



MITIGATED NEGATIVE DECLARATION

City of Bakersfield – Andrea Avenue Sewer
System Connection Project

June 2025

PREPARED FOR:

City of Bakersfield
1600 Truxtun Avenue
Bakersfield, CA 93301

PREPARED BY:



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Initial Study/Mitigated Negative Declaration
**City of Bakersfield – Andrea Avenue Sewer System Connection
Project**

Prepared for:

City of Bakersfield
1600 Truxtun Avenue
Bakersfield, CA 93301

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June 2025



Project Reference No. 026-2102

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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 installing pipelines and connecting an unincorporated area (Andrea Avenue) to the sewer system of the City of Bakersfield in Kern County, California. Andrea Avenue is a Kern County island located within the City of Bakersfield's city limits. The proposed project area consists of a mix of residential, commercial, and industrial uses. Wastewater generated by users in the Project Area is currently disposed using on-site septic systems. The proposed Project intends to discontinue the use of the septic systems by connecting to the City's sewer system. Refer to Chapter Two – Project Description for more information. implementing a series of upgrades to the City of Bakersfield (City) sewer system.

The City of Bakersfield 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 with 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 the 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 Project Background

Andrea Avenue is a county island located within the City of Bakersfield's city limits. The proposed project area consists of a mix of residential, commercial, and industrial uses. Wastewater generated by users in the Project Area is currently disposed using on-site septic systems. A Sewer Connection Feasibility Study entitled "Andrea Avenue – Unincorporated Area" was prepared by AM Consulting Engineers in February 2020 to address the needed improvements. Please refer to that document in Appendix A for specific project characteristics.

The project area lies within three separate Census Block Groups. The Median Household Income (MHI) in the three Block Groups ranges from \$29,167 to \$47,552, using the latest 2014-2018 5-year ACS estimates. With MHIs less than 60% of the state MHI, two of the three Block Groups are considered Severely Disadvantaged Communities (SDACs).

A septic tank survey was conducted in 2017 to document septic system information and performance as well as community interest in connecting to a public sewer system. The full results of the survey are included in Appendix A. Each resident was visited twice and mailed a survey, with 160 responses received from 207 surveys. Noteworthy results include 43 percent of residents reporting having issues with their system, and 78 percent of those reporting overflows or a fast fill up time as their primary issue. Approximately 21 percent have pumped their tank two or more times within the last 3 years. Regarding greywater disposal, 39 percent of residents use their septic tank while 43 percent use a combination their yard, the curb, or the street. When asked if they would prefer a public sewer connection or a septic tank, 86 percent of residents preferred the public sewer connection.

The Project is being partially funded by the Clean Water State Revolving Fund (CWSRF). Consequently, the environmental review for the Project must meet state requirements under the California Environmental Quality Act (CEQA) as well as certain federal requirements. To comply with the applicable federal statutes and authorities, the Environmental Protection Agency (EPA) established specific "CEQA-Plus" requirements in its operating agreement with the State Water Resources Control Board (SWRCB), which administers the CWSRF program. As part of the proposed Project, an "Environmental Package" will also be submitted to the Water Board to satisfy these federal requirements. The SWRCB provided technical assistance funding

so that Self Help Enterprises (SHE) could investigate alternatives to provide a centralized community sewer service to residents and businesses associated with the Project.

2.2 Location

The approximately 105-acre proposed Project site is within a Kern County island in the southeastern portion of the City of Bakersfield, south of State Route 58 and east of State Route 99 (Figure 1). It is generally southwest of the intersection of White Lane and South Union Avenue (Figure 2). The project area is more specifically bound between El Pacheco Road to the south, South Chester Avenue to the north, South Union Avenue to the east, and Monitor Street to the west.

2.3 Setting and Surrounding Land Use

The Project site supported dense commercial and residential landcover. The eastern edge of the survey area consisted mostly of commercial infrastructure. West of Union Avenue the Project site was primarily residential with streets, sidewalks, and single-family homes. Just south of White Lane was an alley between homes where a 6-inch main pipe will be installed. Just south of the Project site was an electric transmission corridor that provides connectivity to natural areas west of the Project site. Two stormwater retention ponds were within the Project site, one at Janet Avenue and Eve Street and another at Joe Avenue and Eve Street. The Project site is surrounded by residential and commercial properties on all sides, with some open space to the east and northeast in the form of an airport and a large recycling plant sorting station.

Figure 1 – Regional Location Map

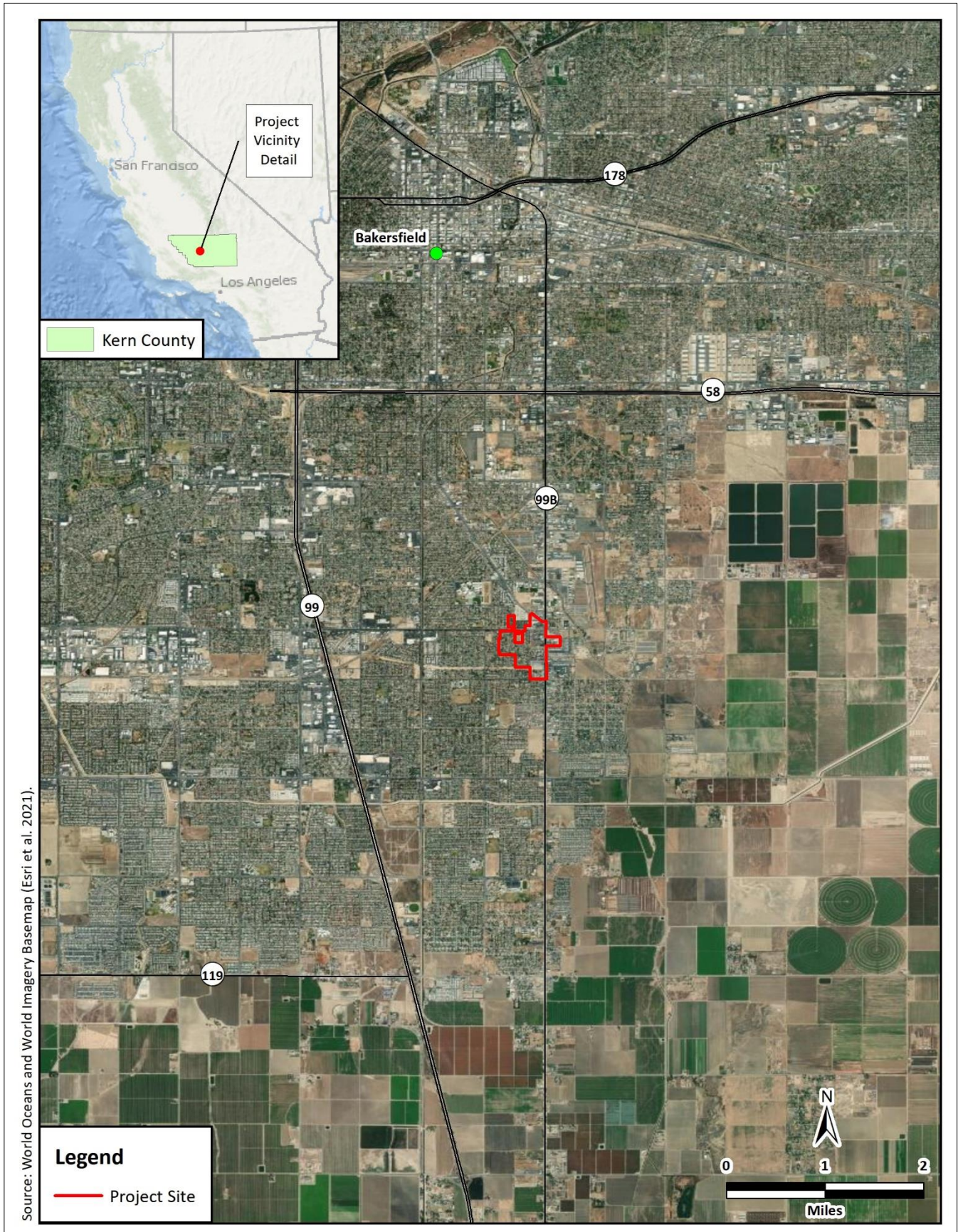
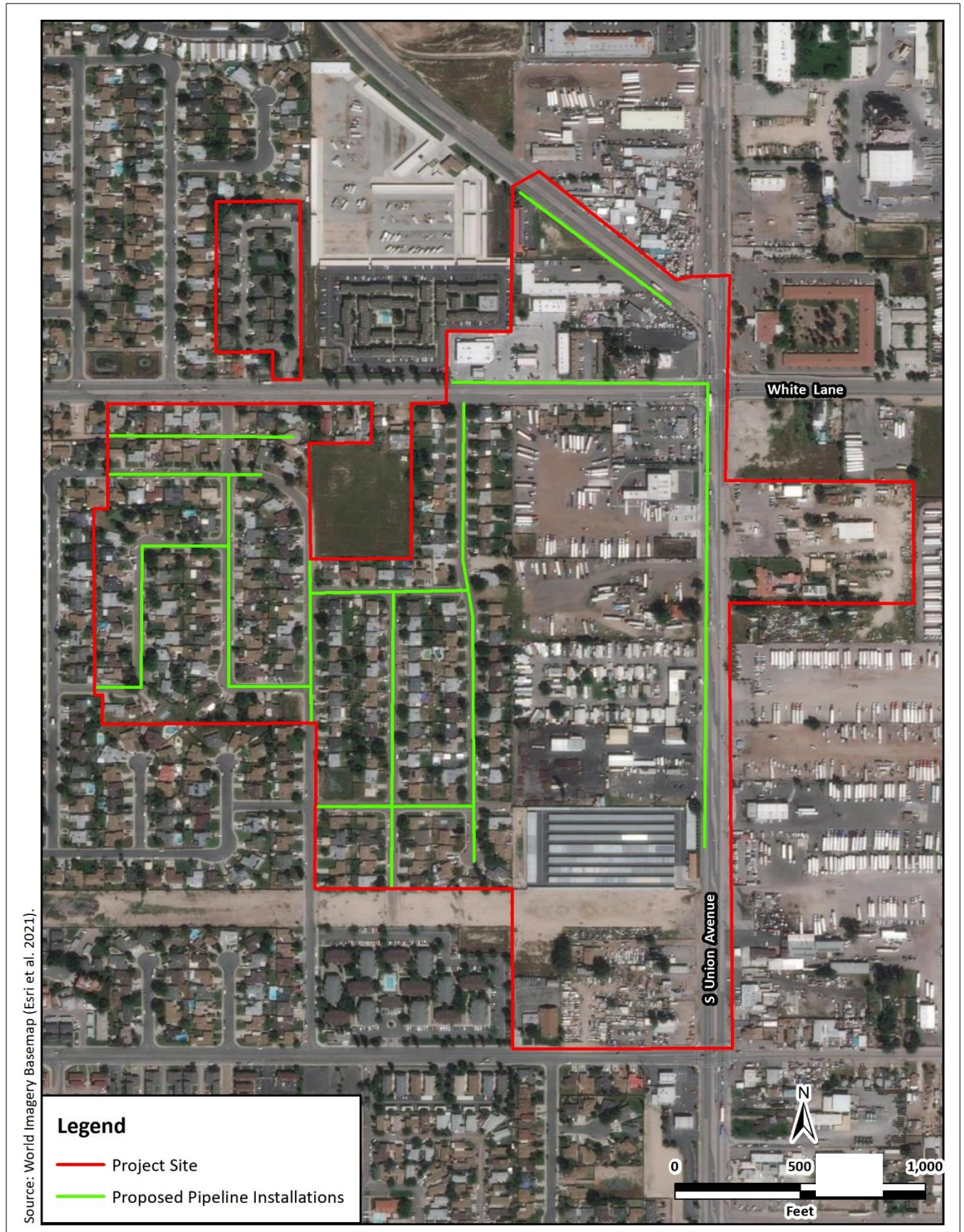


Figure 2 – Project Site Map



2.4 Project Description

A Sewer Connection Feasibility Study entitled “Andrea Avenue – Unincorporated Area” was prepared by AM Consulting Engineers in February 2020 to address the needed improvements. Please refer to that document in Appendix A for specific project characteristics. A summary of Project activities is included herein.

The proposed Project consists of connecting to the City of Bakersfield sewer system and annexing the Project Area to the City of Bakersfield. The Project Area is an unincorporated island surrounded by the City of Bakersfield. The City of Bakersfield collection system is very close to the Project Area and offers several potential connection points to convey sewer from the project area. Sewer that enters the City’s sewer collection system from the Project Area would flow to Wastewater Treatment Plant No. 2 located at 1700 E. Planz Road.

This Project will involve the following components:

1. Installing approximately 620 feet of 4-inch service connection to houses and properties.
2. Installing approximately 440 feet of 6-inch PVC main.
3. Installing approximately 8250 feet of 8-inch PVC main.
4. Installing approximately 3490 feet of 10-inch PVC main.
5. Conducting approximately 26,900 square feet of trenching and surface restoration.
6. Installing approximately 35 4-inch-diameter manholes.
7. Installing sewer system connections at 279 residential dwellings, 236 commercial units, and 126 industrial units.

Project Schedule

Construction is expected to begin in June 2026 with an estimated construction schedule of 18 months.

2.5 Objectives

The primary objectives of the proposed project are as follows:

- To provide adequate and safe sewer services to its customers.
- To prevent system failures and potential contamination associated with the septic systems currently within the Project Area.

- To connect the Project Area to the City's existing sewer system 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 Bakersfield.
- Regional Water Quality Control Board approval.
- State Water Board approval.

Chapter 3

IMPACT ANALYSIS

Initial Study Checklist

3.1 Environmental Checklist Form

Project title:

City of Bakersfield – Andrea Avenue Sewer System Connection Project

Lead agency name and address:

City of Bakersfield
1600 Truxtun Avenue
Bakersfield, CA 93301

Contact person and phone number:

Yazid Alawgarey, Assistant Planner: (661) 326-3191(City of Bakersfield)

Project location:

See Section 2.1

Project sponsor's name/address:

City of Bakersfield

General plan designation:

Various, area-wide sewer connection project

Zoning:

Various, area-wide sewer connection 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. No responses were received from any Tribes. 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.

