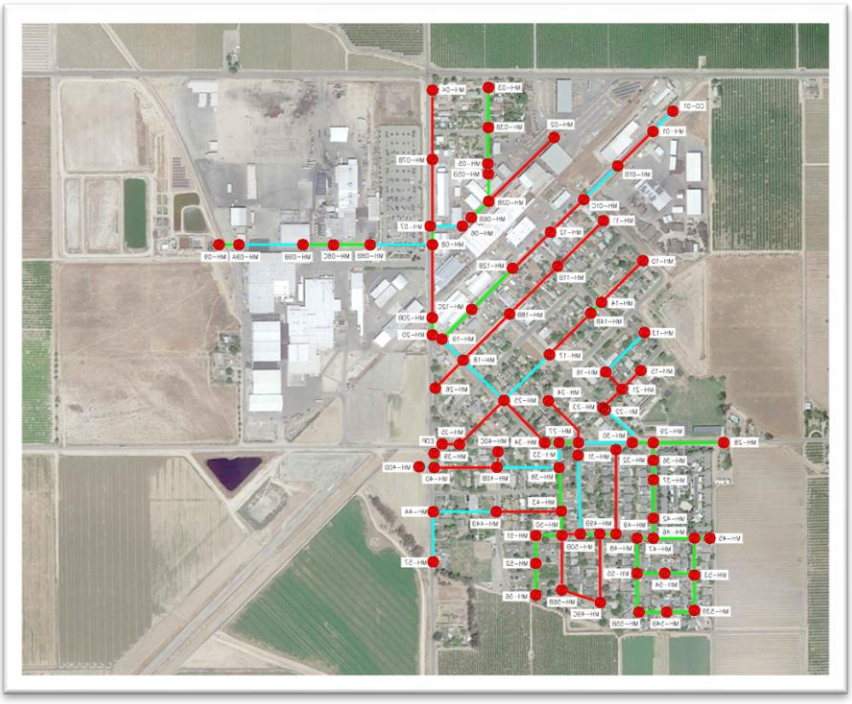

MITIGATED NEGATIVE DECLARATION

Del Rey Community Services District
Sanitary Sewer Collection System and WWTP Improvements Project

April 2026

PREPARED FOR:

Del Rey Community Services District
10649 Morro Avenue
P.O. Box 186
Del Rey, CA 93616

PREPARED BY:

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

Initial Study/Mitigated Negative Declaration

Del Rey Community Services District Sanitary Sewer Collection System and WWTP Improvements Project

Prepared for:

Del Rey Community Services District
10649 Morro Avenue
P.O. Box 186
Del Rey, CA 93616

Contact: Maria Reyna
Phone: (559) 888-2272

Prepared by:

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April 2026

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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 a sanitary sewer collection system and WWTP improvements Project, which will replace or rehabilitate deteriorated gravity sewer mains throughout the District in order to prevent SSOs and provide adequate sewer services to all customers within the District's service area. More specifically, the proposed Project intends to rehabilitate approximately 1,964 LF (linear feet) of gravity sewer mains using trenchless construction methods, replace approximately 886 LF of gravity sewer mains via conventional construction methods, and make miscellaneous repairs and improvements to the District's Wastewater Treatment Plant (WWTP). Refer to Chapter Two – Project Description for more information.

The Del Rey Community Services District (CSD) 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 CSD 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 CSD 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

Del Rey CSD (District) is located on the east side of Fresno County, in the southern portion of the San Joaquin Valley. The District is situated approximately 19 miles southeast of the City of Fresno and 7 miles southwest of the City of Sanger. The cities of Reedley and Selma are approximately 14 miles southeast and 16 miles south, respectively.

As a public agency, the District provides both water and sewer service to residential, commercial, and industrial customers within their service area. The District's service area encompasses approximately 0.465 square miles, and the Sphere of Influence (SOI) encompasses approximately 0.47 square miles. However, the District has the option to annex the land and develop it in the future.

The District owns and operates a District-wide sewer collection system and a Wastewater Treatment Plant (WWTP) under Waste Discharge Requirements (WDR) No. 96-284. The sewer collection system currently serves residences and businesses within the District limits. The wastewater is conveyed by the sewer collection system to the District's WWTP, which is located east of the community, south of American Avenue, and east of the Garfield Ditch. The WWTP consists of headworks, a packaged extended aeration reactor with an integral clarifier and three aerobic digesters. Treated effluent is discharged to 6 unlined evaporation/percolation ponds. The existing WWTP has a capacity to dispose of up to 0.30 million gallons per day (MGD).

CCTV inspection conducted on 23,387 linear feet (LF) of the City's sewer collection system revealed severe defects in portions of the collection system including root intrusion, fractured and broken pipe, cracked pipe, sags greater than 60 percent, defective and intruding laterals, joint displacements, and attached deposits (grease and concrete). The purpose of the proposed sanitary sewer collection system and WWTP improvements Project is to replace or rehabilitate these deteriorated gravity sewer mains throughout the District in order to prevent sanitary sewer overflows (SSOs) and provide adequate sewer services to all customers within the District's service area.

The District is considered to be a disadvantaged community (DAC). The current residential sewer rate is $65.37 per month ($784.44 per year), which is approximately 1.60% percent of the median household income (MHI). According to the 2017-2022 U.S. Census American Community Survey (ACS), the District's MHI is $48,897, which is approximately 54% of the MHI of the state of

California. The Project is being partially funded by the Clean Water State Revolving Fund (CWSRF).

2.2 Location

Del Rey CSD (District) is located on the east side of Fresno County, in the southern portion of the San Joaquin Valley. The District is situated approximately 19 miles southeast of the City of Fresno and 7 miles southwest of the City of Sanger. The cities of Reedley and Selma are approximately 14 miles southeast and 16 miles south, respectively. The District's service area encompasses approximately 0.465 square miles, and the Sphere of Influence (SOI) encompasses approximately 0.47 square miles.

The segments of the sewer collection system recommended for replacement have been selected based on sorted NASSCO ratings and the condition of the existing sewer mains. It is recommended that approximately 886 LF of gravity sewer mains be replaced with new sewer pipes before failure occurs. These replacements are recommended where the sags are greater than 60 percent of pipe diameter, broken pipe sections with visible voids and blockages, and severe pipe offsets. A total of 1,963 LF has been suggested for replacement and 886 LF has been suggested for rehabilitation. See Figure 2 for the specific locations of the sewer pipe segment replacements and rehabilitation.

In addition to the sewer collection system, several miscellaneous improvements and repairs are needed at the District's WWTP in order to improve treatment operations. Existing WWTP facilities are located southwest of the corner of E. American Avenue and S. Indianola Avenue, east of Garfield Ditch. Improvements will be made at the current location but will also include 20.0 acres of District-owned grape vineyards, located east of S. Indianola Avenue. See Figure 3 for specific location of WWTP improvements and components.

2.3 Setting and Surrounding Land Use

The Project site related to sewer pipe improvements consists of the District's existing public right-of-way, which are primarily paved streets throughout the residential neighborhoods of Del Rey. The Project site related to existing WWTP improvements will occur just east of Del Rey, and south of E. American Avenue. Land uses north, south and east of the WWTP are agricultural, with commercial development and parking lots to the west.

Figure 1 – Regional Location Map

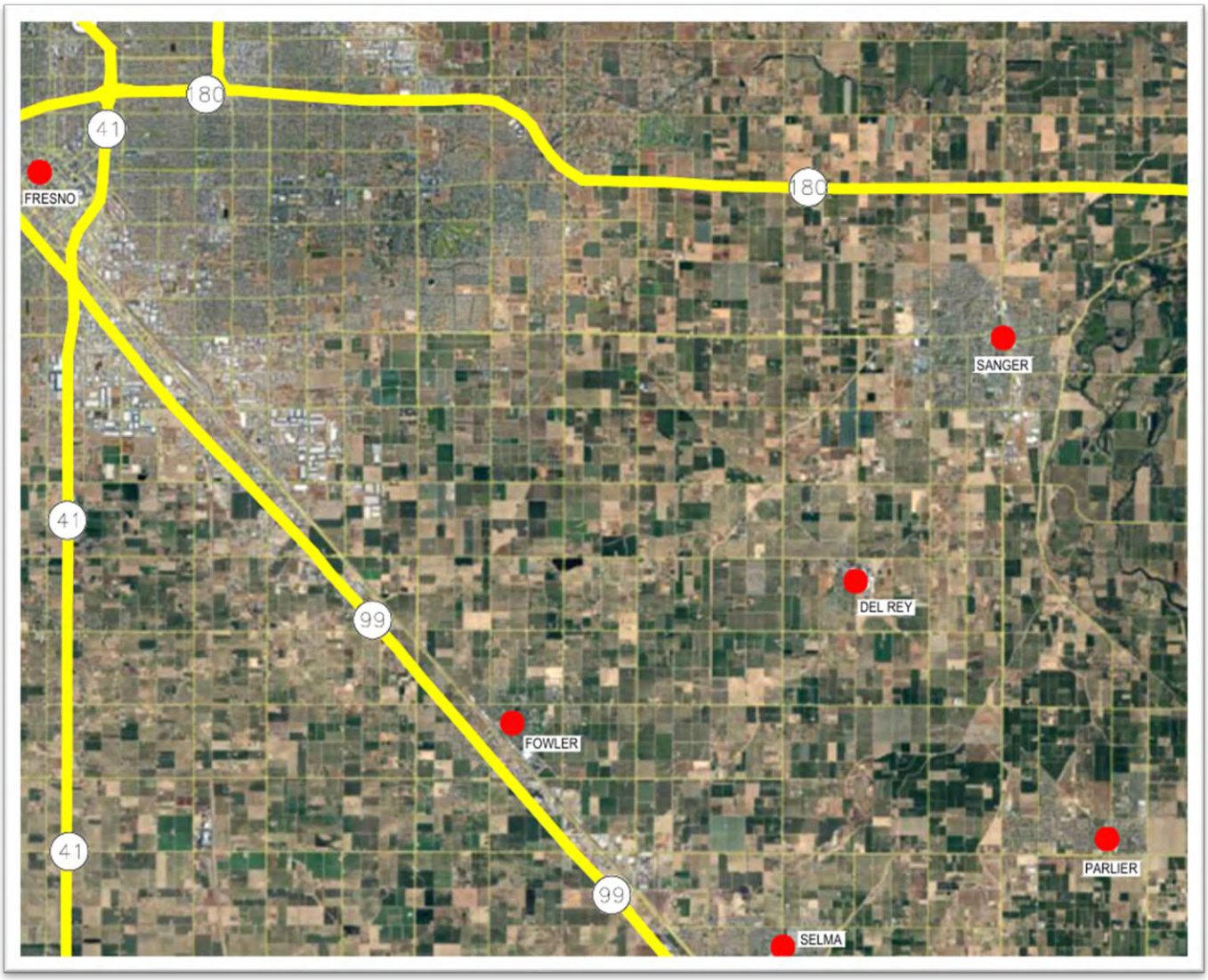


Figure 2 – Project Site Map
Proposed Sewer Collection System Improvements to be Replaced and Rehabilitated

