural pursuits in the Kerman area and they later formed the Fresno Irrigated Farms Company. Collis was renamed Kerman in 1906 by combining the two men's names. The city was incorporated in 1946 and the surrounding area remains predominantly agricultural to this day (https://cityofkerman.net/about/).

2.5 RESEARCH DESIGN

2.5.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4000 to 1500 YBP. It involves a period during which the prehistoric population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better

environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4,000 years old.

A second fundamental issue involves the place of site in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W&S Consultants 2006). The size and locations of the region's lakes, sloughs and delta channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of Tulare Lake was relatively stable, because it abutted the Kettleman Hills. But the northern, southern and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of southern San Joaquin Valley prehistory relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake

systems in the valley bottoms can be expected to have mediated some of the effects of desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.5.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley "horse culture," including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system and the development of new tribal organizations and ethnic identities; and, ultimately, the adoption of the Euro-American society's economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in

traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria C and A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.5.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Caltrans has also identified an evaluation matrix aiding determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

> 1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.
>
> 2. *Integrit*y addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).
>
> 3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.
>
> 4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.
>
> 5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

For agricultural sites, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associate values with major historical trends or individuals. Historical landscapes might also be considered.

Historical structures, which are most likely to be pertinent to the current study area, are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associate values with major historical trends or individuals, and C for potential design or engineering importance.

3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known within it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on 12 July 2022. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the APE; (ii) if the APE had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the surrounding region was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The Native American Heritage Commission (NAHC) Sacred Lands files were also searched to determine whether tribal cultural resources are present.

According to the IC records search (Confidential Appendix A), eleven previous reports cover portions of the Project APE (Table 1), and one known resource has been identified within the APE (Table 2). Four additional surveys have been previously conducted within 0.5-miles (mi) of the Project APE (Table 3), and two resources were identified within 0.5-mi of the APE (Table 4).

Table 1. Survey Reports within the APE

Report No.	Year	Author (s)/Affiliation	Title
FR-00245	1988	Brady, Jon L., and Allan C. Beck; California State University, Fresno	Negative Archaeological survey Report for Route 180 Widening
FR-00246	1996	Caltrans	Historic Property Survey Report: Widening and AC Overlay of Route 180 Between Mendota and Kerman in Fresno County
FR-00247	1989	Parks, Bonnie W.; Caltrans	Historic Architectural Survey Report Historic Resource Evaluation Report for Widening and AC Overlay of Route 180 Between Mendota and Kerman in Fresno County
FR-01799	2002	Kus, James S.; James S. Kus & Associates	Negative Archaeological Survey Report for the City of Kerman Water System
FR-02188	2006	Hatoff, Brian W.; URS Corporation	Collocation Submission Package, FCC Form 621 for 15201 West California Avenue, Kerman, California
FR-02281	2005	Metzler, Valerie A., and Beth A. Gordon; RESCOM Environmental Corporation	New Tower Submission Packet FCC Form 620 15201 West California Avenue
FR-02414	2010	Leach-Palm, Laura, Paul Brandy, Jay King, Pat Mikkelson, Libby Seil, Lindsay Hartman, and Jill Bradeen; Far Western Anthropological Group, Inc.	Cultural Resources Assessment of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties: Summary of Methods and Findings
FR-02501	2008	Binning, Jeanne	Historic Property Survey Report for Route 180 Planned Westside Expressway from I-5 to Valentine Avenue, Fresno, Fresno County, California

Report No.	Year	Author (s)/Affiliation	Title
FR-02505	2006	Leach-Palm, Laura, Jeffrey Rosenthal, Brian Byrd, Pat Mikkelson, and Sharon Waechter; Far Western Anthropological Group, Inc.	Preliminary Assessment of the Archaeological Sensitivity for the Route 180 Westside Expressway Route Adoption Study Between Interstate 5 and the City of Fresno, California Interstate 5 PM 9.0 (KP 14.5) to 06-FRE-180 PM 54.2 (KP 87 Valentine Avenue) EA06-451400
FR-02506	2006	Brady, Jon, and Rebecca Bunse; Caltrans	Final Historic Resources Sensitivity Study Route 180 Westside Expressway Route Adoption Study
FR-02754	2013	Kile, Mark; URS Corporation	Cultural Resources Assessment for the Proposed Construction of Well No. 18, Kerman, Fresno County, California