Yazid Alawgarey, Assistant

Planner City of Bakersfield

Date

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

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. The proposed Project involves the installation of a sewer collection system that will replace an existing septic system. Improvements consist of the installation of underground pipelines, at-grade manholes, and sewer connections at 279 residential dwellings, 236 commercial units and 126 industrial units. Views of surrounding areas will not be impacted by the

Project, since all of the finished work will be below grade or at-grade. As such, the proposed Project will not impede any scenic vistas.

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. There is a *less than significant impact*.

Mitigation Measures: None are required.

- 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?

Less than Significant Impact. The Project will occur in a heavily urbanized area. The majority of the work will be installed underground (pipelines) or at-grade (manholes). Once installed, these improvements would not degrade the existing visual character of the area. Construction activities will be seen by the residences and businesses within the immediate vicinity and by vehicles driving in the City; however, construction activities will be temporary.

As such, the proposed Project will not substantially degrade the existing visual character or quality of the area or its surroundings and will not conflict with applicable zoning and regulations governing scenic quality. The impact will be *less than significant*.

Mitigation Measures: None are required.

- d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. Currently the sources of light in the project area are from building lights, the vehicles traveling along surrounding roads, and some security lighting at nearby businesses and some residences. No new lighting will be associated with pipeline installation or operation. Accordingly, the proposed Project would not create substantial new sources of light or glare. There is *no impact*.

Mitigation Measures: None are required.

¹ California Department of Transportation. California Scenic Highway Mapping System. Kern County.

<https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>. Accessed October 2021.

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 proposed Project involves the installation of a sewer collection system that will replace an existing septic system. The pipeline and associated infrastructure will largely occur within the existing right of way and will be installed underground. The Project Area is urbanized and is surrounded by urban development. There are no farmlands on or adjacent to the site and no Williamson Act parcels will be affected. 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.

No land conversion from farmland or forest land would occur as a result of the proposed Project. The proposed Project includes new sewer mains, largely within the existing right-of-way. 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

- Conflict with or obstruct implementation of the applicable air quality plan?
- 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?
- 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 PM₁₀.² To meet Federal Clean Air Act (CAA) requirements, the SJVAPCD has multiple air quality attainment plan (AQAP) documents, including:

² San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. <http://www.valleyair.org/aqinfo/attainment.htm>. Accessed December 2017.

- Extreme Ozone Attainment Demonstration Plan (EOADP) for attainment of the 1-hour ozone standard (2004);
- 2007 Ozone Plan for attainment of the 8-hour ozone standard;
- 2007 PM₁₀ 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 PM₁₀, if the project-generated emissions of either of the ozone precursor pollutants (ROG or NO_x), PM₁₀, 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, NO_x, PM₁₀, 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, PM₁₀ and PM_{2.5}. Therefore, the pollutants of concern for this impact are ozone precursors, regional PM₁₀, 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 follows³:

Pollutant/ Precursor	Construction Emissions (tpy)	Operational Emissions (permitted) (tpy)	Operational Emissions (non- permitted) (tpy)
CO	100	100	100
NO_x	10	10	10
ROG	10	10	10
SO_x	27	27	27
PM₁₀	15	15	15
PM_{2.5}	15	15	15

The sewer collection system will not generate emissions once it is constructed. The estimated annual construction emissions are shown below. The Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 9.0.0 was utilized to estimate emissions

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_3-19-15.pdf. Page 80. Accessed October 2021.

generated from project construction. Modeling results are summarized in Table 1 and the full Road Construction Emissions Model output files are provided in Appendix A.

Table 1
Proposed Project Construction Emissions

Pollutant/ Precursor	Construction Emissions (tpy)	Threshold/ Exceed?
CO	6.55	100/N
NOx	6.47	10/N
ROG	0.68	10/N
SOx	0.01	27/N
PM ₁₀	2.37	15/N
PM _{2.5}	0.69	15/N
CO ₂ e	1,212.76	n/a

As shown in Table 1, construction emissions would be below the SJVAPCD's threshold for annual construction emissions. However, the SJVAPCD has implemented Regulation VIII measures for dust control related to construction projects, which are applicable to the Project and will be enforced by the City and the City's contractor.

The nearest sensitive receptors to the proposed Project site are the residential houses located along the proposed pipeline alignments. 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 since all sewer disposal will occur via underground pipelines. 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 September 2021 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 herein. The results of the BRE are summarized as follows:

Environmental Setting

The Project site supported dense commercial and residential landcover. The eastern edge of the survey area consisted mostly of commercial infrastructure. West of Union Avenue the Project site was primarily

residential with streets, sidewalks, and single-family homes. Just south of White Lane was an alley between homes where a 6-inch main pipe will be installed. Just south of the Project site was an electric transmission corridor that provides connectivity to natural areas west of the Project site. Two stormwater retention ponds were within the Project site, one at Janet Avenue and Eve Street and another at Joe Avenue and Eve Street. The Project site is surrounded by residential and commercial properties on all sides, with some open space to the east and northeast in the form of an airport and a large recycling plant sorting station. Refer to Section 3.2 of Appendix B for additional information and photographs of these areas.

Desktop Review

The USFWS species list for the Project site included 12 species listed as threatened or endangered under the FESA (USFWS 2021a, Table 1, Appendix A of Appendix B). Eleven of those species could not 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). One species, the San Joaquin kit fox (*Vulpes macrotis mutica*), could potentially occur within the survey area. As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2021a, Appendix A of Appendix B).

Searching the CNDDDB for records of special-status species from the Gosford 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 326 records of 60 species (Table 1, Appendix B). Of those 60 species, 13 were not considered further because federal or state regulatory agencies or public interest groups do not recognize them through special designation (Appendix B). Of the remaining 47 species, 13 are known from within 5 miles of the Project site (Table 1, Figure 4 of Appendix B). Ten of those 13 species are not expected to 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, (3) their absence during the reconnaissance survey, or (4) a combination thereof. However, three species, the San Joaquin kit fox, the western mastiff bat, and the burrowing owl (*Athene cunicularia*), could occur on or near the Project site.

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded 20 taxa (CNPS 2021, Appendix C of Appendix B), one of which has a CRPR of 2B, and 19 of which have a CRPR of 1B (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).

The Project site is underlain by Kimberlina — Urban land — Cajon complex, 0 to 2% percent slopes (NRCS 2021). The Project site is at an elevation of 369–381 feet above mean sea level (Google 2021).

Reconnaissance Survey

Colibri Senior Scientist Joshua Reece and Field Scientist Jackson Xiong conducted a field reconnaissance survey of the Project site on 11 August 2021. 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 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/lisa>) 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.

Effects Determinations

Critical Habitat

The BRE concludes the Project will have no effect on critical habitat as no critical habitat has been designated or proposed in the survey area.

Special-Status Species

As identified in the BRE, the Project may affect but is not likely to adversely affect the federally listed as endangered and state listed as threatened San Joaquin kit fox. A second special-status species, the mastiff bat, could occur on the Project site. However, the proposed activities would not remove roosting habitat or disturb the nighttime feeding activities of this species. Therefore, no effects to this species are expected. 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. These species are discussed further herein.

Migratory Birds

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

Regulated Habitats

Two fenced-in stormwater retention ponds are within the residential portions of the Project site along Eve Street. These features are likely regulated by the RWQCB. However, impacts to these features are not anticipated. Therefore, the Project will have no effect on regulated habitats.

Direct and Indirect Impacts

The Project could adversely effect, either directly or through habitat modifications, one special-status animal species – the San Joaquin kit fox, that 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. Therefore, Mitigation Measure BIO-1 (below) will be included in the conditions of approval to reduce the potential impact to a less than- significant level.

Mitigation Measures:

BIO – 1 Protect San Joaquin Kit Fox

1. To protect San Joaquin kit fox, a qualified biologist shall conduct a preconstruction survey to identify potential dens (burrows larger than 4 inches in diameter) in suitable land cover types. If potential San Joaquin kit fox dens are present, their disturbance and destruction shall be avoided. If occupied or potentially occupied San Joaquin kit fox dens are adjacent to the work area, exclusion zones shall be implemented following USFWS procedures. Exclusion zones shall be determined based on the type of den and current use: Potential Den—50 feet; Known Den—100 feet; Natal or Pupping Den—to be determined on a case-by-case basis in coordination with USFWS and CDFW. All pipes greater than 4 inches in diameter stored on the construction site shall be capped, and exit ramps shall be installed in trenches and other excavations to avoid direct mortality. When possible, construction shall be conducted outside of the breeding season from October 1 to November 30. U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior or During Ground Disturbance (USFWS 2011) shall also be followed.

- 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. In addition, no EFH, defined by the Magnuson-Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, were present in the survey area.

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. Therefore, Mitigation Measure BIO-2 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measures:

BIO – 2 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, preconstruction 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

The Project is subject to CEQA, which holds municipal and state agencies accountable for impacts to the cultural environment. If a project has the potential to cause substantial adverse change in the characteristics of an important cultural resource, known as a “historical resource” under CEQA—either through demolition, destruction, relocation, alteration, or other means—then the project is judged to have a significant impact on the environment (CEQA Guidelines, Section 15064.5[b]). Given that the project will involve ground-disturbing activities and demolition, it has the potential to impact historical resources, if present, within the Project area.

In addition, because the proposed Project will be funded through the State Water Resources Control Board’s Clean Water State Revolving Fund, a joint federal-state program, it is federal undertaking per Title 36, Code of Federal Regulations, Section 800.16(y) subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Title 54, U.S. Code, Section 306108). As such, the lead federal agency must consider whether a project will have an adverse effect on historic properties (i.e., resources that are eligible for inclusion on the National Register of Historic Places) within the Project Area of Potential Effects (APE).

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper and dignified treatment of the remains and associated grave artifacts.

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.

Methodology

The proposed Project involves the installation of a sewer collection system that will replace an existing septic system. To meet State and federal requirements, the City retained ASM Affiliates, Inc. (ASM) 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 October 2021. The *Class III Inventory/Phase I Survey for the Andrea Avenue Sewer Project* (Cultural Study) is included as Appendix C. The results of the Cultural Study are summarized herein and were used to support the determinations made in this CEQA document.

Area of Potential Effect (APE)

The Area of Potential Effect (APE) encompasses approximately 27.5-acres of previously disturbed and developed in southeast Bakersfield, Kern County, California (See Figure 1 of Appendix C). The proposed Project will involve improvements to the existing water infrastructure within existing rights-of-way along Chester Avenue, White Lane, Union Avenue, Gordon Street, Janet Avenue, Vern Street, Rigby

Avenue, Eve Street, Joe Avenue, Kenny Street, Deborah Avenue, Johndra Avenue, and Andrea Avenue. The proposed Project will involve septic tank abandonments, manhole installations, and 6-inch, 8-inch, and 10-inch sewer mains installed within the service area. The total combined area of disturbance would encompass approximately 27.5-acres of previously disturbed land. All future staging, laydown, excavation, and construction will take place within the 27.5-acres.

Native American Outreach

A Sacred Lands File Request was submitted to the Native American Heritage Commission (NAHC) who provided a list of applicable Native American Tribes. Tribal organizations on the NAHC contact list were sent letters requesting their concerns or the opportunity to consult on the project in August - October 2021. Follow-up emails were also made, following the formal letter requests. No substantive comments were received in return.⁴

Records Search and Site-Specific Research

In order to determine whether the study area had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on 9 August 2021. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project 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 records search included the study area and a half-mile buffer.

According to the IC records search (Confidential Appendix A of Appendix C), no previous surveys have been conducted within the study area, and no cultural resources of any kind are known to exist within it. An additional five (5) previous surveys have been conducted within 0.5-mi and outside of the study area (Table 1 of Appendix C). As a result of those studies, one cultural resource was identified within that radius outside of the Project area (Table 2 of Appendix C).

In addition to the records search, historic maps were examined to determine whether historical development had occurred within the APE. A review of the USGS 1910 (HTMC, 1912 ed.; 1:125,000), 1912 (HTMC, 1939 ed.; 1:125,000), and 1942 (HTMC, 1944 ed.; 1:62,500) and 1954 (HTMC, 1955 ed.; 1:24,000)

⁴ *Class III Inventory/Phase I Survey – Andrea Ave. Sewer Project*, ASM Affiliates, Inc., (Oct. 2021), Page 19.

topographical quadrangles indicates that development within portions of the APE occurred as early as 1910. Initial settlement in the Study Area occurred along dirt roads and consisted of what appear to be single-family residences located following the current street grid-pattern of White Lane and Union Avenue (then unnamed); however, these no longer exist. By 1932, Union Avenue (then Golden State Highway) had already been paved and by 1954, subdivision development appears along it. By the early 1940s, Chester Ave had been charted and a drive-In theater built northwest of the study area. No earlier structures appear to have been constructed within the APE.

Based on the records search results, the study area appeared to have low archaeological and tribal cultural resources sensitivity.⁵

Pedestrian Survey

An intensive Class III inventor/Phase I survey of the Andrea Avenue Sewer Project study area was conducted on 27 August 2021 by ASM Associate Archaeologist Robert Azpitarte, B.A. A 50-foot wide buffer was included on each side of the pipeline route and the proposed well construction/upgrade locations. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of the roads (Figure 2 of Appendix C). Also adjacent to the proposed pipe corridors were residential front yards with planted grass; paved parking lots, and undeveloped portions of private property (Figure 3 of Appendix C). Surface visibility was moderate to excellent throughout the Project APE, though planted lawn and paved areas restricted surface visibility in some areas. Careful attention was paid to any exposed ground-surface (e.g., in planters or road shoulders) immediately adjacent to paved or lawn areas to ensure survey coverage. The study area has been completely disturbed.

No cultural resources of any kind were identified within the study area as a result of the inventory.⁶

Effects Determinations

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact with Mitigation. As described in the Cultural Study, there are no cultural or historical resources that are known to occur on the Project site or in the Project area. This determination

⁵ *Class III Inventory/Phase I Survey – Andrea Ave. Sewer Project*, ASM Affiliates, Inc., (Oct. 2021), Page 20.

⁶ *Ibid*, page 21.

is based on the records search, background historical research, Native American outreach and a pedestrian survey that was conducted for the Project.