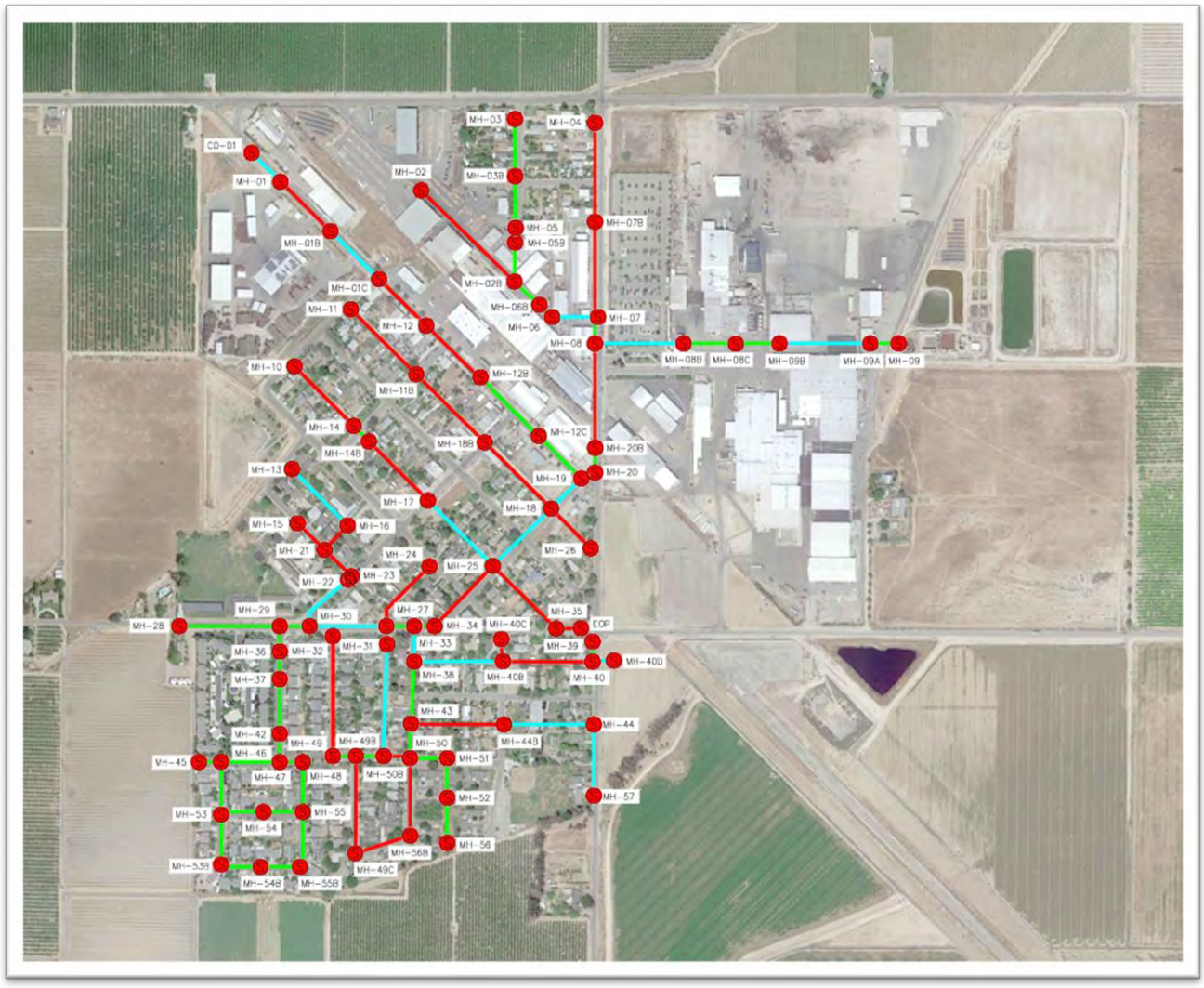
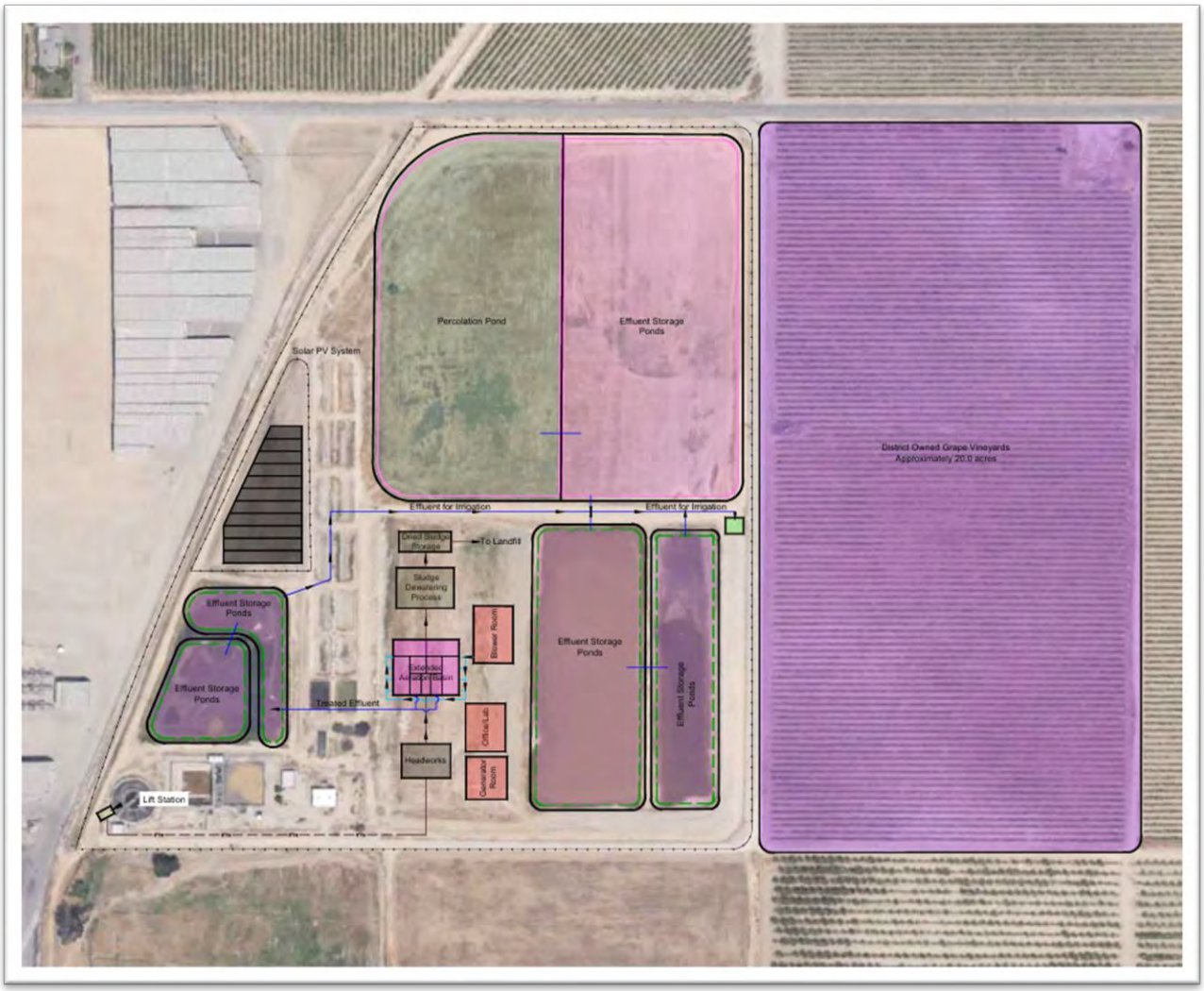


Figure 3 – Project Site Map
Proposed WWTP Improvement Layout



2.4 Project Description

AM Consulting Engineers, Inc. prepared the *Del Rey CSD – Sanitary Sewer Collection System and WWTP Improvements Preliminary Engineering Report* (June 2024) to provide a comprehensive evaluation of the Del Rey CSD existing sewer collection system and provide recommendations that will address the needed sewer and WWTP improvements for the CSD. Please refer to that document, in Appendix A for specific project characteristics. A summary of Project activities is included herein.

The CSD proposes to rehabilitate approximately 1,964 LF of gravity sewer mains using trenchless construction methods, replace approximately 886 LF of gravity sewer mains via conventional construction methods, and provide miscellaneous repairs and improvements to the District's Wastewater Treatment Plant (WWTP). This Project will involve construction and operation of the following components:

1. **Sewer Main Replacement**: For this proposed Project, it is recommended that approximately 886 LF of gravity sewer mains be replaced with new sewer pipes before failure occurs. These replacements are recommended where the sags are greater than 60 percent of pipe diameter, broken pipe sections with visible voids and blockages, and severe pipe offsets. Where possible, replacements are limited to only those sections of pipe where the defects are found rather than replacing the entire stretch of pipe between two manholes. See Figure 2 for locations of pipe replacement.

2. **Sewer Main Rehabilitation**: Trenchless sewer rehabilitation is recommended where applicable in order to reduce surface disturbance over traditional dig and replace methods, reduce the number of traffic and pedestrian detours, spare tree removal, decrease construction noise, and reduce air pollution from construction equipment. Cured-in-Place Pipe (also known as CIPP) rehabilitation is proposed for the pipe stretches that have mild defects and sag less than 60% of pipe diameter. See Figure 2 for locations of pipe rehabilitation.

3. **Improvements to Wastewater Treatment Plant:** In addition to the sewer collection system, several miscellaneous improvements and repairs are needed at the District's WWTP in order to improve treatment operations. See Figure 3 for the proposed WWTP improvements layout. A list of priority improvements and the repairs needed to the District's WWTP are listed below:

- Construction of new headworks with a new 8-inch forced main to the extended aeration basin.
- Construction and installation of a packaged extended aeration treatment system with integrated digestor and clarifier.
- Construction of a blower building.
- Installation of new piping throughout the upgraded WWTP.
- Installation of HPDE pond liners on storage ponds.
- Installation of SCADA Operating System.
- Construction of Irrigation Pump Station.
- Miscellaneous electrical and instrumentation upgrades.
- Construct sampling docks at storage ponds.
- Upgrading the existing solar PV system.

Project Schedule

Approval of the CWSRF construction application is expected to take at least a year after submission to the SWRCB. After approval, the Project engineer can begin the Project design. Once the plans and specifications and construction documents have been prepared, bidding can begin, followed by construction. Construction time is expected to be one year.

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 significant deterioration of the existing sewer infrastructure.
- To improve existing wastewater treatment abilities in the CSD system with the most cost-effective methods available that meet the CSD's overall system performance and regulatory compliance requirements, but also to accommodate potential population growth in the Del Rey area.

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 Del Rey CSD.
- Regional Water Quality Control Board approval.
- State Water Board approval.

Chapter 3

IMPACT ANALYSIS

Initial Study Checklist

3.1 Environmental Checklist Form

Project title:

Del Rey CSD – Sanitary Sewer Collection System and WWTP Improvements Project

Lead agency name and address:

Del Rey Community Services District
10649 Morro Avenue
P.O. Box 186
Del Rey, CA 93616

Contact person and phone number:

Maria Reyna
(559) 888-2272

Project location:

See Section 2.1

Project sponsor's name/address:

Del Rey Community Services District
10649 Morro Avenue
P.O. Box 186
Del Rey, CA 93616

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. 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.

4/15/26

Travis Crawford, AICP — Date

Crawford & Bowen Planning, Inc.

Environmental Consultant for the Del Rey CSD

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, ssubstantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

RESPONSES

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

Less Than Significant Impact. A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscape for the benefit of the general public. The Sierra Nevada Mountains, Coastal Range, and foothills are the primary natural and visual resources in the proposed Project region. Views of the mountains and hills are afforded only during clear conditions due to poor air quality in the valley. Distant views of the mountains and hills would largely be unaffected by the

development of the Project because of the nature of the Project, distance and limited visibility of these features from the Project site. The Project will not impact views of a protected scenic vista or resource from surrounding vantage points.

The proposed Project would not damage any trees, rock outcroppings or historic buildings within a State scenic highway corridor. Therefore, 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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's Wastewater Treatment Plant (WWTP), see Chapter Two – Project Description. Views of surrounding areas associated with the sewer mains will not be impacted by the Project, since all of the finished work will be below grade or at-grade. The proposed WWTP improvements will be constructed or implemented on the current WWTP site. See Figure 3 in Chapter Two – Project Description for a detail layout. Much of the WWTP site improvements will consist of installing new piping throughout, installing pond liners on storage ponds, and other tasks that would ultimately be at or below grade. However, there are several improvements such as construction of an irrigation pump station and construction of a blower building, which will be above ground structures. These will be low level structures that will be surrounded with fencing. There are no residences or businesses adjacent to the site, however, the WWTP will be viewable from travelers on surrounding roadways. Implementation of the proposed Project will alter the visual character of the existing WWTP site through the construction of additional buildings or structures as proposed by the CSD. The previously described improvements to the WWTP are not expected to create a visually degraded character or quality to the Project site or to the properties near and around the Project site, as the site has previously been developed with WWTP structures.

Construction activities will be seen by the residences and businesses within the immediate vicinity and by vehicles driving in the CSD; 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?