Table 2. Resources within the APE

Resource	Type	Age
P-10-003930	Structure	Historic

Table 3. Survey Reports within 0.5-mi of the APE

Report No.	Year	Author (s)/Affiliation	Title
FR-00576	1988	Noble, Daryl, and Larry Weigel; Caltrans	Negative Archaeological Survey Report for the Placement of an AC Overlay on Existing Pavement for Route 145, Fresno County, California
FR-02582	2013	Billat, Lorna	New Tower Submission Packet FCC Form 620, for Kerman High School, CN2712
FR-02755	2013	Kile, Mark; URS Corporation	Cultural Resources Assessment for the Double L Mobile Ranch Park Water Service Project, Kerman, Fresno County, California
FR-03018	2020	Peak, Melinda A.; Peak & Associates, Inc.	Cultural Resources Assessment for the Tentative Vesting Tract 6302 Project Area, City of Kerman, California

Table 4. Resources within 0.5-mi of the APE

Resource	Type	Age
P-10-005808	Building	Historic
P-10-007097	Structure	Historic

Resource P-10-003930 is a small portion of the Hartford and Summit Lake Railway that was part of the Southern Pacific Railroad constructed in 1912. It is present in the southern portion of the project area. Two previously recorded resources have been identified within 0.5-mi of the Project APE. Resource P-10-005808 is a historic building that consists of a single-story cottage that appears to date to the early 1960s (Freeman & Flores 2009). This resource is located northwest of the project APE. Resource P-10-007097 is a historic structure that consists of the Houghton Canal. This earthen and concrete-lined canal is one of the large laterals of the Fresno Irrigation District that appears on maps as early as 1891 (Anderson 2013) and is located north of the Project APE.

According to historic accounts and maps, development occurs in the general vicinity of the Project area as early as 1891 (Thompson 1891) with the construction of the Southern Pacific Railroad and the initial development of the community of Kerman just north of the proposed Kerman Sewer Improvement Project. The spur line of the Hartford and Summit Lake Railway —appears in the APE as early as 1922, the earliest available USGS quadrangle of the project area. According to historic USGS quadrangles and aerial photography, this spur line was removed sometime between 1958 and 1980. Remnants of this resource are no longer present within the APE.

3.2 TRIBAL COORDINATION

A records search of the Native American Heritage Commission (NAHC) Sacred Lands File was also completed for the Project. The results were negative (Confidential Appendix A). Outreach letters and follow-up emails were sent to the tribal organizations on the NAHC contact list (Confidential Appendix A). There were no responses received from interested parties.

Based on the results of the IC and NAHC records searches, the tribal outreach, the review of historical maps, and the Meyer et al. (2010) geoarchaeological sensitivity model, the APE appears to have low archaeological sensitivity.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventory/Phase I survey of the Kerman Sewer Improvement Project APE was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A. on 1 September 2022. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone) where applicable; the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms.

The approximately 143-ac APE was surveyed using parallel transects spaced at 15-m intervals.