Unidentified 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.

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

Less than Significant Impact with Mitigation. The possibility exists that subsurface construction activities may encounter undiscovered archaeological resources. This would be a potentially significant impact. Implementation of Mitigation Measure CUL-1 would require inadvertently discovery practices to be implemented should previously undiscovered archeological resources be located. As such, impacts to undiscovered archeological resources would be *less than significant with mitigation incorporation*.

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 Kern 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 proposed Project involves the installation of a sewer collection system that will replace an existing septic system. 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 for the plant house to maximize energy conservation and it is expected that contractors and the City 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. 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 plant house. 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:

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.

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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☐	☐	☒	☐
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ii. Strong seismic ground shaking?

☐	☐	☒	☐
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iii. Seismic-related ground failure, including liquefaction?

☐	☐	☒	☐
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iv. Landslides?

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

☐	☐	☒	☐
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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?

☐	☐	☒	☐
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d. Be located on expansive soil, as defined in Table 18-1-B of the most recently

☐	☐	☒	☐
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VII. GEOLOGY AND SOILS

Would the project:

adopted Uniform Building Code creating substantial direct or indirect risks to life or property?

e. Have soils incapable of adequately supporting the use of septic tanks or alternative 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?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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☐	☐	☐	☒
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☐	☐	☒	☐
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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. The City of Bakersfield is located in a seismically active area and there is potential for seismic activity in the Project area. The major faults around the City of Bakersfield are San Andreas Fault, Garlock Fault, White Wolf fault, Breckenridge-Kern Canyon fault, Sierra Nevada and Pond-Poso Fault. As such, the Project Area could be subjected to strong ground shaking during an earthquake on a nearby fault. However, the proposed Project does not include the installation of any habitable structures. The Project will be required to adhere to all relevant building codes, including the California Building Code (CBC) requirements and those adopted by reference in the Bakersfield Municipal Code. Adherence to local and State regulations would result in a *less than significant impact*.

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. Given the highly seismic character of the Plan area, moderate to severe groundshaking associated with earthquakes on the nearby faults can be expected within all of the Project Area. However, the Project is not proposing any habitable structures that would be subject to risk of injury from strong seismic ground shaking or liquefaction. In addition, the site is relatively flat, which precludes the risk of landslides. The Project will be required to adhere to all relevant building codes, including the California Building Code (CBC) requirements and those adopted by reference in the Bakersfield Municipal Code. Adherence to local and State regulations would result in a *less than significant impact*.

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 relatively flat topography and 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 (a ii-aiv), the potential for landslides, liquefaction, settlement or other seismically related hazards is less than significant. As such, the Project will not be constructed on unstable soil and 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 hazards from landslide and liquefaction in the project area is less than significant. Therefore, the potential for liquefaction induced lateral spreading is also less than significant. Causes of soil instability include, but are not limited to, withdrawal of groundwater, pumping of oil and gas from underground, liquefaction, and hydro-compaction.⁷ 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.

- 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 itself is a sewer collection system project that will replace an existing septic system in the Project Area. Once the Project is constructed, use of the septic systems will be discontinued and all sewer will flow to the City's sewer system. No septic tanks or alternative waste water disposal systems are included in the proposed Project. The project has been designed to work with the soil types in the City. 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

⁷ USGS. California Water Science Center. Land Subsidence: Cause & Effect. https://ca.water.usgs.gov/land_subsidence/california-subsidence-cause-effect.html. Accessed October 2021.

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 (See Section V – Cultural Resources) 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:

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

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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☐	☐	☒	☐
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b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

☐	☐	☒	☐
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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 18 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:

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?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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☐	☐	☐	☒
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RESPONSES

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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. Since the Project is intended to improve the existing deteriorated septic systems, it is assumed to have a positive impact by reducing the number of septic breaks/leaks 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. The nearest school to the Project Area is South High School, located approximately 775 feet west of the northwestern boundary of the Project Area. 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. Since the Project is intended to improve the existing deteriorated septic system, it is assumed to have a positive impact by reducing the number of septic breaks/leaks or other issues that may result in the release of hazardous materials. Therefore, there is a *less than significant impact*.

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 compiled pursuant to Government Code Section 65962.5.⁸ The nearest site to the Project Area in the database is a location near the Bakersfield Airport at 1511 S. Union Avenue, approximately one mile north of the Project Area. However, according to the DTSC Envirostor website, the site is “Undergoing Closure”. The Project is not impacted by the site and 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. The Bakersfield Municipal Airport is located approximately ¼ mile east of the Project Area. As previously described, the Project does not include any above-grade structures and there are no habitable structures associated with the Project, thus the Project will not expose people to excessive noise or safety hazards associated with the airport. Therefore, the Project has a *less than significant impact* on any airport operations.

Mitigation Measures: None are required.

⁸ California Department of Toxic Substance Control. EnviroStor. <https://envirostor.dtsc.gov/> Accessed October 2021.

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

Less Than Significant Impact. Pipeline installation will be temporary in nature and will not cause any road closures that could interfere with any adopted emergency response or evacuation plan. Construction schedules pertaining to pipelines within roadways will be coordinated with police/fire/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 or other habitable structures 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	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐

X. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact. The proposed Project involves the installation of a sewer collection system that will replace existing septic systems currently in use in the Project Area. According to the *Feasibility Study* prepared for the Project, a survey was conducted for users in the Project Area with 43% reporting having issues with their system and 78% reported overflows or a fast fill up time as their primary issues. The proposed Project is intended to provide a Project Area-wide sewer collection system that will eliminate the existing on-site septic systems with the intent to reduce the risk of contamination currently occurring from septic system failures.

Construction

Excavation, removal of vegetation cover, and soil-impacting activities associated with construction of the Project 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 Storm Water Pollution Prevention Plan (SWPPP) to be prepared prior to commencement of Project construction activities. 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 Pollutant Discharge Elimination System (NPDES) Stormwater Program, the Project will be required to comply with existing regulatory requirements to prepare a Storm Water Pollution Prevention Plan (SWPPP) designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the 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. Preparation of a SWPPP is a regulatory requirement of the Project and thus is not listed as a mitigation measure. Compliance with the NPDES and SWPPP would ensure that the proposed Project would have a less than significant impact relative to this topic.

Operation

Once installed, the sewer system would flow to Wastewater Treatment Plant No. 2 located at 1700 E. Planz Road in Bakersfield. The Project does not include any expansion of wastewater treatment facilities or processes that would result in the production of chemicals or substances that would adversely impact local water quality beyond existing conditions. The proposed Project will generate waste that is typical of other urban users in the City of Bakersfield and will not result in any additional water releases that could potentially impact groundwater or water quality. The State Water Resources Control Board will have ultimate review and approval of the upgraded system, thereby ensuring adequate water quality standards. See also Impact Section XIX (a) herein for more information pertaining to the Project’s estimated wastewater generation characteristics and the City’s existing wastewater treatment capacity. There are no aspects of the Project that would result in changes to waste discharge requirements. 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 involves the installation of a sewer collection system that will replace existing septic systems currently in use in the Project Area. The Project will not use additional groundwater beyond what is already being used in the Project Area. Additionally, the proposed Project will not significantly interfere with groundwater recharge as it will not introduce new 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 conversion from septic systems to a sewer collection system will introduce no new non-permeable surfaces. The pipelines and other improvements will be installed within the existing road right-of-way, or other easements and will not alter any existing drainage patterns. All areas where the improvements are made will be restored to pre-construction conditions. There are no waterways in the immediate vicinity of the proposed 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. 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 involves the installation of a sewer collection system that will replace an existing septic system within the Project Area. The proposed Project is located largely within the existing streetscape within the City of Bakersfield as presented in Figure 2 in Chapter Two – Project Description. The construction of the sewer lines and appurtenances 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-construction conditions. The proposed Project involves improvements to the existing sewer infrastructure system 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 involves the installation of a sewer collection system that will replace an existing septic system within the Project Area. Construction will take place within the existing streetscape 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 alignment, 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 18 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 such as the manholes. As such, any on-going noise 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.

According to the City of Bakersfield's Noise Ordinance, Title 8 – Health and Safety Code, Section 8.36-020, construction noise is restricted between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, where the construction noise is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except where the City may for good cause exempt some construction work for a limited time. Emergency work is exempt from this section. Adherence to the Noise Ordinance will result in less than significant impacts associated with this topic.

Vibration

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.⁹ 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?

Less Than Significant Impact. The Bakersfield Municipal Airport is located approximately ¼ mile east of the Project Area. As previously described, the Project does not include any above-grade structures and there are no habitable structures associated with the Project, thus the Project will not expose people to excessive noise hazards associated with the airport. The Project is intended to improve the sewer infrastructure of the Project Area and does not change the existing noise impacts from the airport. Therefore, the Project has *a less than significant impact* on any airport operations.

Mitigation Measures: None are required.

⁹ 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 February 2019.

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

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

Less Than Significant 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 improve existing sewer infrastructure. There is a *less than significant impact*.

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
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- 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 would improve the existing Project Area sewer system. The proposed Project would not directly or indirectly induce population growth and the City's Fire Department would continue to provide service to the site. There is *no impact*.

Police Protection?

No Impact. The proposed Project would improve the existing Project Area sewer system. The proposed Project would not directly or indirectly induce population growth and the City's Police Department would continue to provide service to the site. There is *no impact*.

Schools, Parks, Other Public Facilities?

No Impact. The proposed Project would not increase the number of residents in the City, 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

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- 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 appurtenances will not generate any additional traffic (beyond construction-related traffic trips) and as such, level of service 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.

Once installed, the new pipelines 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:

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.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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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 Request was submitted to the Native American Heritage Commission (NAHC) who provided a list of applicable Native American Tribes. Tribal organizations on the NAHC contact list were sent letters requesting their concerns or the opportunity to consult on the project in August – October 2021. Follow-up phone emails were also made. No requests for consultation were received from any of the contacted Tribes. Refer to the Cultural Study in Appendix C for more information.

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. The proposed Project involves the installation of a sewer collection system that will replace existing septic systems currently in use in the Project Area. According to the *Feasibility Study* prepared for the Project, a survey was conducted for users in the Project Area with 43% reporting having issues with their system and 78% reported overflows or a fast fill up time as their primary issues. The proposed Project is intended to provide a Project Area-wide sewer collection system that will eliminate the existing on-site septic systems with the intent to reduce the risk of contamination currently occurring from septic system failures.

The *Feasibility Study* prepared for the Project provided the total estimated daily flow that would be produced by the Project. Table 4 provides the breakdown of the estimated average daily sewer discharge from the Project.

Table 4
Andrea Avenue Sewer Generation Estimates

Use	Quantity	Ave. Unit Daily Discharge	Avg. Daily Discharge (GPD)
Single-family units	216 units	301 GPD/unit	65,016
Multi-family units	63 units	277 GPD/unit	17,451
Commercial	19.59 gross acres	0.0056 cfs/GA	70,921
Industrial	7.58 gross acres	0.0075 cfs/GA	38,007
Total			191,394

Source: Andrea Avenue – Sewer Connection Feasibility Study, page 8.

As shown in Table 4, the proposed Project would generate approximately 191,394 gallons per day of wastewater. Once installed, the sewer system would flow to Wastewater Treatment Plant No. 2 located at 1700 E. Planz Road in Bakersfield (WWTP #2). WWTP #2 is a trickling filter facility with a design capacity of 25 million gallons per day and has a current average daily flow of 13.7 million gallons per day¹⁰. The proposed Project's contribution to WWTP #2's design capacity of 25 million GPD would be approximately 0.008% and thus can be served by the existing WWTP #2.

¹⁰ <https://www.bakersfieldcity.us/679/Wastewater-Treatment-Plants>, accessed October 2021.

The Project does not include any expansion of existing wastewater treatment facilities or processes that would result in the production of chemicals or substances that would adversely impact local water quality beyond existing conditions. The proposed Project will generate waste that is typical of other urban users in the City of Bakersfield and will not result in any additional water releases that could potentially impact groundwater or water quality. The State Water Resources Control Board will have ultimate review and approval of the upgraded system, thereby ensuring adequate water quality standards. There are no aspects of the Project that would result in changes to waste discharge requirements. Any impacts would be *less than significant*.

Mitigation Measures: As previously disclosed, the Project itself is the construction of a sewer collection system to replace existing septic systems. Since the Project is a “new” wastewater system, the mitigation measures identified within this CEQA document are being implemented to reduce any environmental impacts to a less than significant level (See Chapter Four – Mitigation Monitoring and Reporting Program for the applicable mitigation measures).

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

No Impact. The proposed Project includes the construction of a sewer collection system to replace existing septic systems. No new water supplies would be required as a result of this Project. There is *no 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. See Response XIX (a) above. As shown in Table 4, the proposed Project would generate approximately 191,394 gallons per day of wastewater. Once installed, the sewer system would flow to Wastewater Treatment Plant No. 2 located at 1700 E. Planz Road in Bakersfield (WWTP #2). WWTP #2 is a trickling filter facility with a design capacity of 25 million gallons per day and has a current average daily flow of 13.7 million gallons per day¹¹. The proposed Project’s contribution to WWTP #2’s design capacity of 25 million would be approximately 0.008% ($191,394/25,000,000 = 0.00765576$). The City of Bakersfield has reviewed the Project and determined that the existing WWTP #2

¹¹ <https://www.bakersfieldcity.us/679/Wastewater-Treatment-Plants>, accessed October 2021.

has sufficient capacity to serve the proposed Project and WWTP #2 will not require expansion to serve the Project.