Less Than Significant Impact. Currently the sources of light in the Project area are from security lights and vehicles traveling along surrounding roads. The Project will not introduce new lighting beyond the lighting types that currently exist at the WWTP. Additional night lighting sources on the Project site, especially any unshielded light, would result in spillover light that could impact surrounding adjacent uses. The CSD will require lighting systems to be shielded to direct light to ground surfaces and orient light away from adjacent properties. Accordingly, the proposed Project would not create substantial new sources of light or glare. There is a ***less than significant impact.***

Mitigation Measures: None are required.

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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. The sewer mains and associated infrastructure will largely occur within the existing right of way and will be installed underground. The Project areas where the sewer main replacements and repairs will occur are characterized as Urban / Built Up Land by the Department of Conservation's Farmland Mapping & Monitoring Program (FMMP). The area associated with the proposed WWTP improvements is also characterized as Urban / Built Up Land by the FMMP, while the District-owned field east of the WWTP is considered Unique Farmland.[1] 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.

All improvements will take place within an area that is built up with rural and urban uses or is otherwise not characterized as farmland. The District-owned field, considered to be Unique Farmland, will be utilized for effluent disposal; a passive process by which the effluent will be

[1] California Department of Conservation, Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed March 2026.

conveyed through an irrigation pump station to irrigate the field. No construction will take place in the field. As such, the proposed Project does not have the potential to result in the conversion of Farmland to non-agricultural uses or forestland uses to non-forestland. There is ***no impact***.

Mitigation Measures: None are required.

III. AIR QUALITY

Would the project:

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

RESPONSES

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

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

c. Expose sensitive receptors to substantial pollutant concentrations?

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

[2] San Joaquin Valley Air Pollution Control District. Ambient Air Quality Standards & Attainment Status. https://www.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/. Accessed March 2026.

Ozone Plans such as 2022 Ozone Plan for the San Joaquin Valley, 2016 Plan for the 2008 8-Hour Ozone Standard, 1-Hour Ozone Attainment Request, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 Plan for the 1997 8-Hour Ozone Standard, and 2004 Extreme Ozone Attainment Demonstration Plan.

As well as Particulate Matter Plans such as, Particulate Matter (PM) Sources, 2024 Plan for the 2012 PM2.5 Standard, 2018 PM2.5 Plan for the San Joaquin Valley, 2016 Moderate Area Plan for the 2012 PM2.5 Standard, 2015 Plan for the 1997 PM2.5 Standard, 2012 PM2.5 Plan, 2008 PM2.5 Plan, 2006 PM2.5 Plan and 2003 PM2.5 Plan.

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

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

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

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

[3] San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. https://www.valleyair.org/media/g4nl3p0g/gamaqi.pdf. Page 80. Accessed March 2026.

The proposed WWTP and sewer main improvements will generate minimal emissions once they are 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 generated from Project construction. Modeling results are summarized in Table 1 and the full Road Construction Emissions Model output files are provided in Appendix B.

Table 1
Proposed Project Construction Emissions

Pollutant/ Precursor	Construction Emissions (tpy)	Threshold/ Exceed?
CO	0.95	100/**N**
NOx	0.75	10/**N**
ROG	0.09	10/**N**
SOx	0.01	27/**N**
PM_{10}	0.13	15/**N**
$PM_{2.5}$	0.04	15/**N**
CO_2e	194.62	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 CSD and the CSD'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 March 2025 by Colibri Ecological Consulting, LLC (CEC). The BRE is included as Appendix C. 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 is comprised of developed and ruderal land cover. Work areas consisted of paved roads, alleys, parking lots, residential lots, commercial lots, and the existing wastewater treatment plant. The

sanitary sewer collection system work areas were within residential and commercial development areas (Figures 5 and 6 of Appendix C). Ruderal herbaceous vegetation and ornamental trees and shrubs were distributed throughout the survey area surrounding the sewer line work areas (Figures 5 and 6 of Appendix C).

The wastewater treatment plant work area supported ruderal herbaceous vegetation dominated by nonnative annual grasses and forbs (Figures 7–9 of Appendix C). Trees and shrubs were absent from the facility. Two buildings with equipment/debris, concrete basins and associated infrastructure, two effluent ponds (Figure 7 of Appendix C), several small ponds, and a solar photovoltaic array were distributed along the western portion of the facility. Four storage ponds with greater than 1-acre surface area and associated roads comprised the remaining facility footprint (Figures 8 and 9 of Appendix C). Two storage ponds and both effluent ponds were inundated during the 26 and 28 February 2025 reconnaissance surveys (Figures 7 and 9 of Appendix C). The pond banks showed signs of herbicide use (e.g., short, yellow vegetation with twisted leaves and cupped foliage) (Figure 10 of Appendix C). The storage pond basins showed signs of disking (e.g., exposed soil, furrows, short vegetation) (Figure 8 of Appendix C). Two areas within the wastewater treatment plant were under construction during the survey, a storage pond basin in the northern portion (Figure 11 of Appendix C) and aeration basins in the southwest portion. Additional areas throughout the western portion of the wastewater treatment plant contained recently disturbed, exposed soil and soil stockpiles. California ground squirrel (*Otospermophilus beecheyi*) and other small mammal burrows were present throughout the wastewater treatment plant (Figure 10). Domestic dogs (*Canis familiaris*) inhabited the facility and were present during the reconnaissance survey.

The Project site was mostly encompassed by agricultural lands. The sewer collection system portion of the Project site was bordered by dry retention basins to the west and east; commercial development to the north, east, and south; and agricultural lands in all directions. The wastewater treatment plant portion of the Project site was bordered by Garfield Ditch (Figures 2 and 12 of Appendix C) and commercial development to the west, a photovoltaic solar site to the south, and agricultural lands to the north and east. Aerial imagery indicates the wastewater treatment plant has been routinely disced since at least 1998 (Google 2025).

Desktop Review

The USFWS species list for the Project included 10 species listed as threatened, endangered, or proposed for listing under the FESA. None of those species could occur on or near the Project site due to the lack of habitat or because the Project site is outside the known range of the species (Table 1 of Appendix C). As stated in the species list, the Project site occurs outside any proposed or designated USFWS critical habitat.

Searching the CNDDB for records of special-status species from the Sanger 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 162 records of 43 species and two sensitive natural communities. Of the 43 species, 11 were not considered further because they are not CEQA-recognized as special-status species by state or federal regulatory agencies or public interest groups or are considered extirpated in California. Of the remaining 32 species, five are known from within 5 miles of the Project site. Of those five species, one could occur on or near the Project site—bristly sedge (*Carex comosa*), a special-status plant with a CNPS California Rare Plant Rank (CRPR) of 2B.1. Three additional species from the nine-quad search could also occur on or near the Project site—the state candidate for listing as endangered burrowing owl (*Athene cunicularia*), the state listed as threatened Swainson's hawk (*Buteo swainsoni*), and Sanford's arrowhead (*Sagittaria sanfordii*, CRPR 1B.2). None of the other species nor the sensitive natural communities identified in the nine-quad search could occur on or near the Project site due to the lack of habitat.

Searching the CNPS inventory of rare and endangered plants of California yielded 19 species, 14 of which have a CRPR of 1 or 2 and four of which are also state or federally listed. Two of those 14 plant species, both mentioned above, could occur on or near the Project site.

The Project site is underlain by Exeter loam (46.7%); Hanford fine sandy loam (29.5%); Pollasky sandy loam, 2 to 9 percent slopes (7%); Grangeville fine sandy loam, water table (6.3%); Hanford sandy loam (5.6%); Pollasky fine sandy loam, 2 to 9 percent slopes (3.5%); Water (0.7%, in effluent storage ponds at the wastewater treatment plant); Exeter sandy loam (0.4%); and Ramona sandy loam (0.4%). The Project site was mostly flat and level aside from excavated wastewater ponds at the treatment plant and is at an elevation of 334 352 feet above mean sea level.[4]

Reconnaissance Survey

Colibri Senior Scientist Amy Hernandez and Staff Scientist Madison Wallwork conducted a field reconnaissance survey at the Project site on 26 and 28 February 2025. The Project site and a 50-foot buffer (Figure 3 of Appendix C) surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state or federally protected resources. Residential and commercial areas with limited access were surveyed with binoculars. All plants except those under cultivation or planted in residential and commercial areas and all vertebrate wildlife species observed within the survey area were identified and documented. The survey area was evaluated for the presence of regulated habitats, including lakes, streams, and other waters as defined by the USACE, CDFW, and under the Porter-Cologne Water Quality Control Act. An additional buffer of 0.5 miles around the Project

[4] Biological Resource Evaluation – Del Rey Sewer and Wastewater Treatment Plant Improvements (March 2025), page 21 and 22.

site was inspected for potential nesting habitat for special-status raptors. 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.

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 state candidate for listing as endangered burrowing owl and the state listed as threatened Swainson's hawk. The Project is not expected to affect any other special-status species due to the lack of habitat or known occurrence records for those species near the Project site.

Migratory Birds

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

Regulated Habitats

The BRE concludes the Project will have **no effect** on regulated habitats as no impacts to such habitats are expected.

Direct and Indirect Impacts

The Project could adversely affect, either directly or through habitat modifications, two special-status animal species 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. Therefore, Mitigation Measures BIO-1 and BIO-2 (below) be included in the conditions of approval to reduce the potential impacts to less-than-significant levels.

Mitigation Measures:

BIO – 1 Protect burrowing owl.

1. A pre-construction clearance survey shall be conducted by a qualified biologist to ensure that no burrowing owl will be disturbed during the implementation of the Project. A pre-

construction clearance 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 burrowing owl habitat in and immediately adjacent to the impact areas.

2. If a burrowing owl or sign of burrowing owl use (e.g., feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.

BIO – 2 Protect nesting Swainson's hawks.

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for active Swainson's hawk nests no more than 14 days prior to the initiation of construction activities. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site.
3. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.

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-3 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measures:

BIO – 3 Protect Nesting Birds

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.
2. If it is not possible to schedule construction between September and January, 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

Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. To meet State and federal requirements, the CSD retained Hudlow Cultural Resource Associates 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 May 2025. The *Phase I Cultural Resource Survey for the Sanitary Sewer Collection and Wastewater Treatment Plant Improvements, Del Rey, Fresno County* (Cultural Study) is included as Appendix D. The results of the Cultural Study are summarized herein and were used to support the determinations made in this CEQA document.

<u>Project Location</u>

The project area is in Del Rey, Fresno County, California. This project area is bound by American Avenue to the north, Garfield Ditch to the south and east and the line one quarter mile east of the Section 5 half

section line. The project area is located in the E ½ of Section 5 and the NW ¼ of Section 4, T.15S., R.22E., Mount Diablo Baseline and Meridian, as displayed on the United States Geological Survey (USGS) Sanger 7.5-minute quadrangle map (Figure 1 of Appendix D). The proposed sewer system improvements will be located in public right-of-ways, which are primarily existing roads, streets, and alleyways throughout Del Rey and the surrounding Fresno County area in Fresno County, California (Figure 2 of Appendix D).

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. Outreach letters and follow-up emails were sent to the tribal organizations on the NAHC contact list (Confidential Appendix). Based on the results of the IC and NAHC records searches, the tribal outreach, the review of historical maps, and the Meyer et al. (2010) geoarchaeological sensitivity model, the APE appears to have low to moderate archaeological sensitivity.

Records Search and Site-Specific Research

A record search of the Project area and the environs within one half-mile was conducted at the Southern San Joaquin Information Center. Scott M. Hudlow conducted the record search, RS# 25-111, on March 5, 2025. The record search revealed that six cultural resource surveys have been conducted within one half-mile of the Project area. Three of these cultural resource surveys have previously addressed portions of Del Rey (Ptomey 1990, Varner 2002, and Billat (2004)). Three cultural resources have been located on the current Project area; these are the only cultural resources that have been recorded within one half-mile of the current Project area. These three cultural resources are historic, one is AT&SF rail line, the second is a PG&E Tower, and the third is the Garfield Ditch.