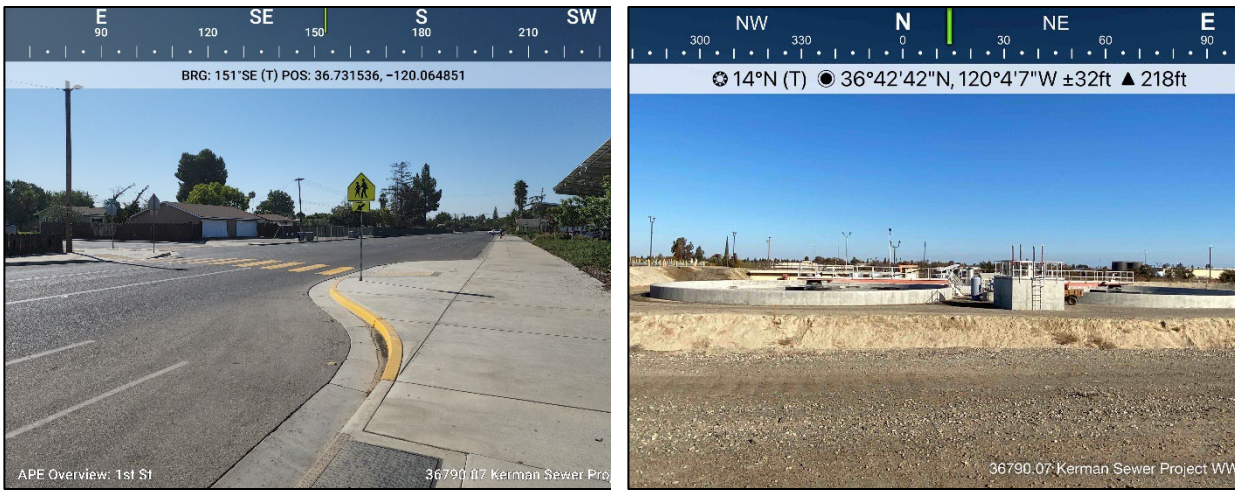

Figure 2. Typical setting for the Kerman Sewer Improvement Project APE.

4.2 SURVEY RESULTS

The APE is in Sections 1, 12, and 13 of Township 14 South, Range 17 East; and Sections 6, 7, and 8 of Township 14 South, Range 18 East, MDBM within the city limits of Kerman, Fresno County, California. The total length of the proposed sewer upgrades totals 5.3-mi. With an applied buffer of 50-ft, the proposed Project will total approximately 143-ac. Currently the Project area consists of paved streets, residential front yards with planted grass, paved parking lots, undeveloped portions of private property, and dirt road rights-of way. The vertical APE, consisting of the maximum depth of the Kerman Sewer Improvement Project is 10-ft. This places the Project area on the open flats of the San Joaquin Valley approximately 11-mi west of the city of Fresno. Elevation within the Project area, which is flat, ranges between approximately 215 and 225-ft above mean sea level (amsl). The APE and immediate surroundings have been heavily developed for urban and agricultural use for many years and no native vegetation is present (Figure 2). Ground surface visibility was very poor throughout the APE and buffer as the majority of the project will be conducted on paved roadways. No cultural resources of any kind, however, were identified within the Kerman Sewer Improvement Project APE and buffer.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III archaeological inventory/Phase I survey was conducted for the Kerman Sewer Improvement Project, Fresno County, California. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. This indicated that eleven previous surveys have covered portions of the APE, and hat one resource was present within the area of potential effect. Resource P-10-003930 is a segment of a spur road for the Southern Pacific Railroad. This portion of the Southern Pacific is believed to have been constructed in about 1912. No other previously resources are present within the APE. Four additional previous surveys have been conducted within 0.5-mi of the project APE, and two previously recorded resources were identified within 0.5-mi of the APE. Resource P-10-005808 is a historic building that consists of a single-story cottage that appears to date to the early 1960s (Freeman & Flores 2009), and P-10-007097 is a historic structure that consists of the Houghton Canal. This earthen and concrete-lined canal is one of the large laterals of the Fresno Irrigation District that appears on maps as early as 1891 (Anderson 2013). No other previously identified resources occurred within 0.5-mi of the Project APE. The NAHC Sacred Lands Files were also consulted with negative results. Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact list. No responses from interested parties have been received.

The Class III inventory/Phase I survey fieldwork was conducted with parallel transects spaced at 15-meter intervals along the APE. No cultural resources of any kind were identified within the APE.

5.1 RECOMMENDATIONS

An intensive Class III inventory/Phase I survey demonstrated that the Kerman Sewer Improvement Project APE, Kerman, Fresno County, California, does not contain significant or unique historical resources or historic properties. A finding of No Historic Properties Affected/No Significant Impact is recommended. In the unlikely event that cultural resources are encountered during project construction or use, however, it is recommended that an archaeologist be contacted to assess the discovery.

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CONFIDENTIAL APPENDICES