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 that have been developed with intense urban uses and there are no areas within or adjacent to the Project Area that have a significant wildfire risk. The Project will include underground pipelines and minor related improvements. 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:

- 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?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
--------------------------------------	---	------------------------------------	--------------

☐
☒
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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 Bakersfield – Andrea Avenue Sewer Collection Project. 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)
Biological Resources				
BIO – 1 Protect San Joaquin Kit Fox 1. To protect San Joaquin kit fox, a qualified biologist shall conduct a preconstruction survey to identify potential dens (burrows larger than 4 inches in diameter) in suitable land cover types. If potential San Joaquin kit fox dens are present, their disturbance and destruction shall be avoided. If occupied or potentially occupied San Joaquin kit fox dens are adjacent to the work area, exclusion zones shall be implemented following USFWS procedures. Exclusion zones shall be determined based on the type of den and current use: Potential Den—50 feet; Known Den—100 feet; Natal or Pupping Den—to be determined on a case-by-case basis in coordination with USFWS and CDFW. All pipes greater than 4 inches in diameter stored on the construction site shall be capped, and exit ramps shall be installed in trenches and other excavations to avoid direct mortality. When possible, construction shall be conducted outside of the breeding season from October 1 to November 30. U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior or During Ground Disturbance (USFWS 2011) shall also be followed.	City of Bakersfield	Prior to and/or during construction	City of Bakersfield and construction contractor	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
BIO - 2: 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, preconstruction 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.	City of Bakersfield	Prior to and/or during construction	City of Bakersfield and construction contractor	
Cultural Resources				
CUL - 1 Protect undiscovered cultural resources.	City of Bakersfield	Prior to and/or during construction	City of Bakersfield and	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
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.			construction contractor	

Chapter 5

PREPARERS

LIST OF PREPARERS

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Appendices

Appendix A

Air Emission Output Tables

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Andrea Ave. Septic to Sewer Project														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust (lbs/day)	Fugitive Dust (lbs/day)	PM2.5 (lbs/day)	Exhaust (lbs/day)	Fugitive Dust (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.24	11.68	10.47	12.88	0.48	12.40	3.01	0.43	2.58	0.03	2,394.13	0.61	0.03	2,417.33
Grading/Excavation	5.04	46.12	50.02	14.54	2.14	12.40	4.50	1.92	2.58	0.10	9,861.00	2.89	0.10	9,963.50
Drainage/Utilities/Sub-Grade	3.04	30.31	27.72	13.62	1.22	12.40	3.69	1.11	2.58	0.06	5,856.67	1.21	0.06	5,904.31
Paving	1.51	19.13	12.90	0.67	0.67	0.00	0.59	0.59	0.00	0.03	3,023.84	0.77	0.03	3,053.28
Maximum (pounds/day)	5.04	46.12	50.02	14.54	2.14	12.40	4.50	1.92	2.58	0.10	9,861.00	2.89	0.10	9,963.50
Total (tons/construction project)	0.68	6.55	6.47	2.37	0.28	2.09	0.69	0.26	0.43	0.01	1,324.07	0.35	0.01	1,336.82
Notes: Project Start Year -> 2023														
Project Length (months) -> 18														
Total Project Area (acres) -> 5														
Maximum Area Disturbed/Day (acres) -> 1														
Water Truck Used? -> No														
Total Material Imported/Exported Volume (yd ³ /day)														
Daily VMT (miles/day)														
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck								
Grubbing/Land Clearing	0	0	0	0	480	0								
Grading/Excavation	0	0	0	0	1,080	0								
Drainage/Utilities/Sub-Grade	0	0	0	0	800	0								
Paving	0	0	0	0	680	0								
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
Total Emission Estimates by Phase for -> Andrea Ave. Septic to Sewer Project														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.23	0.21	0.26	0.01	0.25	0.06	0.01	0.05	0.00	47.40	0.01	0.00	43.42
Grading/Excavation	0.40	3.65	3.96	1.15	0.17	0.98	0.36	0.15	0.20	0.01	780.99	0.23	0.01	715.87
Drainage/Utilities/Sub-Grade	0.21	2.10	1.92	0.94	0.08	0.86	0.26	0.08	0.18	0.00	405.87	0.08	0.00	371.20
Paving	0.04	0.57	0.38	0.02	0.02	0.00	0.02	0.02	0.00	0.00	89.81	0.02	0.00	82.27
Maximum (tons/phase)	0.40	3.65	3.96	1.15	0.17	0.98	0.36	0.15	0.20	0.01	780.99	0.23	0.01	715.87
Total (tons/construction project)	0.68	6.55	6.47	2.37	0.28	2.09	0.69	0.26	0.43	0.01	1324.07	0.35	0.01	1,212.76
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.														
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.														
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.														
The CO2e emissions are reported as metric tons per phase.														

Appendix B

Biological Report

BIOLOGICAL RESOURCE EVALUATION

September 2021

ANDREA AVENUE SEWER SYSTEM CONNECTION PROJECT
KERN COUNTY, CALIFORNIA



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Executive Summary

The proposed Project (Project) will connect an approximately 105-acre unincorporated area (Andrea Avenue) to the sewer system of the City of Bakersfield in Kern County, California. The Project will involve installing approximately 620 feet of 4-inch service connection, 440 feet of 6-inch PVC main, 8250 feet of 8-inch PVC main, 3490 feet of 10-inch PVC main, and 35 4-inch-diameter manholes. Sewer system connections will be installed at 279 residential dwellings, 236 commercial units, and 126 industrial units.

This Project will be funded by the Clean Water State Revolving Fund (CWSRF). Because the CWSRF is partially funded by the Environmental Protection Agency (EPA), the Project will constitute a federal action. As such, the environmental review for the Project must meet not only state requirements under the California Environmental Quality Act (CEQA) but some federal requirements as well. To comply with applicable federal statutes and authorities, the EPA established specific “CEQA-Plus” requirements in its operating agreement with the State Water Resources Control Board, which administers the CWSRF program.

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

This biological resource evaluation summarizes (1) existing biological conditions on the Project site, (2) the potential for special-status species and regulated habitats to occur on or near the Project site, (3) the potential impacts of the proposed Project on biological resources and regulated habitats, and (4) measures to reduce those potential impacts to less-than-significant levels.

We concluded that the Project could impact one special-status species: the federally listed as endangered and state listed as threatened San Joaquin kit fox (*Vulpes macrotis mutica*). Nesting migratory birds could also be impacted. However, impacts to all species 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
CFGF	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
RWQCB	Regional Water Quality Control Board
SCE	State Candidate Endangered
SE	State listed as Endangered
SSSC	State Species of Special Concern
ST	State listed as Threatened
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 proposed project (Project) will involve installing pipelines and connecting an unincorporated area (Andrea Avenue) to the sewer system of the City of Bakersfield in Kern County, California.

Because the Project is partially funded by the Clean Water State Revolving Fund (CWSRF), the Project will constitute a federal action. Consequently, the environmental review for the Project must meet state requirements under the California Environmental Quality Act (CEQA) as well as certain federal requirements. To comply with the applicable federal statutes and authorities, the EPA established specific “CEQA-Plus” requirements in its operating agreement with the State Water Resources Control Board, which administers the CWSRF program.

The purpose of this biological resource evaluation is to assess whether the Project will affect state- or federally protected resources pursuant to CEQA-Plus 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 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), Regional Water Quality Control Board (RWQCB), 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: (1) installing approximately 620 feet of 4-inch service connection to houses and properties, (2) installing approximately 440 feet of 6-inch PVC main, (3) installing approximately 8250 feet of 8-inch PVC main, (4) installing approximately 3490 feet of 10-inch PVC main, (5) approximately 26,900 square feet of trenching and surface restoration, and (6) installing approximately 35 4-inch-diameter manholes. Sewer system connections will be installed at 279 residential dwellings, 236 commercial units, and 126 industrial units.

1.3 Project Location

The approximately 105-acre Project site is within a county island in the southeastern portion of the City of Bakersfield, south of State Route 58 and east of State Route 99 (Figure 1). It is generally southwest of the intersection of White Lane and South Union Avenue (Figure 2).

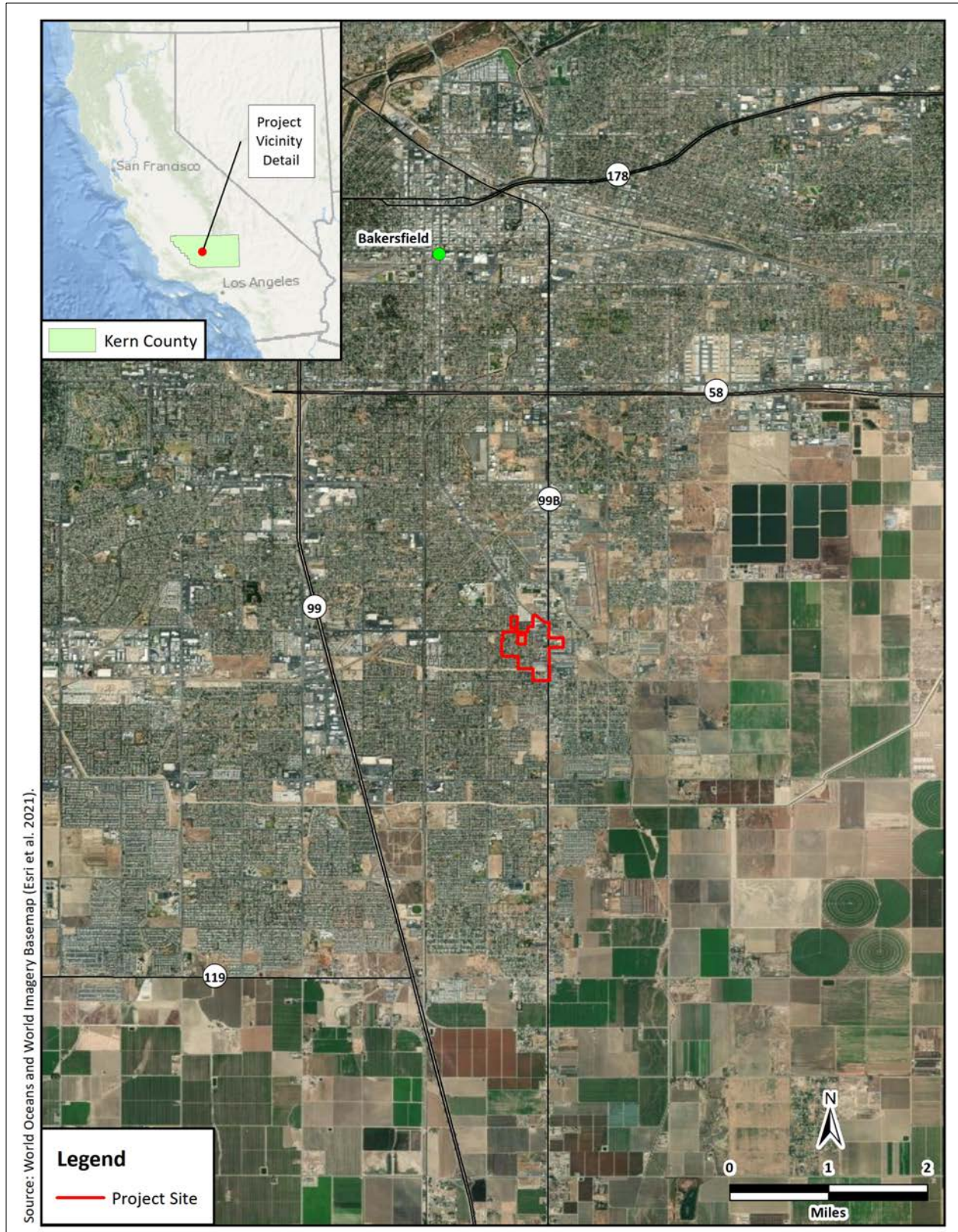


Figure 1. Project site vicinity map.

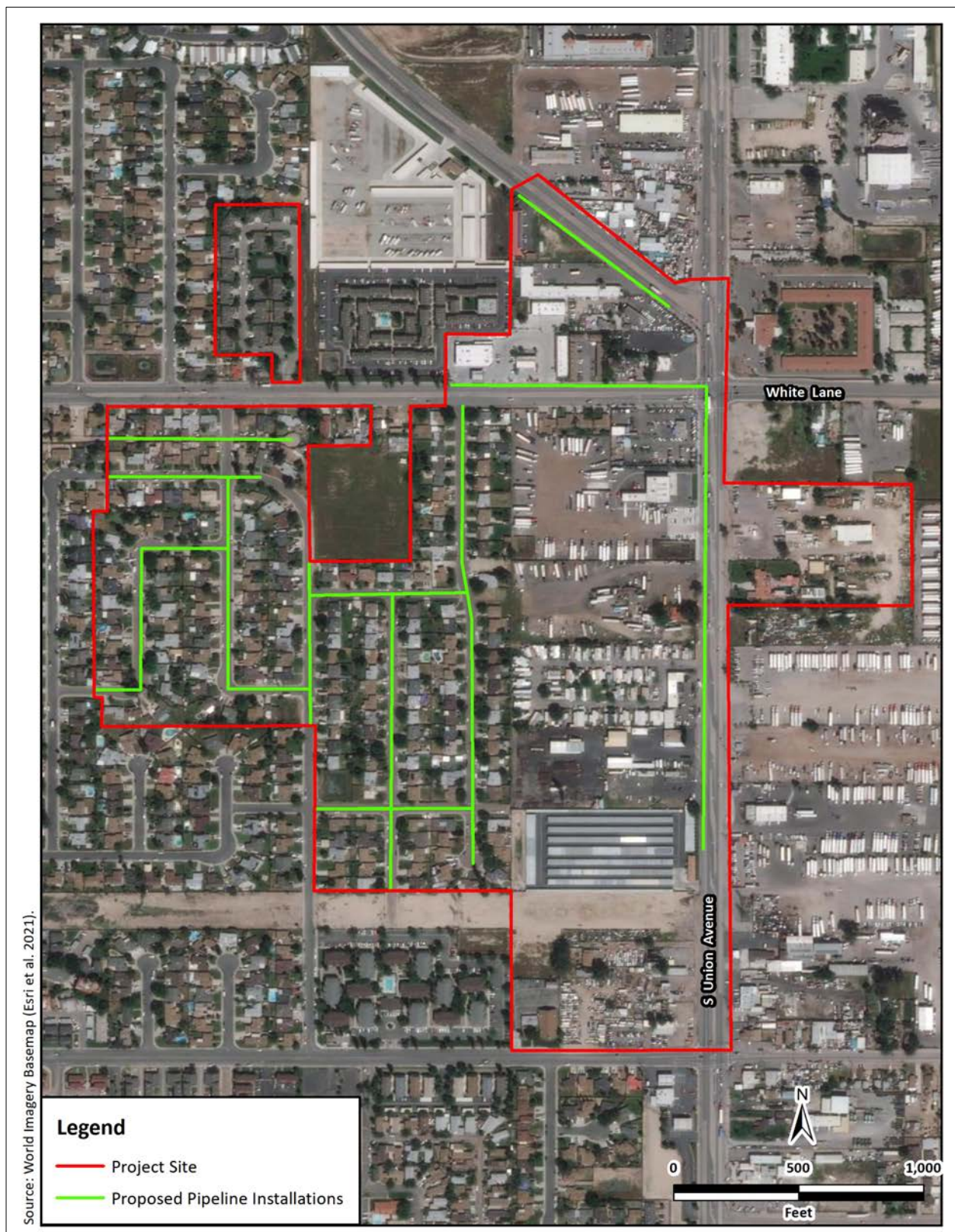


Figure 2. Project site map.