Pedestrian Survey

Between April 19, and May 2, 2025, Scott M. Hudlow conducted a pedestrian cultural resource survey of the entire proposed Project area. Hudlow surveyed the entirety of the Sanitary Sewer Collection System and Wastewater Treatment Plant Improvement Project in both east/west and north/south transects across the entire Project area.

One cultural resource was identified, the Garfield Ditch, CA-FRE-003905H. Garfield Ditch is a branch off the Consolidated Canal, which originates at the Kings River near Trimmer. It is an unlined ditch, approximately fifteen feet wide and five feet deep. The Garfield Ditch is located between the Pom Wonderful property to the west and the Del Rey Community Services District Lift Station to the east. It is travelling in a north/south direction at grade. It is diverted under the Pom Wonderful property into a pipe and remerges on the west side of Del Rey Avenue at grade (Figure 5 of Appendix D).

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, one cultural resource was identified on the Project site; Garfield Ditch (CA-FRE-003905H). The Garfield Ditch is located directly to the west of the Del Rey Community Service District's lift station, which already avoids any direct impact to the cultural resource, presumably by boring underneath the Garfield Ditch. A second cultural resource, the Atchison, Topeka and Santa Fe spur line has been removed throughout Del Rey and the associated areas of Fresno County, both to the south and north. The Garfield Ditch brings water down from the Kings River to the northeast. It was built during the twentieth-century, and is a typical unlined agricultural ditch for the conveyance of water. As such, the Garfield Ditch is not associated with any significant events at the local, state or regional levels; thus, the property is not eligible for listing on the California Register under Criterion 1. Research failed to identify anyone at this location that has made a substantial contribution to local or national historical events; thus, the property is not eligible for listing on the California Register under Criterion 2. The Garfield Ditch does not retain the characteristics that reflect a type, period, or method of construction associated with a master craftsman; thus, the property is not eligible for listing on the California Register under Criterion 3. Finally, the property retains no research potential that cannot be gleaned from archival research; thus, the property is not eligible for listing on the California Register under Criterion 4.

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.***

Mitigation Measures: None are required.

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

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

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

Mitigation Measures: None are required.

VI. ENERGY

Would the project:

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

RESPONSES

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. 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 CSD 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 sewer mains do not require energy once they are installed. Operational energy would also be consumed during the WWTP processing and 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 structures associates with the WWTP improvements. Adherence to state code requirements would ensure that the Project would not result in wasteful and inefficient use of non-renewable resources due to operation.

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

Mitigation Measures: None are required.

VII. GEOLOGY AND SOILS

Would the project:

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

VII. GEOLOGY AND SOILS

Would the project:

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

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 Del Rey CSD is not located in a seismically active area and there is low potential for seismic activity in the Project area. According to the Fault Rupture Zones Map prepared by the California Department of Conservation in 2018, the Project site is not located within a Fault-Rupture Hazard Area. Moreover, no active faults have been identified within the Del Rey community. The nearest fault to Del Rey is a portion of the Clovis Fault, located over ten miles to the north. 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. Adherence to local and State regulations would result in a l***ess 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. It is anticipated that the proposed Project site would be subject to some ground acceleration and ground shaking associated with seismic activity during its design life. 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. Adherence to local and State regulations would result in a l***ess 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 sewer main trenches will be returned to pre-construction conditions and will not result in soil erosion greater than existing conditions. Therefore, the impact is ***less than significant***.

Mitigation Measures: None are required.

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

Less than Significant Impact. As described in Impact VI (aii-aiv), the potential for landslides, liquefaction, settlement or other seismically related hazards is 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.[5] 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 main rehabilitation and replacement and WWTP improvement Project in the Project Area. 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 CSD. 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

[5] USGS. California Water Science Center. Land Subsidence: Cause & Effect. https://ca.water.usgs.gov/land_subsidence/california-subsidence-cause-effect.html. Accessed March 2026.

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.***

Mitigation Measures: Implement Mitigation Measure CUL – 1.

VIII. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

RESPONSES

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

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

Less than Significant Impact. The proposed Project would generate exhaust-related GHG emissions during construction resulting from construction equipment operation, material haul and delivery trucks, and by trips by construction worker vehicles. Construction-related GHG emissions are estimated to begin on May 31, 2027 and end April 30, 2028. Emissions would cease following completion of the Project. The proposed Project is not a land-use development project that would generate vehicle trips and is not a roadway capacity increasing project that could carry additional VMT. Therefore, the proposed Project would not result in a net increase in operational GHG emissions. As such, the proposed Project would not interfere or obstruct implementation of an applicable GHG emissions reduction plan. The proposed Project would be consistent with all applicable local plans, policies, and regulations for reducing GHG emissions. Any impacts related to GHG emissions would be ***less than significant.***

Mitigation Measures: None are required.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency	☐	☐	☒	☐

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
response plan or emergency evacuation plan?				
g. Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

RESPONSES

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. While trenching, grading 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 transport, storage, use or disposal of hazardous materials. Water treatment chemicals may be utilized at the WWTP treatment site. Small quantities of petroleum products, thinners, and paints would also likely be used on-site. There are several federal, state and local requirements and regulations that are designed to minimize risks from accidental releases of hazardous materials and the proposed Project will be in compliance with all applicable requirements and regulations. Hazardous material storage and use areas at the WWTP will be built and operated in compliance with the minimum requirements of the Uniform Fire Code and the California Fire Code. Additionally, improvements to the WWTP will be constructed in compliance with the California Building Code, which requires design features to resist forces generated by a major earthquake with limited architectural or structural damage and to provide adequate fire protection that precludes accidental releases of hazardous chemicals due to fire. The WWTP improvements are also subject to review and approval by the Regional Water Quality Control Board (RWQCB). Since the

Project is intended to improve the existing deteriorated sewer system, it is assumed to have a positive impact by reducing the number of sewer 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 Del Rey School, located at 10620 Morro Avenue within the CSD. As previously described, long-term operation of the proposed Project would involve little or no hazardous materials (see previous responses). Once operational, the sewer mains are sealed and will not emit hazardous materials. The WWTP is located more than ¼ mile from the school. Since the Project is intended to improve the existing deteriorated sewer system, it is assumed to have a positive impact by reducing the number of sewer 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 complied pursuant to Government Code Section 65962.5.[6] As such, there is ***no impact.***

Mitigation Measures: None are required.

[6] California Department of Toxic Substance Control. EnviroStor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=delrey. Accessed March 2026.

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

Less Than Significant Impact. There are no airports or airstrips within two miles of the Project. Therefore, the Project has ***no impact*** on any airport operations.

Mitigation Measures: None are required.

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

Less Than Significant Impact. Sewer main replacement and rehabilitation 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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP.

As a public agency, the CSD provides both water and sewer service to residential, commercial, and industrial customers within their service area. The CSD's service area currently encompasses approximately 0.465 square miles, and the SOI encompasses approximately 0.47 square miles. The CSD owns and operates a District-wide sewer collection system and WWTP under Waste Discharge Requirements (WDR) No. 96-284.[7]

The CSD receives 100 percent of its potable water supply from the underlying San Joaquin Valley Groundwater Basin. Del Rey is located in the Kings sub-basin of the San Joaquin Valley groundwater basin in the Tulare Lake Hydrologic Region. The sub-basin encompasses approximately 1,530 square miles. The groundwater is relatively free of contaminants and is used by residential, commercial and

[7] *Del Rey Community Services District, Sanitary Sewer Collection System and WWTP Improvements Preliminary Engineering Report*, AM Consulting Engineers, Inc. Section 2 – Municipal Water Supply. Page 6.

industrial customers. The CSD operates four wells to supply the groundwater to the community; two of these wells cannot be used due to contamination. The CSD distribution system consists of a network of water lines located throughout the community.

The primary need for a sewer collection system improvement project is due to the significant deterioration of the sewer infrastructure in the current CSD area. Inspection revealed poor condition of some of the District's older sewer lines. Defects observed included deformation, root intrusion, cracked pipes, collapsed and broken pipes, sags, intruding laterals, defective lateral break-ins, attached deposits, and medium to large joint displacements. There have been no formal Notices of Violation (NOV) from regulatory agencies concerning the CSD's sewer collection system; however, numerous health and safety threats may arise from sewer system overflows because of sewer line disrepair, which would ultimately result in dangerous conditions on the District's streets and residential properties.

Construction

Excavation, trenching 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

The proposed Project includes several miscellaneous improvements to the existing District-operated WWTP. The WWTP improvements and implementation will be performed under the regulatory requirements of the County of Fresno, the State Water Resources Control Board, and the Regional Water Quality Control Board. Compliance with such regulations will ensure that water quality and waste discharge standards are met. The wastewater characteristics will be typical of urban development and will not result in any additional water releases that could potentially impact groundwater or water quality. Because the Project provides long-needed upgrades to sewer mains currently experiencing blockages and leaks, the Project will likely have a beneficial impact on water quality because of the elimination of existing leaking or damaged sewer pipelines that currently exist. Compliance with the regulatory requirements of the County of Fresno, the State Water Resources Control Board, and the Regional Water Quality Control Board would result in a ***less than significant impact***.

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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. 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 significant 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 upgrades to the sewer collection system will introduce a minimal amount of 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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. The proposed Project pipelines are located largely within the existing streetscape within the CSD as presented in Figure 2 in Chapter Two – Project Description. The rehabilitation and replacement of the sewer mains would not cause any land use changes in the surrounding vicinity nor would it divide an established community. Once construction is completed, disturbed ground around the pipelines will be restored to pre-construction conditions. The WWTP improvements would be located on-site where the current WWTP has been constructed. This area is not surrounded by any urban uses and thus would not cause an established community to divide. 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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. Construction will primarily take place within the existing streetscape and on the existing WWTP site 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 sewer mains. 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. The proposed WWTP improvements would be located on the existing WWTP site, in an area without adjacent residences or businesses. 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.

The Fresno County Noise Ordinance states that noise associated with construction shall be exempted, as long as construction activities take place between 6:00 a.m. and 9:00 p.m. on any day except Saturday or Sunday, or between the hours of 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday. Adherence to the County's 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 with the replacement and rehabilitation of the sewer mains.

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.[8] 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. As there are no airports or airstrips in the vicinity, there is ***no impact***.

Mitigation Measures: None are required.

[8] 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. https://www.transit.dot.gov/research-innovation/transit-noise-and-vibration-impact-assessment-manual-report-0123. Accessed March 2026.

XIV. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

RESPONSES

a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

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

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
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 County's fire suppression services 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 County Sheriff's 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 CSD, as the Project does not include residential units. Because the demand for schools, parks, and other public facilities is driven by population, the proposed Project would not increase demand for those services. As such, the proposed Project would result in ***no impacts*.**

Mitigation Measures: None are required.

XVI. RECREATION

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

RESPONSES

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

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

Mitigation Measures: None are required.

XVII. TRANSPORTATION/ TRAFFIC

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

RESPONSES

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

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

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d. Result in inadequate emergency access?

Less Than Significant Impact. The proposed Project would not cause a substantial increase in traffic, reduce the existing level of service, create any additional congestion at any intersections, or be inconsistent with CEQA Guidelines Section 15064.3. Once completed, the replaced and rehabilitated sewer mains, as well as the necessary WWTP upgrades, will not generate any substantial additional daily traffic (beyond routine maintenance 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 proposed Project would not generate significant additional traffic trips per day, other than as needed for periodic maintenance. The Project would not conflict with a program plan, ordinance, or policy addressing the circulation system and as such, impacts would be ***less than significant.***

Mitigation Measures: None are required.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

RESPONSES

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

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

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

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

- Kitanemuk & Yowlumne Tejon Indians
- Table Mountain Rancheria
- Tule River Indian Tribe
- Wuksachi Indian Tribe/Eshom Valley Band

A Sacred Lands File Request was submitted to the Native American Heritage Commission (NAHC) who provided a list of applicable Native American Tribes. Outreach letters and follow-up emails were sent to the tribal organizations on the NAHC contact list (Confidential Appendix). No Tribes requested consultation or follow-up. Based on the results of the IC and NAHC records searches, the tribal outreach, the review of historical maps, and the Meyer et al. (2010) geoarchaeological sensitivity model, the APE appears to have low to moderate archaeological sensitivity.

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. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP.