1.4 Purpose and Need of Proposed Project

The purpose of the Project is to connect unincorporated Andrea Avenue to the sewer system of the City of Bakersfield. The Project is needed to improve sewage management by connecting an outdated system to the City of Bakersfield wastewater treatment system.

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 Joshua Reece from the United States Fish and Wildlife Service (USFWS) website (<https://ecos.fws.gov/ipac/>) on 17 August 2021 (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 United States Army Corps of Engineers (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). Ditches and drainage canals where water flows intermittently or ephemerally are not regulated as waters of the United States. 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 State Water Resources Control Board 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 2020). 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, 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 United 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 2021a, Appendix A). In addition, we searched the California Natural Diversity Data Base (CDFW 2021, Appendix B) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2021, 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 Gosford 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Rosedale, Oildale, Oil Center, Stevens, Lamont, Millux, Conner, and Weed Patch). A local list of special-status species was compiled using CNDDB records from within 5 miles of the Project site. Species that lack a 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 aerial imagery from Google Earth (Google 2021) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2021), the National Wetlands Inventory (USFWS 2021b), the National Wild and Scenic Rivers System (USFWS 2021c), Federal Emergency Management Agency (FEMA 2021) flood maps, and relevant literature.

2.2 Reconnaissance Survey

Colibri Senior Scientist Joshua Reece and Field Scientist Jackson Xiong conducted a field reconnaissance survey of the Project site on 11 August 2021. 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 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.

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.

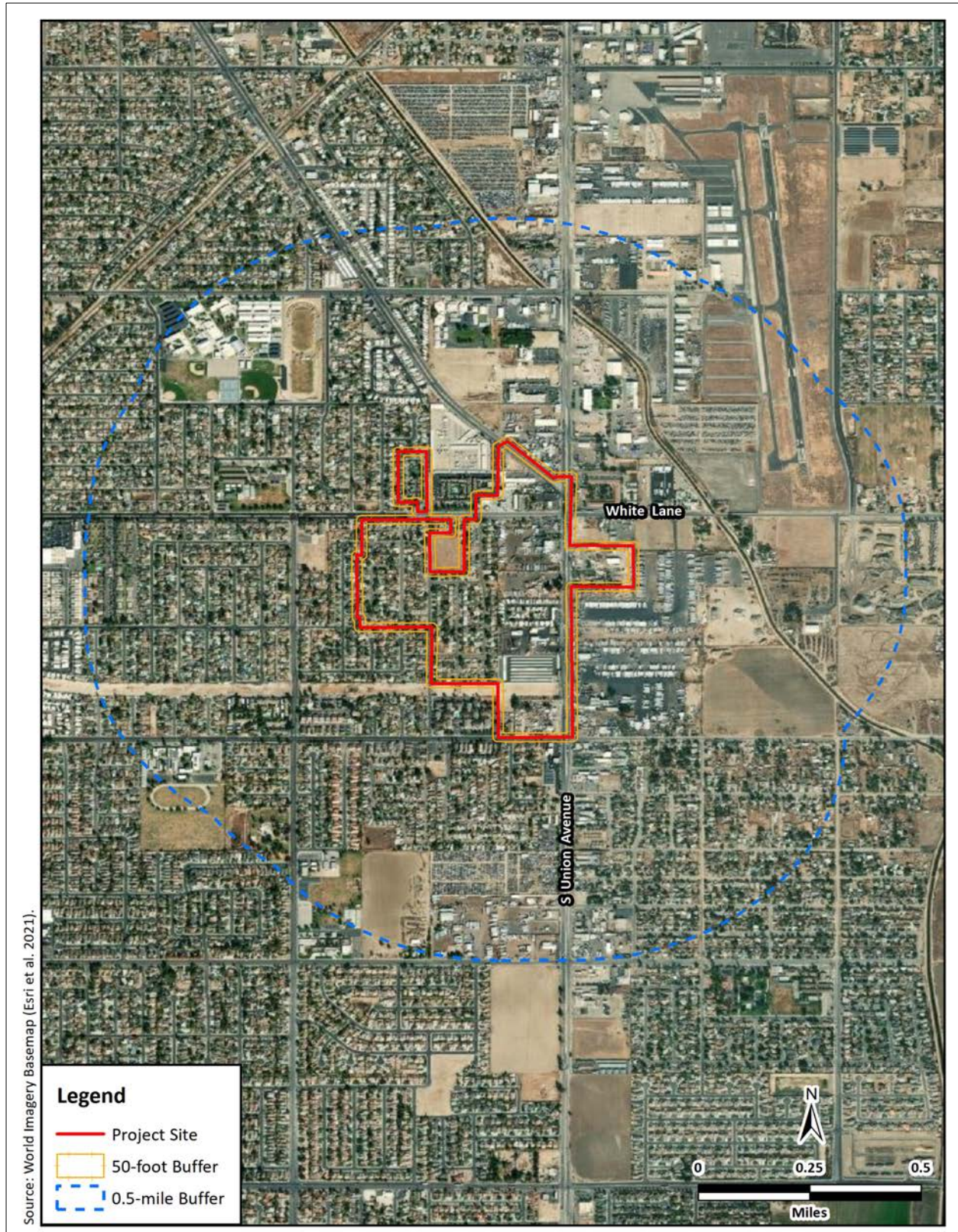


Figure 3. Reconnaissance survey area map.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project site included 12 species listed as threatened or endangered under the FESA (USFWS 2021a, Table 1, Appendix A). Eleven of those species could not 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). One species, the San Joaquin kit fox (*Vulpes macrotis mutica*), could potentially occur within the survey area. As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2021a, Appendix A).

Searching the CNDDDB for records of special-status species from the Gosford 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 326 records of 60 species (Table 1, Appendix B). Of those 60 species, 13 were not considered further because federal or state regulatory agencies or public interest groups do not recognize them through special designation (Appendix B). Of the remaining 47 species, 13 are known from within 5 miles of the Project site (Table 1, Figure 4). Ten of those 13 species are not expected to 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, (3) their absence during the reconnaissance survey, or (4) a combination thereof. However, three species, the San Joaquin kit fox, the western mastiff bat, and the burrowing owl (*Athene cunicularia*), could occur on or near the Project site.

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded 20 taxa (CNPS 2021, Appendix C), one of which has a CRPR of 2B, and 19 of which have a CRPR of 1B (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 Kimberlina — Urban land — Cajon complex, 0 to 2% percent slopes (NRCS 2021). The Project site is at an elevation of 369–381 feet above mean sea level (Google 2021).

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			
Bakersfield cactus ³ (<i>Opuntia basilaris</i> var. <i>treleasei</i>)	FE, SE, 1B.1	Upland scrub, grasslands, and woodlands with sandy or gravelly soils, below 1700 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Bakersfield smallscale ³ (<i>Atriplex tularensis</i>)	SE, 1A	Alkaline soils, shores of dry lakes.	None. Habitat lacking; the survey area consisted of dense urban landcover.
California jewelflower (<i>Caulanthus californicus</i>)	FE, SE, 1B.1	Chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland at 150–3300 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Kern mallow (<i>Eremalche parryi</i> ssp. <i>kernensis</i>)	FE, 1B.2	Alkaline sandy loam or clay soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland at 200–4000 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
San Joaquin woollythreads (<i>Monolopia congdonii</i>)	FE, 1B.2	Sandy soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland at 180–2400 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Crotch bumble bee ³ (<i>Bombus crotchii</i>)	SCE	Open grassland and scrub supporting open flowers with short petals.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	FT	Elderberry (<i>Sambucus</i> sp.) plants with stems > 1-inch diameter at ground level.	None. Habitat lacking; the survey area lacked elderberry plants and is outside the currently

			recognized range of this species.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	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 in the survey area.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT, SE	River channels and tidally influenced sloughs.	None. Habitat lacking; no connectivity to the aquatic habitat this species requires.
California red-legged frog (<i>Rana draytonii</i>)	FT, SSSC	Creeks, ponds, and marshes for breeding; burrows for upland refuge.	None. Habitat lacking; no potentially suitable aquatic or upland features were found in the survey area, which is outside the current range of this species.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	FE, SE, FP	Upland scrub and sparsely vegetated grassland with small mammal burrows between 100 feet and 2400 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Giant garter snake (<i>Thamnophis gigas</i>)	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 potentially suitable aquatic features were found in the survey area, which is outside the current range of this species.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	FE, SE	Dense riparian forest and wet meadow habitat in the Sierra Nevada mountains at 2000–8000 feet elevation.	None. Habitat lacking; Project site is outside the elevational range of this species.

Swainson's hawk ³ (<i>Buteo swainsoni</i>)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	None. Although the survey area included some large trees, it lacked adjacency to required foraging habitats.
Tricolored blackbird (<i>Agelaius tricolor</i>)	ST	Freshwater emergent wetlands, agricultural fields, irrigated pastures, grassland, silage fields near dairies.	None. Habitat lacking; no suitable aquatic resources or suitable agricultural land in the survey area.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT, SSSC	Sandy beaches, salt pond levees, and shores of large alkali lakes.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT, SE	Open woodlands with dense, low vegetation along waterways.	None. Habitat lacking; the survey area consisted of dense urban landcover.
White-tailed kite (<i>Elanus leucurus</i>)	FP	Grassland, open woodland, marsh, and cultivated fields with large trees for nesting.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Buena Vista Lake ornate shrew (<i>Sorex ornatus relictus</i>)	FE, SSSC	Moist riparian, wetlands, grasslands, and upland scrub with abundant leaf litter and dense herbaceous cover.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Giant kangaroo rat (<i>Dipodomys ingens</i>)	FE, SE	Annual grassland communities with few or no shrubs, well drained, sandy-loam soils located on gentle slopes.	None. Habitat lacking; the survey area, which is outside the current range of the species, consisted of dense urban landcover.
San Joaquin antelope squirrel (<i>Ammospermophilus nelsoni</i>)	ST	Arid grassland and upland scrub with sandy loam soils, widely spaced shrubs, and dry washes.	None. Habitat lacking; the survey area consisted of dense urban landcover.

San Joaquin kit fox ³ (<i>Vulpes macrotis mutica</i>)	FE, ST	Grassland and upland scrub and fallowed agricultural lands adjacent to natural grasslands or upland scrub.	Low. The Project site lacked habitat for this species, and no known or potential dens were found in the survey area. However, this species could use the electric transmission corridor in the survey area just south of the Project site while foraging or in transit as it is connected to natural areas that likely support this species.
Tipton kangaroo rat (<i>Dipodomys nitratoide nitratoide</i>)	FE, SE	Grassland and upland scrub with sparse to moderate shrub cover and saline soils; also fallowed agricultural fields adjacent to natural grasslands or upland scrub.	None. Habitat lacking; the survey area consisted of dense urban landcover and lacked adjacency to natural land cover.
State Species of Special Concern			
Western spadefoot (<i>Spea hammondi</i>)	SSSC	Rain pools for breeding and small mammal burrows or other suitable refugia for nonbreeding upland cover.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Bakersfield legless lizard ³ (<i>Anniella grinnelli</i>)	SSSC	Moist, warm, loose soil with sparsely vegetated areas of scrub and sandy washes in southern San Joaquin Valley and east side of the Carrizo Plain.	None. Habitat lacking; the survey area consisted of dense urban landcover.
California glossy snake ³ (<i>Arizona elegans occidentalis</i>)	SSSC	Arid scrub, rocky washes, grasslands, chaparral.	None. Habitat lacking; the survey area consisted of dense urban landcover.

Coast horned lizard (<i>Phrynosoma blainvillii</i>)	SSSC	Open, generally sandy areas, washes, and flood plains in a variety of habitats.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Northwestern pond turtle (<i>Actinemys marmorata</i>)	SSSC	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation and woody debris for basking and adjacent natural upland areas for egg laying.	None. Habitat lacking; no suitable water bodies were found in the survey area.
San Joaquin coachwhip (<i>Masticophis flagellum ruddocki</i>)	SSSC	Chenopod scrub and valley and foothill grassland with small mammal burrows for refuge and reproduction.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Burrowing owl ³ (<i>Athene cunicularia</i>)	SSSC	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground-squirrel burrows.	None. Habitat lacking; the survey area consisted of dense urban landcover; no burrows or burrow surrogates were found in the survey area.
Fulvous whistling-duck (<i>Dendrocygna bicolor</i>)	SSSC	Freshwater emergent wetlands, shallow lakes and rivers; dense emergent wetland vegetation for nesting.	None. Habitat lacking; no suitable aquatic resources in the survey area.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	SSSC	Freshwater marsh with emergent vegetation.	None. Habitat lacking; no suitable aquatic resources in the survey area.
American badger ³ (<i>Taxidea taxus</i>)	SSSC	Open, dry areas with friable soils and small mammal populations	None. Habitat lacking; the survey area consisted of dense urban landcover.

		in grassland, conifer forests, and desert.	
Short-nosed kangaroo rat (<i>Dipodomys nitratoideus brevinasus</i>)	SSSC	Chenopod scrub and valley and foothill grassland plant communities with friable soils in flat to gently sloping terrain.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Tulare grasshopper mouse (<i>Onychomys torridus tularensis</i>)	SSSC	Chenopod scrub with friable soil.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Western mastiff bat ³ (<i>Eumops perotis californicus</i>)	SSSC	Roosts in crevices in cliff faces, buildings, trees, and tunnels in open semi-arid and arid habitats such as conifer forest, oak woodland, coastal scrub, chaparral, grassland, desert scrub, and urban areas.	Moderate. Potential roosting trees and foraging habitat within the survey area.
California Rare Plants			
Alkali mariposa-lily (<i>Calochortus striatus</i>)	1B.2	Alkaline and mesic chaparral, chenopod scrub, Mojavean desert scrub, and meadows and seeps.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Calico monkeyflower (<i>Diplacus pictus</i>)	1B.2	Bare, sunny, shrubby areas around granite outcrops in the southern Sierra Nevada mountains at 442–4100 feet elevation.	None. Habitat lacking; the Project site is outside the elevational range of this species.
California alkali grass (<i>Puccinellia simplex</i>)	1B.2	Scrub, meadows, seeps, grassland, vernal pools, saline flats, and mineral springs below 3000 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.