As a public agency, the CSD provides both water and sewer service to residential, commercial, and industrial customers within their service area. The CSD's service area currently encompasses approximately 0.465 square miles, and the SOI encompasses approximately 0.47 square miles. The CSD owns and operates a District-wide sewer collection system and WWTP under Waste Discharge Requirements (WDR) No. 96-284.[9]

The CSD receives 100 percent of its potable water supply from the underlying San Joaquin Valley Groundwater Basin. Del Rey is located in the Kings sub-basin of the San Joaquin Valley groundwater basin in the Tulare Lake Hydrologic Region. The sub-basin encompasses approximately 1,530 square miles. The groundwater is relatively free of contaminants and is used by residential, commercial and industrial customers. The CSD operates four wells to supply the groundwater to the community; two of these wells cannot be used due to contamination. The CSD distribution system consists of a network of water lines located throughout the community.

The primary need for a sewer collection system improvement project is due to the significant deterioration of the sewer infrastructure in the current CSD area. Inspection revealed poor condition of some of the District's older sewer lines. Defects observed included deformation, root intrusion, cracked pipes, collapsed and broken pipes, sags, intruding laterals, defective lateral break-ins, attached deposits, and medium to large joint displacements. There have been no formal Notices of Violation (NOV) from regulatory agencies concerning the CSD's sewer collection system; however, numerous health and safety

[9] *Del Rey Community Services District, Sanitary Sewer Collection System and WWTP Improvements Preliminary Engineering Report*, AM Consulting Engineers, Inc. Section 2 – Municipal Water Supply. Page 6.

threats may arise from sewer system overflows because of sewer line disrepair, which would ultimately result in dangerous conditions on the District's streets and residential properties.

The proposed Project includes several miscellaneous improvements to the existing District-operated WWTP. The WWTP improvements and implementation will be performed under the regulatory requirements of the County of Fresno, the State Water Resources Control Board, and the Regional Water Quality Control Board. Compliance with such regulations will ensure that water quality and waste discharge standards are met. The wastewater characteristics will be typical of urban development and will not result in any additional water releases that could potentially impact groundwater or water quality. Because the Project provides long-needed upgrades to sewer mains currently experiencing blockages and leaks, the Project will likely have a beneficial impact on water quality because of the elimination of existing leaking or damaged sewer pipelines that currently exist. Compliance with the regulatory requirements of the County of Fresno, the State Water Resources Control Board, and the Regional Water Quality Control Board would result in a ***less than significant impact***.

Mitigation Measures: None are required.

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

No Impact. Improvements proposed by the CSD consist of the rehabilitation of approximately 1,964 linear feet (LF) of gravity sewer mains using trenchless construction methods, replacement of approximately 886 LF of gravity sewer mains via conventional construction methods, and provision of miscellaneous repairs and improvements to the District's WWTP. 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. The existing WWTP has a capacity to dispose of up to 0.30 million gallons per day (MGD). The original design consisted of an extended aeration system consisting of headworks, one aeration basin, a secondary clarifier, three aerobic digesters, 19 sludge drying beds, two effluent storage ponds and four evaporation and percolation ponds. Water Balance Design Data, as shown in Table 6-3 of Appendix A, indicates the size of the evaporation/ percolation ponds required for the treated effluent. The CSD's existing commitments to its users will remain

unaffected. Compliance with the regulatory requirements of the County of Fresno, the State Water Resources Control Board, and the Regional Water Quality Control Board would result in a ***less than significant impact***.

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 urban uses/agricultural and there are no areas within or adjacent to the Project Area that have a significant wildfire risk. The Project will include WWTP improvements, underground sewer mains 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:

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

RESPONSES

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

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

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

Less than Significant Impact. CEQA Guidelines Section 15064(i) states that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in population could lead to an increase need for housing, increase in traffic, air pollutants, etc.). The impact is ***less than significant***.

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

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

Chapter 4

MITIGATION MONITORING & REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Del Rey CSD – Sanitary Sewer Collection System and WWTP Improvements 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 CSD 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 burrowing owl. 1. A pre-construction clearance survey shall be conducted by a qualified biologist to ensure that no burrowing owl will be disturbed during the implementation of the Project. A pre-construction clearance 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 burrowing owl habitat in and immediately adjacent to the impact areas. 2. If a burrowing owl or sign of burrowing owl use (e.g., feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.	Del Rey CSD	Prior to and/or during construction	Del Rey CSD and construction contractor	
BIO – 2 Protect **nesting Swainson's hawks.** 1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August. 2. T If it is not possible to schedule construction between September and February, a	Del Rey CSD	Prior to and/or during construction	Del Rey CSD and construction contractor	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
qualified biologist shall conduct surveys for active Swainson's hawk nests no more than 14 days prior to the initiation of construction activities. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site. 3. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.				
BIO - 3: Protect nesting birds. 1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August. 2. If it is not possible to schedule construction between September and January, 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	Del Rey CSD	Prior to and/or during construction	Del Rey CSD and construction contractor	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
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.				
Cultural Resources				
CUL - 1 Protect undiscovered cultural resources. 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.	Del Rey CSD	Prior to and/or during construction	Del Rey CSD and construction contractor	

Chapter 5

PREPARERS

LIST OF PREPARERS

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Appendices

Appendix A

Preliminary Engineering Report

SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS


DRAFT PRELIMINARY ENGINEERING REPORT

JUNE 2024

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ABBREVIATIONS

ac	Acres
ac-ft	Acre-Feet
ACS	American Community Survey
BOD	Biochemical Oxygen Demand
CCTV	Closed-Circuit Television
CIMIS	California Irrigation Management Information System
CIPP	Cured-In-Place
District	Del Rey Community Services District
CWSRF	Clean Water State Revolving Fund
CY	Cubic Yard
EA	each
EC	Electric Conductivity
ET_o	Evapotranspiration
ft	Feet
gpcd	Gallons per Capital Day
in	Inch
LF	Linear Feet
LS	Lump Sum
MH	Manhole
MHI	Median Household Income
µmhos/cm	Micromhos per Centimeter
MG	Million Gallons
MGD	Million Gallons per Day
mg/L	Milligrams per Liter
NASSCO	National Association of Sewer Service Companies
NOV	Notices of Violation
O&M	Operation and Maintenance
PACP	Pipeline Assessment Conditions Program
PER	Preliminary Engineering Report
PVC	Polyvinyl Chloride
RAS	Recirculated Activated Sludge
RWQCB	Regional Water Quality Control Board

SSO	Sewer System Overflow
SOI	Sphere of Influence
SWRCB	State Water Resource Control Board
SF	Square Feet
TSS	Total Suspended Solids
VFD	Variable Frequency Drive
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant
WRCC	Western Regional Climate Center

SECTION 1 - INTRODUCTION

1.1. Purpose of Preliminary Engineering Report

The purpose of this Preliminary Engineering Report (PER or Report) is to provide a comprehensive evaluation on Del Rey Community Services District (District) existing sewer collection system and recommend the most viable and sustainable sewer service alternative that will result in the least cost to District customers. This PER will assess the condition of the sewer collection system's existing pipelines and manholes, correct existing deficiencies, and prioritize the replacement of sewer lines based on their estimated remaining useful life. This PER will also provide recommendations that will correct system deficiencies at the existing Wastewater Treatment Plant (WWTP) in order to improve treatment operations.

The preparation of this PER is being funded by the State Water Resources Control Board (SWRCB) through the Clean Water State Revolving Fund (CWSRF). The contents of this Report are intended to meet the requirements of the SWRCB and can be utilized to submit a CWSRF construction funding application for the implementation of the proposed project. This PER will include an overview of the District, description of the District's existing water sources, evaluation of the existing sewer collection system and WWTP, and necessary improvement needed to provide adequate sewer service to residents within the District's service area.

1.2. Study Area Characteristics

1.2.1. Location

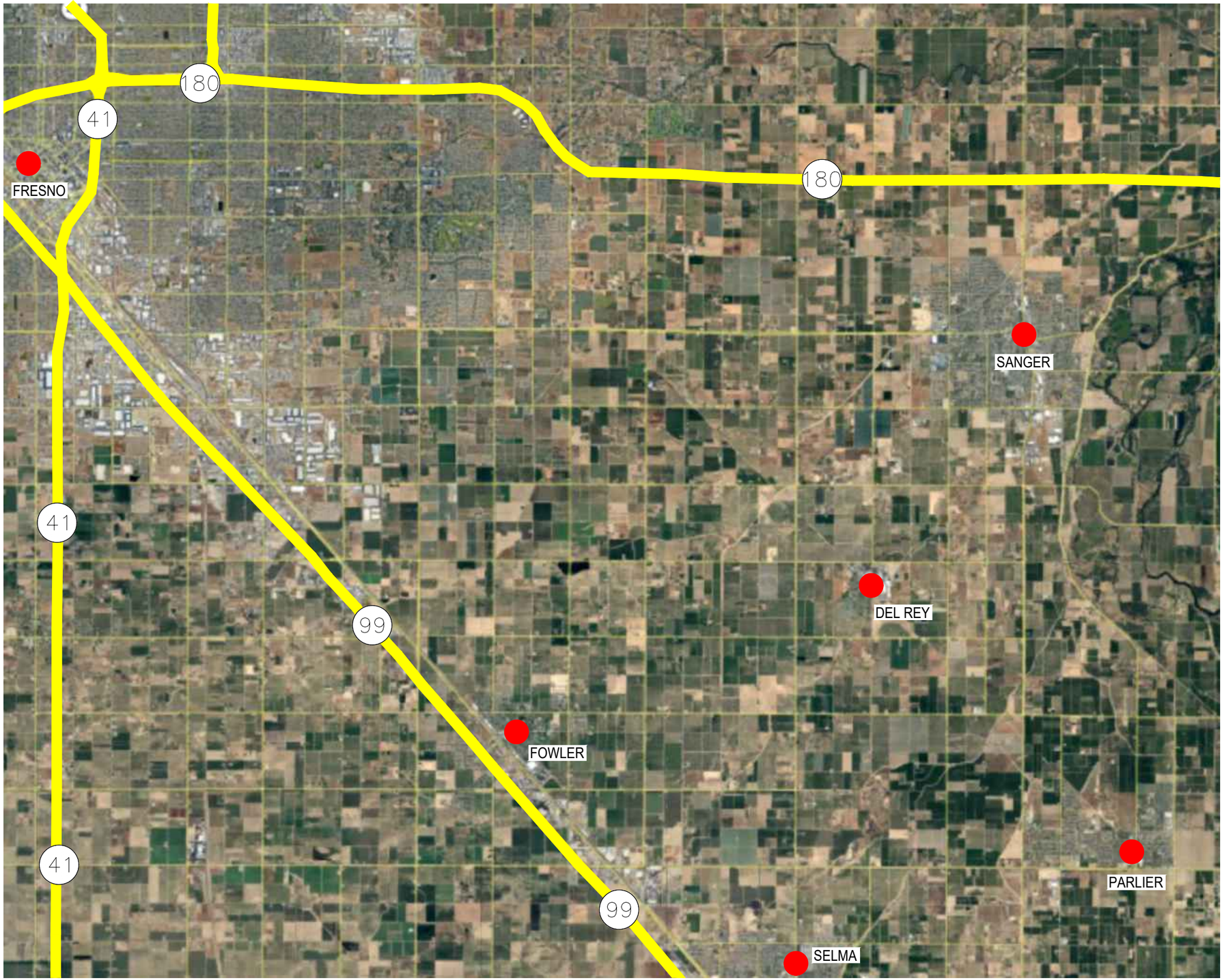
Del Rey CSD (District) is located on the east side of Fresno County, in the southern portion of the San Joaquin Valley. The District is situated approximately 19 miles east of the City of Fresno and 7 miles southeast of the City of Sanger. The cities of Reedley and Selma are approximately 14 miles southeast and 16 miles south, respectively. State Route 180 passes through the northern part of Del Rey. It provides access to Fresno to the northeast and connects with CA-99 to the west. Figure 1-1 displays the District's regional location and vicinity, including its relation to some of the surrounding communities in the area.