California satintail ³ (<i>Imperata brevifolia</i>)	2B.1	Moist to wet sites in arid desert canyons, or rocky slopes, near seeps, springs, and streams below 1700 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover and lacked suitable aquatic resources.
California screw moss (<i>Tortula californica</i>)	1B.2	Dry soil or rock at low elevations.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Comanche Point layia (<i>Layia leucopappa</i>)	1B.1	Grassland and upland scrub.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	1B.1	Saltmarsh, playas, and vernal pools below 4000 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Heartscale (<i>Atriplex cordulata</i> var. <i>cordulata</i>)	1B.2	Saline or alkaline soils in grassland, meadows and seeps, and chenopod scrub communities below 230 feet elevation.	None. Habitat lacking; the Project site is outside the elevational range of this species.
Hispid salty bird's-beak ³ (<i>Chloropyron molle</i> ssp. <i>hispidum</i>)	1B.1	Grassland, meadows, seeps, or playas with alkaline soil.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Horn's milk-vetch ³ (<i>Astragalus hornii</i> var. <i>hornii</i>)	1B.1	Alkaline sink, wetland-riparian.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Lost Hills crownscale (<i>Atriplex coronata</i> var. <i>vallicola</i>)	1B.2	Chenopod scrub and valley and foothill grassland at 150–2000 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Mason's neststraw (<i>Stylocline masonii</i>)	1B.1	Washes and flats with loose sandy soil.	None. Habitat lacking; the survey area consisted of dense urban landcover.

Oil neststraw (<i>Stylocline citroleum</i>)	1B.1	Chenopod scrub and Valley and foothill grassland.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Piute Mountains navarretia (<i>Navarretia setiloba</i>)	1B.1	Depressions in clay or gravelly loam in woodland or grassland.	None. Habitat lacking; the survey area consisted of dense urban landcover and lacked grassland or woodland.
Recurved larkspur (<i>Delphinium recurvatum</i>)	1B.2	Poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland at 10–2800 feet elevation.	None. Habitat lacking; the survey area consisted of dense urban landcover.
Tejon poppy (<i>Eschscholzia lemmonii</i> ssp. <i>kernensis</i>)	1B.1	Chenopod scrub and valley and foothill grassland.	None. Habitat lacking; the survey area consisted of dense urban landcover.

CDFW (2021), CNPS (2021), USFWS (2021a).

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.
SC = State Candidate Endangered	
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).

CNPS California Rare Plant Rank¹:	Threat Ranks¹:
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.	

³Record from within 5 miles of the Project site.

3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The Project site supported dense commercial and residential landcover. The eastern edge of the survey area consisted mostly of commercial infrastructure (Figure 5). West of Union Avenue the Project site was primarily residential with streets, sidewalks, and single-family homes (Figure 6). Just south of White Lane was an alley between homes (Figure 7) where a 6-inch main pipe will be installed. Just south of the Project site was an electric transmission corridor (Figure 8) that provides connectivity to natural areas west of the Project site. Two stormwater retention ponds were within the Project site, one at Janet Avenue and Eve Street (Figure 9) and another at Joe Avenue and Eve Street. The Project site was surrounded by residential and commercial properties on all sides, with some open space to the east and northeast in the form of an airport and a large recycling plant sorting station.

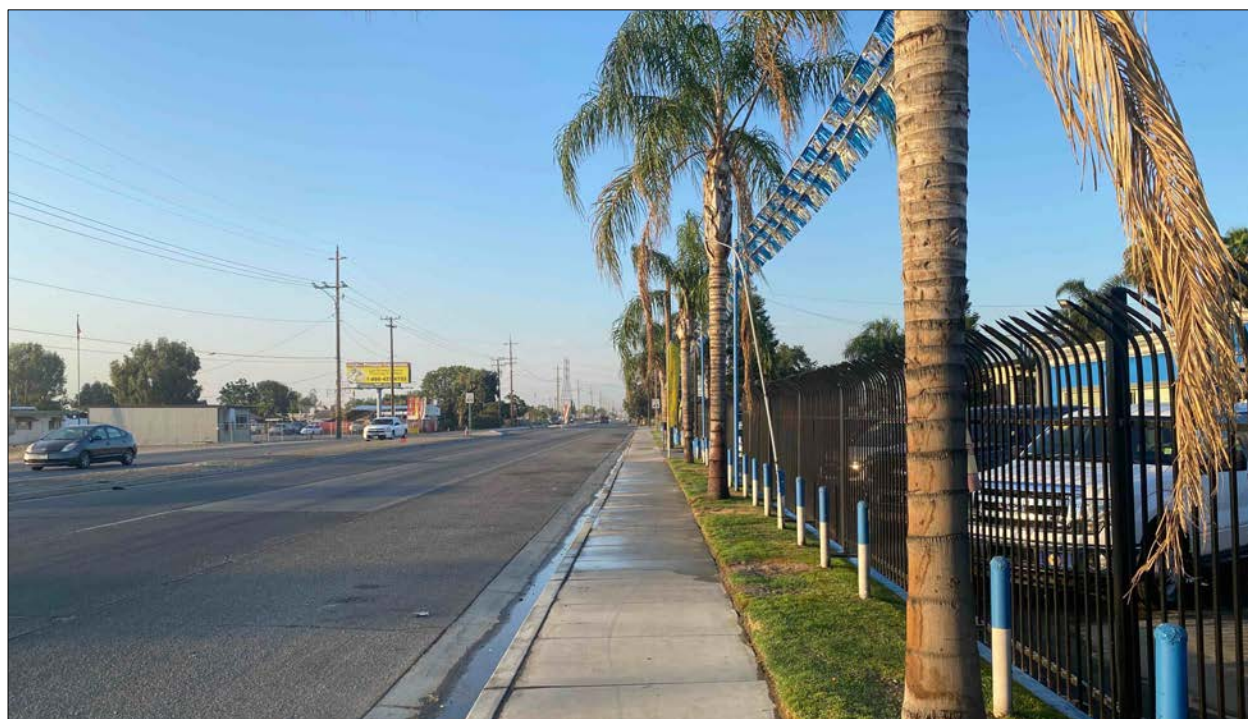


Figure 5. Photograph of the Project site, looking south along Union Avenue, showing the dense urban and primarily commercial setting of the eastern portion of the survey area.



Figure 6. Photograph of the Project site, looking west at the intersection of Eve Street and Janet Avenue, showing the dense residential setting of the survey area.



Figure 7. Photograph of Project site, looking west, showing an alley where a 6-inch main pipe will be installed.



Figure 8. Photograph of the Project site, looking east, showing an electric transmission corridor that abuts the southern border of the Project site.



Figure 9. Photograph of the survey area, looking north, showing a stormwater retention pond at the intersection of Janet Avenue and Eve Street.

3.2.2 Plant and Animal Species Observed

A total of eight plant species (three native and five nonnative), and nine bird 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 Asteraceae		
California sagebrush	<i>Artemisia californica</i>	Native
Prickly lettuce	<i>Lactuca serriola</i>	Nonnative
Family Myrtaceae		
Blue gum eucalyptus	<i>Eucalyptus globulus</i>	Nonnative
Family Poaceae		
Bahia grass	<i>Paspalum notatum</i>	Nonnative
Ripgut brome	<i>Bromus diandrus</i>	Nonnative
Salt grass	<i>Distichlis spicata</i>	Native
Family Solanaceae		
Jimsonweed	<i>Datura wrightii</i>	Native
Family Zygophyllaceae		
Puncture vine	<i>Tribulus terrestris</i>	Nonnative
Birds		
Family Columbidae		
Eurasian collared-dove	<i>Streptopelia decaocto</i>	--
Mourning dove	<i>Zenaida macroura</i>	MBTA, CFGC
Rock pigeon	<i>Columba livia</i>	--
Family Corvidae		
American crow	<i>Corvus brachyrhynchos</i>	MBTA, CFGC
California scrub-jay	<i>Aphelocoma californica</i>	MBTA, CFGC
Family Fringillidae		
House finch	<i>Haemorhous mexicanus</i>	MBTA, CFGC
Family Mimidae		
Northern mockingbird	<i>Mimus polyglottos</i>	MBTA, CFGC
Family Passeridae		
House sparrow	<i>Passer domesticus</i>	--
Family Sturnidae		
European starling	<i>Sturnus vulgaris</i>	--

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).

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, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and American crow (*Corvus brachyrhynchos*). Numerous large trees within 0.5 miles of the Project site could provide suitable nesting substrates for raptors.

3.2.5 Regulated Habitats

No Wild and Scenic River is near the Project site; the nearest stretch is associated with the Kern River north of Lake Isabella, approximately 50 miles northeast of the Project site (USFWS 2020b).

The two stormwater retention ponds may be considered waters of the state under the jurisdiction of the RWQCB. No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds were 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, were present in the survey area.

The Project site is within a FEMA-designated flood zone classified as Zone X, otherwise described as “Other Flood Areas”. Parcels within Zone X have either (1) a 0.2% annual chance of flood during a 100-year flood event, (2) a 1% annual chance of flood (during a 100-year flood event) with average depths of < 1 foot or with drainage areas less than 1 square mile, or (3) areas protected by levees from a 1% annual chance of flooding during a 100-year flood event (FEMA 2021). The nearest “Special Flood Hazard Areas” to the Project site is 5 miles northwest of the Project site along the Kern River. Special Flood Hazard Areas are areas subject to inundation by the 1% annual chance of a 100-year flood. No connectivity exists between any Special Flood Hazard Area and the Project site (FEMA 2021).

3.3 Special-Status Species

3.3.1 San Joaquin Kit Fox

San Joaquin kit fox is a federally listed as endangered and state listed as threatened member of the family Canidae (USFWS 1998; CDFW 2021). San Joaquin kit fox is primarily nocturnal and typically occupies valley grassland or mixed shrub/grassland habitats in low, rolling hills and valleys (Morrell 1972). The San Joaquin kit fox will use grazed grasslands as well as grasslands with scattered structures such as power poles and wind turbines. This species also lives adjacent

to, and forages in, tilled and fallow fields and irrigated row crops. However, large tracts of higher quality grassland or rangeland nearby is required to support the species (Warrick et al. 2007). The diet of the San Joaquin kit fox varies geographically, seasonally, and annually, but throughout most of its range consists primarily of rodents, rabbits, ground-nesting birds, and insects (Scrivner et al. 1987; Spiegel et al. 1996). Giant kangaroo rat is a favored prey item (Cypher et al. 2000).

The San Joaquin kit fox requires underground dens to regulate its temperature and for shelter, reproduction, and predator avoidance (Morrell 1972). It commonly modifies and uses dens constructed by other animals, such as ground squirrels and badgers, and will use human-made structures as well (USFWS 1998). Dens are usually made in loose-textured soils on slopes of less than 40 degrees, but the number of openings, entrance shape, and the slope of the ground on which they occur vary across the geographic range of the species (USFWS 1998). San Joaquin kit fox changes den locations often, typically using numerous dens each year. Koopman et al. (1998) estimated that a San Joaquin kit fox will use an average of about 12 dens over the course of a year and will often not use the same dens the following year. This species is subject to predation or competitive exclusion by other species such as coyote (*Canis latrans*), domestic dog (*Canis familiaris*), bobcat (*Felis rufus*), and nonnative red fox (*Vulpes vulpes*), as well as large raptors (Benedict and Forbes 1979; Cypher and Spencer 1998; Clark et al. 2005, 2007).

There are nine CNDDDB records from within 5 miles of the Project site, dating from 1971 to 2007 (CNDDDB 2021). Although the Project site supports mostly urban and disturbed land cover, natural areas to the west, connected by the electric transmission corridor south of the Project site could be used by this species, and thus it could occur on or near the Project site.

3.3.3 Western Mastiff Bat

The western mastiff bat is most common in the southern half of California, but its range extends almost to the Oregon border (Cockrum 1960). This species forages in large, open areas in habitats such as desert washes, floodplains, conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, and agricultural lands (Cockrum 1960; Ross 1961). Roosts include the undersides of large slabs or boulders, cliff faces, and cracks in buildings (Howell 1920; Dalquest 1946; Barbour and Davis 1969). This species prefers a roost high above the ground that allows a vertical drop of at least 10 feet to initiate flight (Howell 1920).

The CNDDDB includes two occurrences from 2002 of western mastiff bat from within 5 miles of the Project site (CDFW 2021). Roosting habitat is present on the Project site, and western mastiff bat could forage over or near the Project site. However, as this species forages at dusk when no work is expected to occur, no impacts to it or its aerial foraging habitat are anticipated. Therefore, no mitigation measures for this species are recommended.

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 federally listed as endangered and state listed as threatened San Joaquin kit fox. A second special-status species, the mastiff bat, could occur on the Project site. However, the proposed activities would not remove roosting habitat or disturb the nighttime feeding activities of this species. Therefore, no effects to this species are expected. 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

Two fenced-in stormwater retention ponds are within the residential portions of the Project site along Eve Street. These features are likely regulated by the RWQCB. However, impacts to these features are not anticipated. Therefore, we conclude the Project will have **no effect** on regulated habitats.

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, one special-status animal that occurs 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 Measure BIO1 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

Mitigation Measure BIO1. Protect San Joaquin kit fox.

1. To protect San Joaquin kit fox, a qualified biologist shall conduct a pre-construction survey to identify potential dens (burrows larger than 4 inches in diameter) in suitable land cover types. If potential San Joaquin kit fox dens are present, their disturbance and destruction shall be avoided. Exclusion zones shall be determined based on the type of den and current use: Potential Den—50 feet; Known Den—100 feet; Natal or Pupping Den—to be determined on a case-by-case

basis in coordination with USFWS and CDFW. All pipes greater than 4 inches in diameter stored on the construction site shall be capped, and exit ramps shall be installed in trenches and other excavations to avoid direct mortality. When possible, construction shall be conducted outside of the breeding season from October 1 to November 30. *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior or During Ground Disturbance* (USFWS 2011) shall also be followed.

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 BIO2 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO2. 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 installing new underground pipes and connecting an existing sewer system to the sewer system of the City of Bakersfield. Although the Project site is disturbed by urban development, it or adjacent areas provide potential habitat for San Joaquin kit fox and nesting habitat for migratory birds. However, implementing Mitigation Measures BIO1 and BIO2 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.

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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:

August 17, 2021

Consultation Code: 08ESMF00-2021-SLI-2560

Event Code: 08ESMF00-2021-E-07398

Project Name: ANDREA AVENUE SEWER CONNECTION

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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

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 Tracking Number 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

Consultation Code: 08ESMF00-2021-SLI-2560

Event Code: 08ESMF00-2021-E-07398

Project Name: ANDREA AVENUE SEWER CONNECTION

Project Type: DEVELOPMENT

Project Description: Project is to connect an unincorporated area (Andrea Avenue) to the sewer system of the City of Bakersfield in Kern County, California. The roughly 105-acre Andrea Avenue is a county island surrounded by the City of Bakersfield. It is bounded to the north by Chester Avenue, to the south by Pacheco Road, to the west by Lantados Street, and to the east by the Central Branch Kern Island Canal. The sewer collection system will require approximately 620 feet of 4-inch service connection to houses and properties, 440 feet of 6-inch PVC main, 8250 feet of 8-inch PVC main, 3490 feet of 10-inch PVC main, 26,900 square feet of trenching and surface restoration, and 35 4-inch diameter manholes. Sewer system connections will be installed at 279 residential dwellings, 236 commercial units, and 126 industrial units.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.31533515,-119.0062781486589,14z>



Counties: Kern County, California

Endangered Species Act Species

There is a total of 12 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 Fisheries¹, 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.

-
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
Buena Vista Lake Ornate Shrew <i>Sorex ornatus relictus</i> 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/1610	Endangered
Giant Kangaroo Rat <i>Dipodomys ingens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat <i>Dipodomys nitratoide nitratoide</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

Birds

NAME	STATUS
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> 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/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. 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/3911	Threatened

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> 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/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> 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

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> 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
Bakersfield Cactus <i>Opuntia treleasei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7799	Endangered

Critical habitats

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

Appendix B. CNDDDB occurrence records.



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS < (Rosedale (3511942)< OR < Oil Center (3511848)< OR < Stevens (3511932)< OR < Gosford (3511931)< OR < Lamont (3511838)< OR < Millux (3511922)< OR < Conner (3511921)< OR < Weed Patch (3511828)< OR < Taxonomic Group < IS < (Fish < OR < Amphibians < OR < Reptiles < OR < Birds < OR < Mammals < OR < Mollusks < OR < Arachnids < OR < Crustaceans < OR < Insects < OR < Ferns < OR < Gymnosperms < OR < Monocots < OR < Dicots < OR < Lichens < OR < Bryophytes)

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.
<i>Agelaius tricolor</i> 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	320 325	955 S:3	0	0	0	0	0	3	1	2	3	0	0
<i>Ammospermophilus nelsoni</i> Nelson's antelope squirrel	G2G3 S2S3	None Threatened	BLM_S-Sensitive IUCN_EN-Endangered	290 510	286 S:4	0	1	0	0	0	3	4	0	4	0	0
<i>Anniella grinnelli</i> Bakersfield legless lizard	G2G3 S2S3	None None	CDFW_SSC-Species of Special Concern	330 410	20 S:11	0	0	5	0	0	6	5	6	11	0	0
<i>Anniella spp.</i> California legless lizard	G3G4 S3S4	None None	CDFW_SSC-Species of Special Concern	300 300	119 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Ardea alba</i> great egret	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	325 325	43 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Arizona elegans occidentalis</i> California glossy snake	G5T2 S2	None None	CDFW_SSC-Species of Special Concern	297 900	260 S:11	0	0	0	0	0	11	11	0	11	0	0
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	GUT1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	300 400	28 S:13	0	3	2	0	1	7	7	6	12	0	1
<i>Athene cunicularia</i> 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	290 540	2011 S:32	0	3	7	3	1	18	3	29	31	1	0
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		66 S:1	0	0	0	0	1	0	1	0	0	1	0



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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.
<i>Atriplex coronata var. vallicola</i> Lost Hills crownscale	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	290 290	76 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Atriplex tularensis</i> Bakersfield smallscale	GX SX	None Endangered	Rare Plant Rank - 1A	305 350	3 S:2	0	0	0	0	2	0	2	0	0	0	2
<i>Bombus crotchii</i> Crotch bumble bee	G3G4 S1S2	None Candidate Endangered		362 900	437 S:5	0	0	0	0	0	5	4	1	5	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	290 421	2541 S:10	0	2	1	0	1	6	3	7	9	1	0
<i>Calochortus striatus</i> alkali mariposa-lily	G3? S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG- California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	300 300	113 S:2	0	1	1	0	0	0	1	1	2	0	0
<i>Caulanthus californicus</i> California jewelflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG- California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley		67 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Charadrius nivosus nivosus</i> western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	290 290	138 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Chloropyron molle ssp. hispidum</i> hispid salty bird's-beak	G2T1 S1	None None	Rare Plant Rank - 1B.1	400 400	35 S:2	0	0	0	0	0	2	2	0	2	0	0



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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.
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	G5T2T3 S1	Threatened Endangered	BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	290 290	165 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Danaus plexippus pop. 1</i> monarch - California overwintering population	G4T2T3 S2S3	Candidate None	USFS_S-Sensitive	480 600	383 S:4	0	0	0	0	2	2	4	0	2	2	0
<i>Delphinium recurvatum</i> recurved larkspur	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	300 330	119 S:6	0	0	3	0	2	1	4	2	4	1	1
<i>Dendrocygna bicolor</i> fulvous whistling-duck	G5 S1	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	290 290	3 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	G3T2 S3	Threatened None		450 450	271 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Diplacus pictus</i> calico monkeyflower	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		73 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Dipodomys ingens</i> giant kangaroo rat	G1G2 S1S2	Endangered Endangered	IUCN_EN-Endangered	295 295	143 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Dipodomys nitratoides brevinasus</i> short-nosed kangaroo rat	G3T1T2 S1S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	290 290	64 S:2	0	1	0	0	0	1	1	1	2	0	0
<i>Dipodomys nitratoides nitratoides</i> Tipton kangaroo rat	G3T1T2 S1S2	Endangered Endangered	IUCN_VU-Vulnerable	292 580	79 S:15	0	1	1	3	0	10	11	4	15	0	0
<i>Egretta thula</i> snowy egret	G5 S4	None None	IUCN_LC-Least Concern	325 325	20 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Elanus leucurus</i> white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	350 350	180 S:1	0	0	1	0	0	0	1	0	1	0	0



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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.
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	340 470	1398 S:3	0	1	0	0	0	2	3	0	3	0	0
<i>Eremalche parryi ssp. kernensis</i> Kern mallow	G3G4T3 S3	Endangered None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	300 335	202 S:8	0	0	3	0	0	5	3	5	8	0	0
<i>Eremophila alpestris actia</i> California horned lark	G5T4Q S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	340 350	94 S:2	0	0	1	1	0	0	0	2	2	0	0
<i>Eriastrum hooveri</i> Hoover's eriastrum	G3 S3	Delisted None	Rare Plant Rank - 4.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 360	47 S:7	2	1	2	0	2	0	7	0	5	0	2
<i>Eschscholzia lemmonii ssp. kernensis</i> Tejon poppy	G5T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden SB_USDA-US Dept of Agriculture	600 600	86 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Eumops perotis californicus</i> western mastiff bat	G4G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	450 450	296 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Gambelia sila</i> blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	40 900	416 S:9	0	2	3	1	0	3	6	3	9	0	0
<i>Gonidea angulata</i> western ridged mussel	G3 S1S2	None None		462 462	157 S:1	0	0	0	0	1	0	1	0	0	1	0



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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.
<i>Helminthoglypta callistoderma</i> Kern shoulderband	G1 S1	None None	IUCN_EN-Endangered	375 375	3 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Imperata brevifolia</i> California satintail	G4 S3	None None	Rare Plant Rank - 2B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden USFS_S-Sensitive	400 400	32 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lasiurus cinereus</i> hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	400 400	238 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	300 300	111 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Layia leucopappa</i> Comanche Point layia	G1 S1	None None	Rare Plant Rank - 1B.1 SB_SBBG-Santa Barbara Botanic Garden	850 850	10 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lytta moesta</i> moestan blister beetle	G2 S2	None None		560 560	12 S:1	0	0	0	0	0	1	1	0	0	1	0
<i>Lytta morrisoni</i> Morrison's blister beetle	G1G2 S1S2	None None		560 560	10 S:1	0	0	0	0	0	1	1	0	0	1	0
<i>Masticophis flagellum ruddocki</i> San Joaquin coachwhip	G5T2T3 S2?	None None	CDFW_SSC-Species of Special Concern	104 315	96 S:4	0	2	0	0	0	2	2	2	4	0	0
<i>Monolopia congdonii</i> San Joaquin woollythreads	G2 S2	Endangered None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley	330 460	111 S:9	0	2	0	0	7	0	7	2	2	7	0
<i>Navarretia setiloba</i> Piute Mountains navarretia	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive USFS_S-Sensitive	600 600	56 S:1	0	0	0	0	1	0	1	0	0	0	1



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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.
<i>Onychomys torridus tularensis</i> Tulare grasshopper mouse	G5T1T2 S1S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern	300 332	53 S:3	0	1	1	0	0	1	0	3	3	0	0
<i>Opuntia basilaris var. treleasei</i> Bakersfield cactus	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	290 915	62 S:27	0	2	9	7	8	1	11	16	19	0	8
<i>Perognathus inornatus</i> San Joaquin pocket mouse	G2G3 S2S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern	332 623	140 S:4	0	1	0	0	0	3	0	4	4	0	0
<i>Phrynosoma blainvillii</i> coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	300 320	784 S:3	0	2	0	0	0	1	0	3	3	0	0
<i>Plegadis chihi</i> white-faced ibis	G5 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	290 290	20 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Puccinellia simplex</i> California alkali grass	G3 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	350 350	80 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Sorex ornatus relictus</i> Buena Vista Lake ornate shrew	G5T1 S1	Endangered None	CDFW_SSC-Species of Special Concern	290 335	7 S:3	0	0	0	0	1	2	3	0	2	1	0
<i>Spea hammondi</i> western spadefoot	G2G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	312 378	1422 S:11	0	3	0	4	0	4	5	6	11	0	0
<i>Stylocline citroleum</i> oil neststraw	G3 S3	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive		84 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Stylocline masonii</i> Mason's neststraw	G1 S1	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive	330 330	7 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Taxidea taxus</i> American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	800 800	594 S:2	0	0	1	0	0	1	1	1	2	0	0
<i>Tortula californica</i> California screw moss	G2G3 S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	160 160	15 S:1	0	0	0	0	0	1	1	0	1	0	0



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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.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	G4T2 S2	Endangered Threatened		290 1,190	1020 S:78	1	13	10	3	0	51	40	38	78	0	0
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	290 290	13 S:1	0	0	0	0	0	1	1	0	1	0	0

Appendix C. CNPS plant list.

Search Results

Back

Export Results

20 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1B,2B], Quad is one of [3511931,3511942,3511941,3511848,3511932,3511838,3511922,3511921,3511828]

Scientific Name	Common Name	Family	Lifeform	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank	General Habitats
Micro Habitats	Lowest Elevation	Highest Elevation		CA Endemic	Date Added	Photo				
Search:										
▲ Scientific Name	Common Name	Family	Lifeform	Blooming Period	Fed List	State List	Global Rank	State Rank	CA Rare Plant Rank	Photo
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	Fabaceae	annual herb	May-Oct	None	None	GUT1	S1	1B.1	No Photo Available
<i>Atriplex cordulata</i> var. <i>cordulata</i>	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	No Photo Available
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	None	None	G4T3	S3	1B.2	No Photo Available
<i>Calochortus striatus</i>	alkali mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G3?	S2S3	1B.2	No Photo Available
<i>Caulanthus californicus</i>	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	No Photo Available
<i>Chloropyron molle</i> ssp. <i>hispidum</i>	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	No Photo Available
<i>Delphinium recurvatum</i>	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	No Photo Available
<i>Diplacus pictus</i>	calico monkeyflower	Phrymaceae	annual herb	Mar-May	None	None	G2	S2	1B.2	No Photo Available
<i>Eremalche parryi</i> ssp. <i>kernensis</i>	Kern mallow	Malvaceae	annual herb	Jan(Feb)Mar-May	FE	None	G3G4T3	S3	1B.2	No Photo Available
<i>Eschscholzia lemmonii</i> ssp. <i>kernensis</i>	Tejon poppy	Papaveraceae	annual herb	(Feb)Mar-May	None	None	G5T2	S2	1B.1	No Photo Available
<i>Imperata brevifolia</i>	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G4	S3	2B.1	No Photo Available
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	No Photo Available
<i>Layia leucopappa</i>	Comanche Point layia	Asteraceae	annual herb	Mar-Apr	None	None	G1	S1	1B.1	No Photo Available
<i>Monolopia congdonii</i>	San Joaquin woollythreads	Asteraceae	annual herb	Feb-May	FE	None	G2	S2	1B.2	No Photo Available
<i>Navarretia setiloba</i>	Piute Mountains navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.1	No Photo Available
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Cactaceae	perennial stem	Apr-May	FE	CE	G5T1	S1	1B.1	No Photo Available
<i>Puccinellia simplex</i>	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G3	S2	1B.2	No Photo Available
<i>Stylocline citroleum</i>	oil neststraw	Asteraceae	annual herb	Mar-Apr	None	None	G3	S3	1B.1	No Photo Available
<i>Stylocline masonii</i>	Mason's neststraw	Asteraceae	annual herb	Mar-May	None	None	G1	S1	1B.1	No Photo Available
<i>Tortula californica</i>	California screw moss	Pottiaceae	moss		None	None	G2G3	S2?	1B.2	No Photo Available

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Appendix C

Cultural Resources Report

**CLASS III INVENTORY/PHASE I SURVEY,
ANDREA AVENUE SEWER PROJECT,
KERN COUNTY, CALIFORNIA**

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October 2021
PN 36790.01

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MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for the Andrea Avenue Sewer Project (Project), Bakersfield, Kern County, California. The study area is located in southeastern Bakersfield, in Section 18, Township 30 South, Range 28 East, Mount Diablo and Meridian. ASM Affiliates, Inc., conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and the California Environmental Protection Act (CEQA).