As a public agency, the District provides both water and sewer service to residential, commercial, and industrial customers within their service area. The District's service area encompasses approximately 0.465 square miles, and the Sphere of Influence (SOI) encompasses approximately 0.47 square miles. However, the District has the option to annex the land and develop it in the future. Figure 1-2 displays the City's service area boundary and SOI.

The District owns and operates District wide sewer collection system and a WWTP under Waste Discharge Requirements (WDR) No. 96-284. The sewer collection system currently serves residences and businesses within the District limits. The wastewater is conveyed by the sewer collection system to the District's wastewater treatment plant (WWTP), which is located east of the community, south of American Avenue, and east of the Garfield Ditch. The WWTP consists of headworks, a packaged extended aeration reactor with an integral clarifier and three aerobic digesters. Treated effluent is discharged to 6 unlined evaporation/percolation ponds. The existing WWTP has a capacity to dispose of up to 0.30 million gallons per day (MGD).

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS



LEGEND

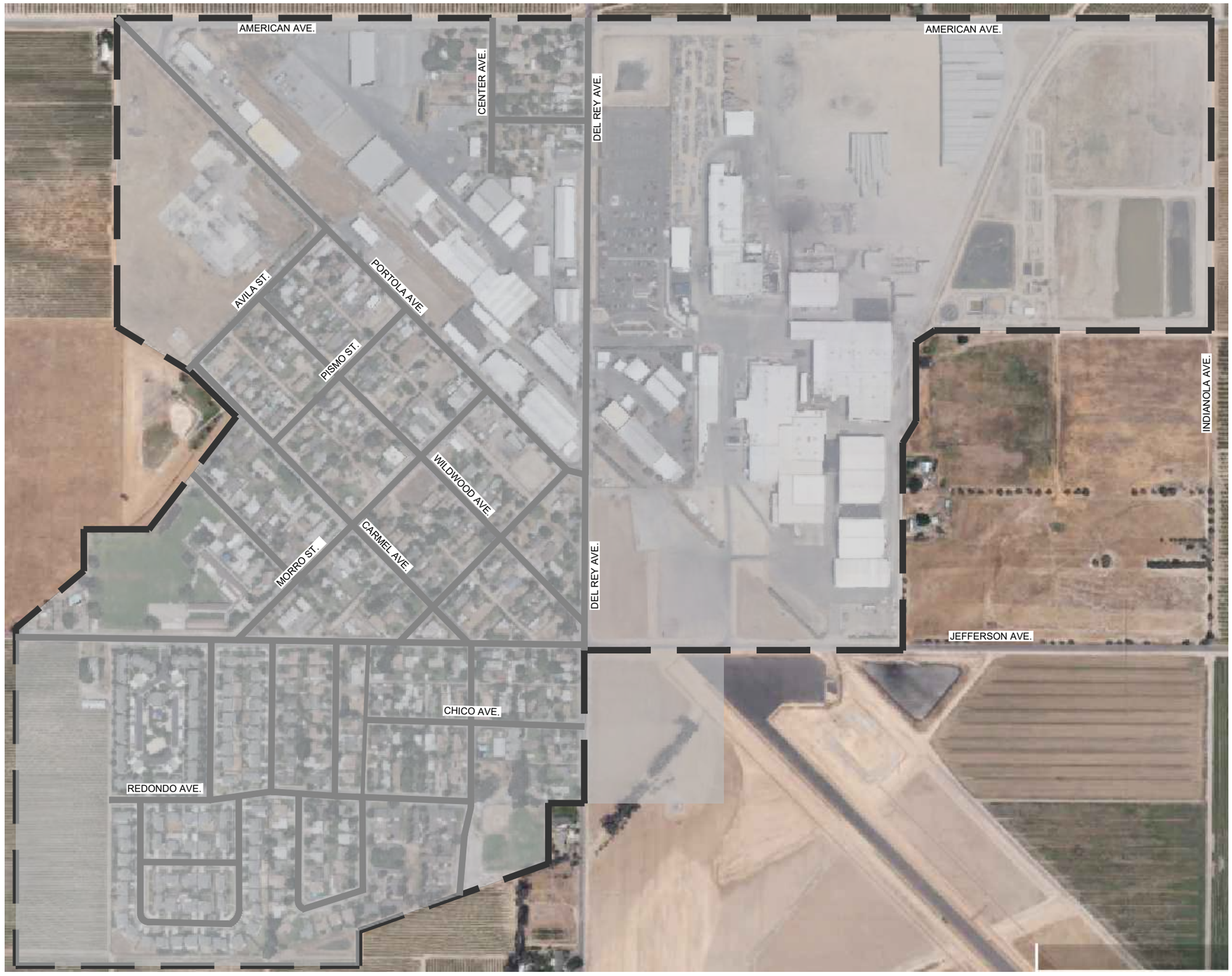
MAJOR ROAD HIGHWAY

NORTH
SCALE: 1"=7250'

FIGURE 1-1:
REGIONAL LOCATION AND VICINITY MAP

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS



LEGEND

DISTRICT SOI

DISTRICT AREA

NORTH
SCALE: 1"=450'

FIGURE 1-2:
SERVICE AREA BOUNDARY

1.2.2. Environmental Resources

The proposed sewer collection system improvements evaluated in this Report will primarily consist of the replacement and/or rehabilitation of public sewer mains in District's existing public right-of-way (ROW). Little or no construction will occur on land which is not currently developed within those ROW. It is not anticipated that impacts to floodplains, farmland, historic resources, or endangered species will be part of the proposed Project.

1.2.3. Land Use and Population

Land use within the District's service area consists of residential (single family and multi-family), commercial, industrial, and public facilities. According to the 2017-2022 U.S. Census American Community Survey (ACS), the District's median household income (MHI) is $48,897 which is approximately 54% of the MHI of the state of California. The District is considered to be a disadvantaged community (DAC). The current residential sewer rate is $65.37 per month ($784.44 per year), which is approximately 1.60% percent of the MHI.

According to the 2020 U.S. Census, the population of the District is 1,358. The population of the District per 2010 U.S. Census was 1,639, which was up from 950 at the 2000 Census and down from 1,150 at the 1990 Census. Based on these population figures, the average annual growth rate since 1990 has been approximately 0.56 percent.

Population projection for the District through 2045 is presented in Table 1-1 below. A long-term growth of 0.57 percent has been used in those projections. The District provides sewer service to 326 connections and receives an average daily flow of approximately 0.13 million gallons per day (MGD). The District is responsible for providing current as well as projected sewer service needs to customers within its service area.

Table 1-1 Del Rey CSD Projected Population

	2024	2025	2030	2035	2040	2045
Service Area Population	1,736	1,746	1,795	1,845	1,897	1,950
Notes: (1) Projected estimates are based on population growth from 1990 to 2020. An annual growth rate of 0.56 percent is used.						

1.2.4. Soils

According to the Environmental Impact Report (EIR) prepared for the District's 2040 General Plan, eleven soil types underlie the District: Atwater Loamy Sand, Delhi Loamy Sand, Exeter Loam, Exeter Sandy Loam, Grangeville Fine Sandy Loam, Hanford Fine Sandy Loam, Hanford Sandy Loam, Pollasky Fine Sandy Loam, Pollasky Sandy Loam, Ramona Sandy Loam, Tujunga Loamy Sand. According to the EIR, all eleven types have low to moderate shrinks/swell potential and are not considered expansive.

1.2.5. Climate

The Western Regional Climate Center (WRCC) has maintained climate records for the past 100 years for areas within Fresno County. However, the website does not include complete data for the District. The closest monitoring station with recent data is located at the Fresno Yosemite International Airport (Station 043257), which is located approximately 15 miles northwest of the District. Average annual temperature and precipitation data is provided in Table 1-2.

Similar to the Western Regional Climate Center, the California Irrigation Management Information System (CIMIS) tracks and maintains records of evapotranspiration (ETo) for select cities only. Table 1-2 provides ETo statistics were obtained from California Irrigation Management Information System (CIMIS).

The climate in the District is characterized as a Central Valley desert climate. Summers are typically hot and dry with average monthly highs near 100° F, while winters are mild, and wet with average monthly lows near 35° F. Nearly nine-tenths of the annual precipitation falls during the period of November through April. Rainfall during the summer is rare and very light. Table 1-2 below shows the average monthly precipitation, maximum and minimum average temperatures, and evapotranspiration within the District. A copy of the reference evapotranspiration zones is included in Appendix A.

Table 1-2 Del Rey CSD Average Perception

Month	Average Precipitation (in)	Average Temperature (°F)		Evapotranspiration, Et_o (in)
		Maximum	Minimum	
January	2.09	54.6	37.6	1.55
February	1.90	61.5	40.7	2.52
March	1.89	67.0	43.8	4.03
April	1.03	74.4	48.0	5.70
May	0.36	83.5	54.3	7.75
June	0.16	91.7	60.5	8.70
July	0.01	98.3	65.7	9.30
August	0.01	96.4	64.0	8.37
September	0.15	90.8	59.7	6.30
October	0.53	79.7	51.2	4.34
November	1.13	65.3	42.4	2.40
December	1.64	54.7	37.3	1.55
Total/Average	**10.89**	**76.5**	**50.4**	**62.50**

SECTION 2 - MUNICIPAL WATER SUPPLY

2.1. Water Supply Source

The Del Rey CSD receives 100 percent of its potable water supply from the underlying San Joaquin Valley Groundwater Basin. Del Rey is located in the Kings sub-basin of the San Joaquin Valley groundwater basin in the Tulare Lake Hydrologic Region. The sub-basin encompasses approximately 1,530 square miles. he groundwater is relatively free of contaminants and is used by residential, commercial, and industrial customers. Groundwater provides all the potable water for the community. The Community Services District operates four wells to supply water to the community. Two of these wells cannot be used due to contamination. DWR Bulletin 118 – Update 2020, "California's Groundwater" contains a detailed description of the Kings subbasin and its characteristics and conditions. A copy of this description is included in Appendix A.

The Tulare Lake region covers about 16,800 square miles and includes all of Tulare and Kings counties, and most of Fresno and Kern counties. The hydrologic region is bordered to the east by the Sierra Nevada, to the west by the Coast Ranges, and to the south by the Tehachapi Mountains. To the north, the Tulare Lake region is separated from the San Joaquin River Hydrologic Region (San Joaquin region) by a rise in the San Joaquin Valley floor caused by an accumulation of San Joaquin River and the Kings River alluvial fan deposits. Major rivers draining into the Tulare Lake region include the Kings, Kaweah, Tule, and Kern, which extend from the Sierra Nevada headwaters in eastern Fresno and Tulare counties, to their termination at the former Tulare Lake and Buena Vista Lake beds.

Groundwater recharge comes from river, stream, and canal seepage, percolation of irrigation water, and intentional recharge. For the most part, the groundwater table in the Del Rey area is dependent on snow melting and runoff in ditches of the Garfield Irrigation Ditch as well as recharge from the Kings River. Snowpack in the Sierra Nevada to the east is variable and total water supply to the area is subject to wide fluctuations in volume. Groundwater pumping is inversely proportional to the surface water supply available in the region, and in years when there is limited surface water available for irrigation, the groundwater levels experience a decline.

2.2. Water Facilities

2.2.1. Groundwater Wells

Currently, the District extracts groundwater from four (4) active wells, Well Nos. 04, 05, 06, and 07. The District's existing well capacities range from 700 to 1,400 gallons per minute (gpm), with a total combined capacity of approximately 3,900 gpm. Table 2-1 displays the design capacity of each groundwater well.

Table 2-1 Existing Well Capacity

Well No.	Design Capacity	
	GPM	MGD
04	800	1.15
05	700	1.0
06	1,000	1.44
07	1,400	2.0
Total	**3,900**	**5.61**

2.2.2. Water Distribution System

The District's water distribution system consists of a network of water lines located throughout the community. Currently, there are approximately 312 connections in the District's water system, which includes single family and multi-family residential, commercial, industrial, and landscape irrigation connections. Water lines within the system range in diameter from 6 to 10-inches. The water mains are usually placed in a grid pattern with 10-inch mains every half-mile and 8-inch mains at the quarter mile locations. Depending on the number of units served, the intervening mains are either 6 or 8-inches in diameter.