A records search of site files and maps was obtained from the Southern San Joaquin Valley Information Center (IC), California State University, Bakersfield. A Sacred Lands File records search was also received from the Native American Heritage Commission (NAHC). Tribal organizations on the NAHC contact list were contacted by letter to determine whether tribal cultural resources are present within the study area, with follow-up phone calls one month later. These investigations determined that the study area had not been previously surveyed and that no cultural or tribal cultural resources were known to exist within it.

The Class III inventory/Phase I survey fieldwork was conducted with parallel transects spaced at 15-meter (m) intervals walked along the approximately 27.5-acre (ac) area of potential effect (APE). No historical resources or historic properties of any kind were discovered within the APE. Based on these results, the Andrea Avenue Sewer Project study area does not have the potential to result in adverse effects to historical resources or historic properties, and no additional archaeological work is recommended.

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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 Andrea Avenue Sewer Project study area. The Project study area is located within the City of Bakersfield, Kern 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 study area 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.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist 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 study area.

1.1 PROJECT LOCATION

The APE encompasses approximately 27.5-acres of previously disturbed and developed in southeast Bakersfield, Kern County, California. The proposed project area is generally located east of Highway 99 and south of Highway 58; bounded between El Pacheco Road to the south, South Chester Avenue to the north, South Union Avenue to the east, and Monitor Street to the west. This places the study area within urban Bakersfield and on the open flats of the San Joaquin Valley. Elevation within the study area, which is essentially flat, ranges between approximately 360-feet and 385-feet (ft) above mean sea level (amsl). This 27.5-acres study area constitutes the area of potential affect (APE) for the project.

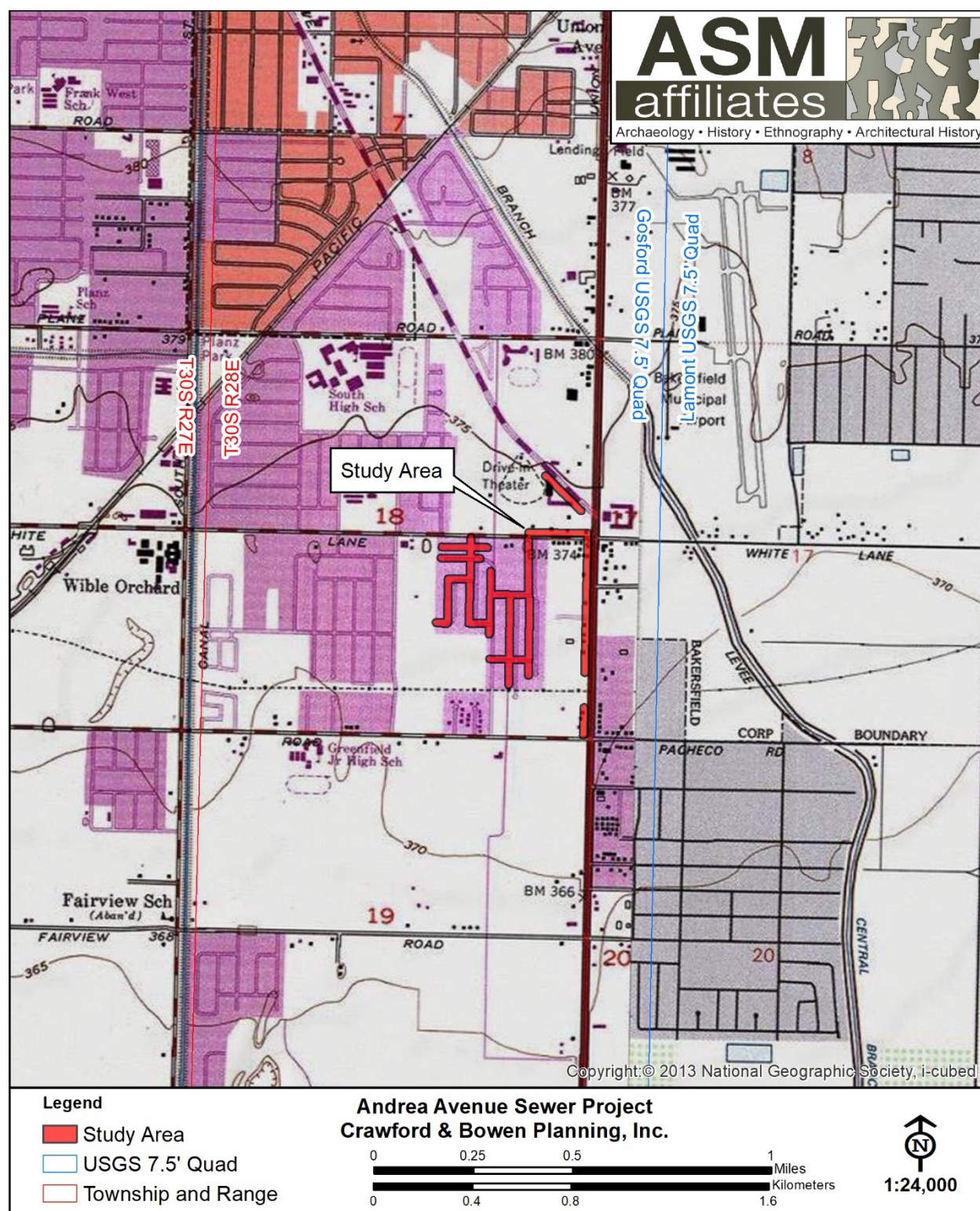


Figure 1. Location of the Andrea Avenue Sewer Project, Bakersfield, Kern County, California.

1.2 PROJECT DESCRIPTION AND APE

The proposed Andrea Avenue Sewer Project will involve improvements to the existing water infrastructure in southeast Bakersfield and within existing rights-of-way along Chester Avenue, White Lane, Union Avenue, Gordon Street, Janet Avenue, Vern Street, Rigby Avenue, Eve Street, Joe Avenue, Kenny Street, Deborah Avenue, Johndra Avenue, and Andrea Avenue. The proposed Project will involve septic tank abandonments, manhole installations, and 6-inch, 8-inch, and 10-inch sewer mains installed within the service area. The total combined area of disturbance would encompass approximately 27.5-acres of previously disturbed land. All future staging, laydown, excavation, and construction will take place within the 27.5-acres.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

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 NHPA 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>)

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2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the study area at an elevation range between approximately 360-feet and 385-feet (ft) above mean sea level (amsl) and on the open flats of the San Joaquin Valley. Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been valley grasslands grading into oak woodlands in the foothills to the east (*cf.* Schoenher 1992). Historical and recent land-use has changed the vegetation that was once present within and near the study area. Currently the study area contains no native or intrusive vegetation due to previous development. 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.

The study area falls within the Kern River Fan. According to the geoarchaeological model developed by Meyer et al. (2010), the study area has a very low potential for buried archaeological deposits. Buried sites and cultural resources are therefore considered to be unlikely within the Project 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. The result is an unfortunate scarcity of ethnographic detail on southern 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.

Kroeber (1925: Plate 47) places the study area within Yauelmani Yokuts territory, with the village Woilo located in the general Bakersfield area (see also Latta 1977). Regardless of this attribution, the Yokuts settlement pattern was largely consistent across distinct tribes. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with

dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again 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 Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to 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). Based on these sources, the general prehistory of the region can be outlined 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, 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. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake northwest of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7,500 to 4,000 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). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). 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 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically 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 Windmill 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 posited 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, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at that time (Sutton 2009, 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 3,500 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 1,500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It

included major droughts matched by intermittent “mega-floods,” and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90% 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 peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (ibid). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W & S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located northwest of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be 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 roughly 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 appears to have mediated some of the 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 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 (JRP Historical Consulting 2009). 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 (JRP Historical Consulting 2009).

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). According to General Land Office records, the Southern Pacific Railroad patented its route north of Bakersfield between 1874 and 1877. The railroad apparently was constructed a few years prior.

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 state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. 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). With the end of World War II, an economic boom developed, reviving the local economy and bringing even more people into the Bakersfield area.

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 4,000 to 1,500 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 4,000 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. *Integrity* 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.

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3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the study area had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on 9 August 2021. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project 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 records search included the study area and a half-mile buffer.

According to the IC records search (Confidential Appendix A), no previous surveys have been conducted within the study area, and no cultural resources of any kind are known to exist within it. An additional five (5) previous surveys have been conducted within 0.5-mi and outside of the study area (Table 1). As a result of those studies, one cultural resource was identified within that radius (Table 2).

A search of the Native American Heritage Commission (NAHC) Sacred Lands Files was also requested. According to the NAHC records, no sacred sites or tribal cultural resources are known in or near the study area. Letters requesting information on any tribal cultural resources were sent to organizations and individuals on the NAHC contact list on 24 August 2021 (see Confidential Appendix A). Follow-up email outreach was made to the contacted tribes/tribal organizations one month later. No specific substantive comments were received in return.

Table 1. Survey Reports within 0.5-miles of the Study Area

Report No.	Year	Author (s)/Affiliation	Title
KE-02147	1998	Pruett, Catherine Lewis/ Three Girls and a Shovel	A Cultural Resources Assessment of 80 Acres Located at South Cottonwood Road and East Pacheco Road, Bakersfield, Kern County, CA
KE-02211	1998	Pruett, Catherine Lewis/ Three Girls and a Shovel	A Cultural Resources Assessment of Old Town Kern-Pioneer Redevelopment Project and Southeast Redevelopment Project, Bakersfield, Kern County, California
KE-03410	2006	Hudlow, Scott M./ Hudlow Cultural Resource Associates	A Phase I Cultural Resource Survey for Dee Jaspar and Associates, City of Bakersfield, California
KE-03595	2009	Gold, Alan P./ Archaeological Associates of Kern County	Cultural Resource Survey of a 40-Acre Parcel, Within the Bakersfield Municipal Airport, Between White Lane and Casa Loma Drive, Bakersfield, Kern County, California
KE-04708	2015	Clifton, Virginia and Ayers-Rigsby, Sara/ EBI Consulting	Cultural Resources Survey Fairview and Monito / Ensite #24300 (278474) 5350 South Union Avenue, Bakersfield, Kern County, California

Table 2. Resources within 0.5-miles of the Study Area.

Primary #	Type	Description
P-15-007999	Structure	Historic Single-Family Building, Andrea Avenue Sewer Project

In addition to the records search, historic maps were examined to determine whether historical development had occurred within the APE. A review of the USGS 1910 (HTMC, 1912 ed.; 1:125,000), 1912 (HTMC, 1939 ed.; 1:125,000), and 1942 (HTMC, 1944 ed.; 1:62,500) and 1954 (HTMC, 1955 ed.; 1:24,000) topographical quadrangles indicates that development within portions of the APE occurred as early as 1910. Initial settlement in the Study Area occurred along dirt roads and consisted of what appear to be single-family residences located following the current street grid-pattern of White Lane and Union Avenue (then unnamed); however, these no longer exist. By 1932, Union Avenue (then Golden State Highway) had already been paved and by 1954, subdivision development appears along it. By the early 1940s, Chester Ave had been charted and a drive-In theater built northwest of the study area. No earlier structures appear to have been constructed within the APE.

Based on the records search results, the study area appeared to have low archaeological and tribal cultural resources sensitivity.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventor/Phase I survey of the Andrea Avenue Sewer Project study area was conducted on 27 August 2021 by ASM Associate Archaeologist Robert Azpitarte, B.A. 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); 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. Parallel survey transects spaced at 15-m apart were employed for the inventory.

4.2 SURVEY RESULTS

A 50-foot wide buffer was included on each side of the pipeline route and the proposed well construction/upgrade locations. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of the roads (Figure 2). Also adjacent to the proposed pipe corridors were residential front yards with planted grass; paved parking lots, and undeveloped portions of private property (Figure 3). Surface visibility was moderate to excellent throughout the Project APE, though planted lawn and paved areas restricted surface visibility in some areas. Careful attention was paid to any exposed ground-surface (e.g., in planters or road shoulders) immediately adjacent to paved or lawn areas to ensure survey coverage. The study area has been completely disturbed.

No cultural resources of any kind were identified within the study area as a result of the inventory.



Figure 2. Overview of study area corridor along Chester Avenue, looking southeast.



Figure 3. Overview of study area corridor along Andrea Avenue, looking east.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III archaeological inventory/Phase I survey was conducted for the Andrea Avenue Sewer Project, Bakersfield, Kern County, California. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. This indicated that no previous surveys had taken place within the study area, and no cultural resources were known to exist within, or in the vicinity of, the study area. The NAHC Sacred Lands files were consulted and no tribal cultural resources are known within the study area. Outreach to tribes and tribal organizations also failed to identify tribal cultural resources in or near to the study area.

The survey fieldwork was conducted on 27 August 2021, with parallel transects spaced at 15-meter intervals walked across the study area. No cultural resources of any kind were identified within the Project study area as a result of the inventory.

5.1 RECOMMENDATIONS

An intensive Phase I survey/Class III inventory demonstrated that the Andrea Avenue Sewer Project study area lacks archaeological and/or historical resources. The proposed project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A finding of No Impacts/No Historic Properties Affected 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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