2.2.3. Groundwater Quality

The District conducts periodic sampling of the water quality from all water supply wells. Table 2-2 below contains a summary of the District's most recent water quality results from each of the water supply wells.

Table 2-2 Water Quality Results

Constituent	MCL	Raw Water			
		Well No. 04	Well No. 05	Well No. 06	Well No. 07
Primary					
Aluminum, µg/L	1,000	<50	<50	<50	<50
Antimony, µg/L	6	<2	<2	<2	<2
Arsenic, µg/L	10	2.1	<2	2.3	2.5
Barium, µg/L	1,000	<50	<50	<50	<50
Beryllium, µg/L	4	<1	<1	<1	<1
Cadmium, µg/L	5	<1	<1	<1	<1
Chromium, µg/L	50	<10	<10	<10	<10
Cyanide, µg/L	200	<100	<100	<100	<100
Fluoride, mg/L	2	<0.1	<0.1	<0.1	<0.1
Hexavalent chromium, µg/L	10	<1	NR	<1	<1
Mercury, µg/L	2	<0.2	<0.2	<0.2	<0.2
Nickel, µg/L	100	<10	<10	<10	<10
Nitrate (as nitrogen), mg/L	10	0.78	1.9	0.36	0.64
Nitrate + Nitrite (sum as Nitrogen), mg/L	10	0.78	1.9	0.66	0.64
Nitrite (as nitrogen), mg/L	10	<0.05	<0.05	<0.05	<0.05
Perchlorate, µg/L	6	<1	<2	<2	<2
Selenium, µg/L	50	<2	<2	<2	<2
Thallium, µg/L	2	<1	<1	<1	<1
Secondary					
Color, Units	15	<5	<5	5	<5
Copper, µg/L	1,000	<5	33	<5	<5
Foaming Agents (MBAS), mg/L	0.5	<0.05	<0.1	<0.05	<0.05
Iron, µg/L	300	<30	<30	110	<30
Manganese, mg/L	50	<10	80	<10	<10
Methyl-tert-butyl ether (MTBE), µg/L	13	<3	<3	<5	<0.5
Odor (Threshold at 60°C), Ton	3	<1	<1	<1	<1
Silver, µg/L	100	<10	<10	<10	<10

Table 2-2 Water Quality Results

Constituent	MCL	Raw Water			
		Well No. 04	Well No. 05	Well No. 06	Well No. 07
Thiobencarb, µg/L	70	<1	<1	<1	<1
Turbidity, NTU	5	<0.1	0.33	2.2	<0.1
Zinc, µg/L	5,000	<50	<50	<50	<50
Total Dissolved Solids	1,000	78	110	80	93
Specific Conductance, US	1,600	110	170	130	130
Chloride mg/L	500	1.5	4.9	1.5	2
Sulfate, mg/L	500	3	7.2	3.2	3.4
Notes: NR - No Record					

California Code of Regulations (CCR) Title 22, Division 4, Chapter 15, Article 4, establishes primary drinking water standards and monitoring and reporting requirements for inorganic constituents. Currently there were no Maximum Contaminant Level (MCL) exceedances reported during the latest water quality sampling period for the year 2023.

SECTION 3 - WASTEWATER FLOWS AND CHARACTERISTICS

3.1. Wastewater Flows

The District owns and operates a WWTP under the current Waste Discharge Requirements (WDRs) Order No. 96-284, which sets the plant's maximum allowable discharge at 0.30 million gallons per day (MGD). The WWTP consists of headworks, a packaged extended aeration reactor with an integral clarifier and three aerobic digesters and 19 sludge drying beds. Treated effluent from the plant is discharged into 6 disposal ponds where it can evaporate and percolate into the soil and recharge the groundwater table. Based on Records from January 1, 2019 through December 31, 2022 the District's WWTP received an average daily flow of approximately 0.13 MGD. The maximum daily flow for the same time is approximately 0.17 MGD. Table 3-1 displays the average daily flow and maximum daily flows from January 1, 2019 through December 31, 2023.

Table 3-1 Average and Maximum Daily Wastewater Flows

	2019	2020	2021	2022	2023	Average
Average Daily Flow (MGD)	0.13	0.14	0.14	0.11	0.11	0.13
Maximum Daily Flow (MGD)	0.17	0.18	0.18	0.14	0.18	0.17

Figure 3-1 displays the monthly average daily flow and maximum daily flow for each month between 2019 and 2023. The maximum daily flow peaks at an average 0.38 MGD in May, while the average daily flow is also highest in February at 0.17 MGD.

Using population data and influent wastewater for 2024 presented in Table 3-1, the average wastewater generation per capita is approximately 74.73 gallons per capita day (gpcd). The maximum per capita wastewater generation for the same period is approximately 98.45 gpcd. Table 3-2 provides projected values for the influent wastewater flows through 2045. As previously stated in Section 1 of this Report, population within the District has increased approximately by 0.56 percent per year. As shown in Table 3-2, the WWTP's current design flow of 0.30 MGD appears to provide adequate capacity through 2045.

Table 3-2 Projected Wastewater Flows

	2024	2025	2030	2035	2040	2045
Service Area Population	1,736	1,746	1,795	1,845	1,897	1,950
Estimated Average Daily Flows (MGD)	0.13	0.13	0.13	0.14	0.14	0.15
Estimated Average Maximum Flows (MGD)	0.17	0.17	0.18	0.18	0.19	0.19
Average Per Capita Consumption (gpcd)	74.90	74.46	72.42	75.88	73.80	76.92
Max Per Capita Consumption (gpcd)	97.90	97.37	100.28	97.56	100.16	97.44

The District currently serves a total of 320 sewer connections. Influent wastewater is comprised mainly of domestic wastewater from residential and commercial properties. The WWTP receives wastewater flows from industrial users. The breakdown of these connections by service type is provided in Table 3-3.

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS

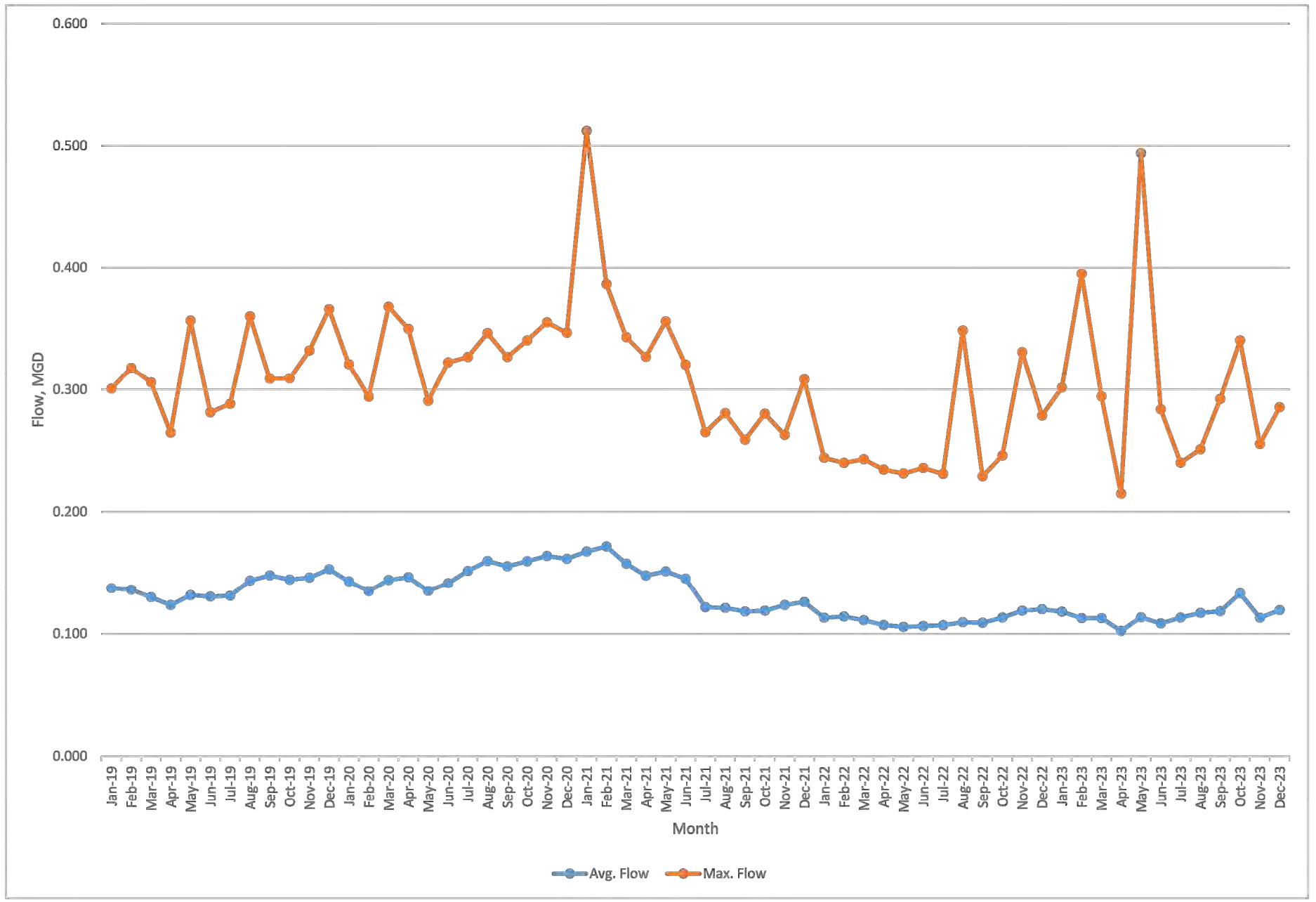


FIGURE 3-1:
MONTHLY AVERAGE
WASTEWATER FLOWS

Table 3-3 Sewer Service Connections

Category	Number of connections
Residential	303
Commercial/Institutional	11
Industrial	6
Total	**320**

3.2. Wastewater Flow Characteristics

As stated in section 3.1, the influent wastewater flow to the District's WWTP is comprised of residential and commercial wastewater. The influent to the wastewater treatment plant shows very little variation because the flows are predominantly from residential users and little from fruit and packaging operated industries. After treatment, undisinfected secondary effluent is discharged into disposal ponds where it is allowed to evaporate and percolate into the soil.

Table 3-4 summarizes the results of WWTP influent and effluent monitoring of BOD and TSS from the period of January 2019 through December 2023.

Table 3-4 Average Influent and Effluent BOD and TSS

Year	Influent		Effluent	
	BOD (mg/l)	TSS (mg/l)	BOD (mg/l)	TSS (mg/l)
2019	140	62	8	6
2020	181	67	26	6
2021	179	108	7	3
2022	167	95	3	6
2023	200	107	10	10
90th Percentile	**245**	**150**	**20**	**15**

For design purposes, the 90th percentile is typically used in place of average values for BOD and TSS. The 90th percentile of past influent data represents the value that is exceeded 10 percent of the time. Figures 3-2 and 3-3 display the frequency diagrams for BOD and TSS observed from January 2019 through December 2023.

The District's WWTP is currently regulated by the Central Valley Regional Water Quality Control Board (RWQCB). Discharge from the WWTP is required to meet all limits set forth in WDR Order No. 96-284. According to WDR Order No. 96-284, the monthly average effluent BOD and TSS shall not exceed 40 milligrams per liter (mg/l) and the daily maximum shall not exceed 80 mg/l.

3.3. Salinity

Treated wastewater contains higher concentrations of total dissolved solids (salinity) than that of the sources water. The increase in salinity is a result of domestic and commercial use of the water. The District currently monitors salinity by measuring the electrical conductivity of the WWTP effluent. The District's source water is entirely the groundwater wells. Source Water EC values are obtained from the District's

annual water quality reports. Table 3-5 shows the average EC levels in the District's wastewater effluent during the period of January 2019 through December 2023.

Table 3-5 Specific Conductivity

Month-Year	Specific Conductivity (µmhos/cm)	
	Source Water	Effluent[(1)]
Jan-19	N/A	434
Feb-19	N/A	423
Mar-19	N/A	339
Apr-19	N/A	335
May-19	N/A	297
Jun-19	N/A	341
Jul-19	N/A	356
Aug-19	N/A	382
Sep-19	N/A	396
Oct-19	N/A	125
Nov-19	N/A	334
Dec-19	N/A	N/A
Jan-20	N/A	318
Feb-20	N/A	303
Mar-20	N/A	328
Apr-20	N/A	355
May-20	N/A	N/A
Jun-20	N/A	430
Jul-20	N/A	381
Aug-20	N/A	362
Sep-20	N/A	N/A
Oct-20	N/A	353
Nov-20	N/A	331
Dec-20	N/A	296
Jan-21	N/A	297
Feb-21	N/A	483
Mar-21	N/A	364
Apr-21	N/A	384
May-21	N/A	392
Jun-21	N/A	396
Jul-21	N/A	367
Aug-21	N/A	374
Sep-21	N/A	378
Oct-21	N/A	374

Table 3-5 Specific Conductivity

Month-Year	Specific Conductivity (µmhos/cm)	
	Source Water	Effluent[(1)]
Nov-21	N/A	379
Dec-21	N/A	358
Jan-22	N/A	482
Feb-22	N/A	298
Mar-22	N/A	318
Apr-22	N/A	337
May-22	N/A	347
Jun-22	N/A	404
Jul-22	N/A	440
Aug-22	N/A	419
Sep-22	N/A	414
Oct-22	N/A	387
Nov-22	N/A	374
Dec-22	N/A	371
Jan-23	N/A	372
Feb-23	N/A	447
Mar-23	N/A	377
Apr-23	N/A	406
May-23	N/A	459
Jun-23	N/A	498
Jul-23	N/A	445
Aug-23	N/A	584
Sep-23	N/A	468
Oct-23	N/A	386
Nov-23	N/A	441
Dec-23	N/A	369

Notes:
[(1)] Source water EC values obtained from District of Del Rey CSD Water Reports from 2019 through 2023

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS

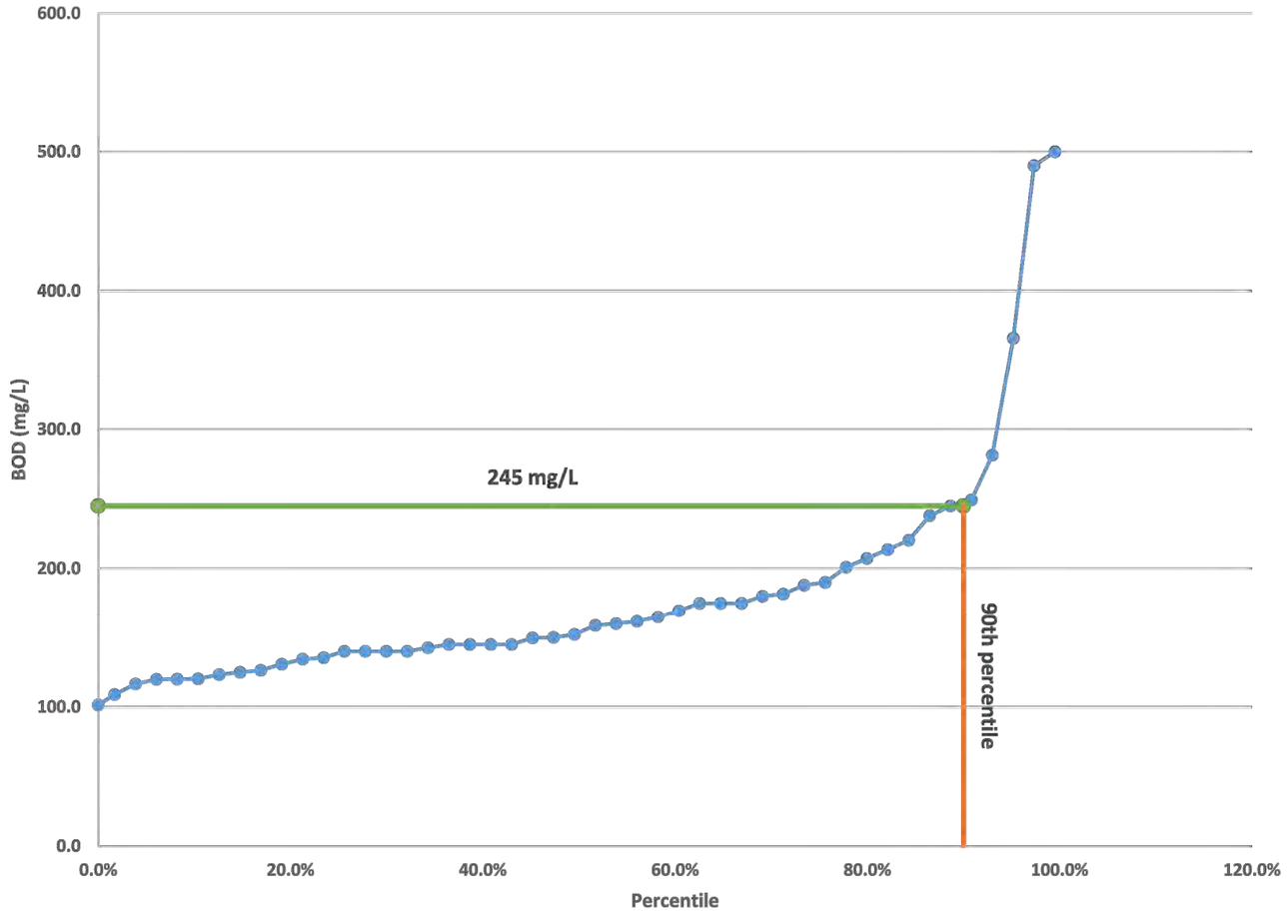
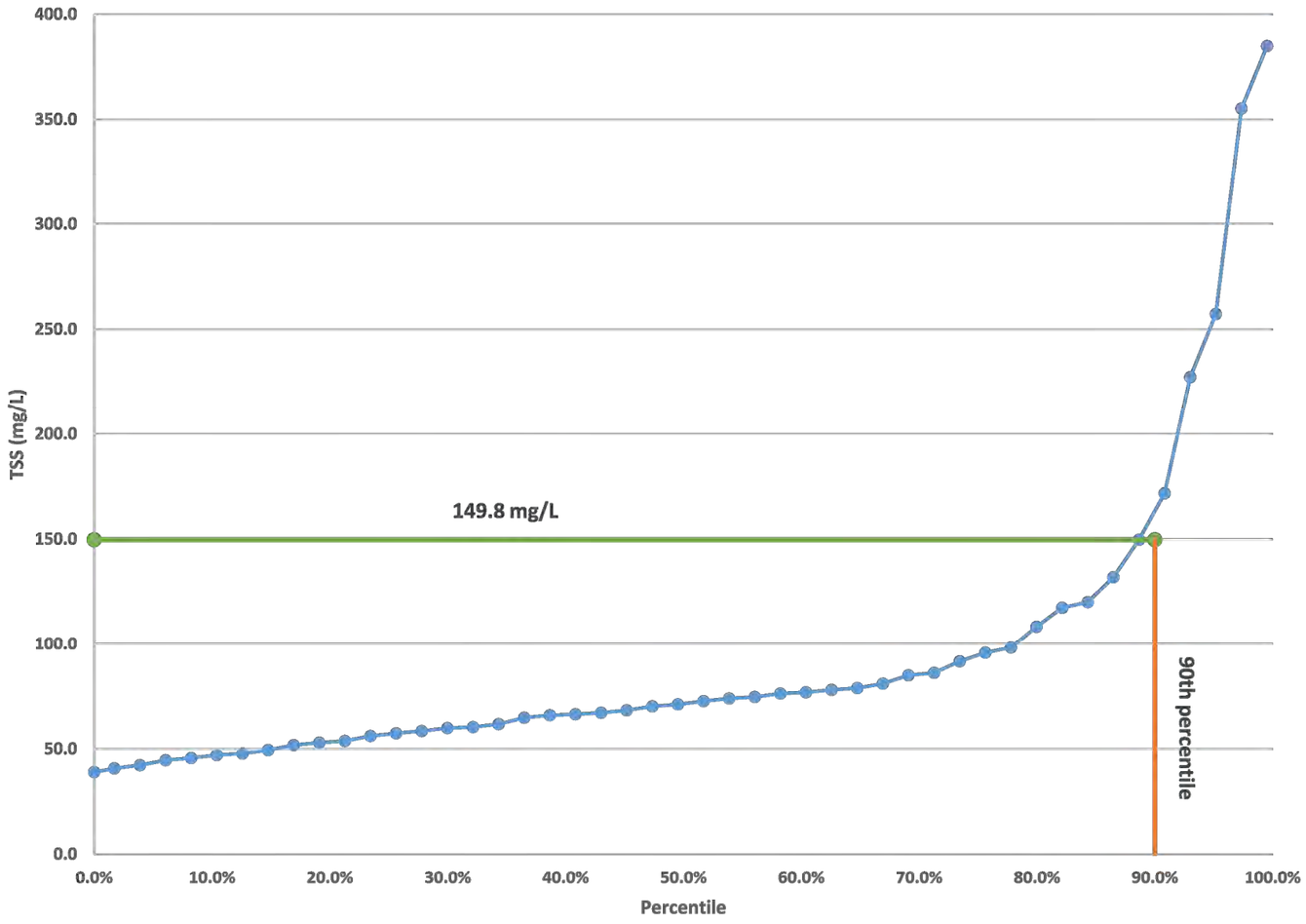


FIGURE 3-2:
90th PERCENTILE
INFLUENT BOD



DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS

FIGURE 3-3:
90th PERCENTILE
INFLUENT TSS

3.4. Effluent Quality Requirements

As previously stated, the District's WWTP is regulated by the RWQCB and treated effluent discharges from the plant are required to meet all limits set forth WDR Order No. 96-284. A copy of the WDR is provided in Appendix B. Table 3-6 displays the current limits set by the WDR Order No. 96-284.

Table 3-6 WWTP Discharge Constituents and Limits

Constituent	Units	Monthly Average	Daily Maximum
BOD	mg/l	40	80
TSS	mg/l	40	80
Settleable Solids	ml/L	0.2	0.5

The current WDR does not place a limit on total nitrogen, and it is not measured at the plant. Treated effluent is discharged onto six (6) disposal ponds for evaporation/percolation.

3.5. Discharge Violations

Currently, WWTP can meet the limits outlined in WDR Order No. 96-284 most of the time. The facility has not received any Notice of Violation in recent times.

SECTION 4 - EXISTING FACILITIES AND PROJECT NEED

4.1. Overview

The District owns and operates a wastewater collection, treatment, and disposal system that provides sewer service to residents and the industries within the service boundary. The following section provides a detailed description of the District's existing WWTP and sewer collection system and describes the need for the proposed Project.

4.2. Existing Wastewater Treatment Plant

The District owns and operates the existing WWTP under the current Waste Discharge Requirements (WDRs) Order No. 96-284. The WWTP is located on East American Avenue and Indianola Avenue, more specifically in Section 04, Township 15 South, Range 22 East, Mount Diablo Base and Meridian. The WWTP was originally designed with a hydraulic capacity of approximately 0.30 million gallons per day (MGD) and consisted of will be an extended aeration system consisting of headworks, one aeration basin, a secondary clarifier, three aerobic digesters, nineteen (19) sludge drying beds, and two (2) effluent storage ponds and four (4) evaporation and percolation ponds.

The treated effluent from the plant is discharged to disposal ponds where it is allowed to evaporate and percolate into the soil and recharge the groundwater table. The plant's wastewater treatment equipment consists of old pumps that need upgrades and mechanical equipment that needs end-of-life replacements. Figures 4-1 and 4-2 provide a layout of the existing WWTP and the location of the treatment ponds.

The beneficial uses of the groundwater in the basin underlying the WWTP are municipal and domestic supply, agricultural supply, industrial and service supply, and contact and non-contact recreation. There are no industrial or other problem constituents currently identified by the District.

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS

NORTH
SCALE: 1"=125'

FIGURE 4-1: EXISTING WWTP LAYOUT

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS

NORTH
SCALE: 1"=80'

FIGURE 4-2: EXISTING EFFLUENT STORAGE PONDS AND PERCOLATION PONDS

4.3. Sewer Collection System

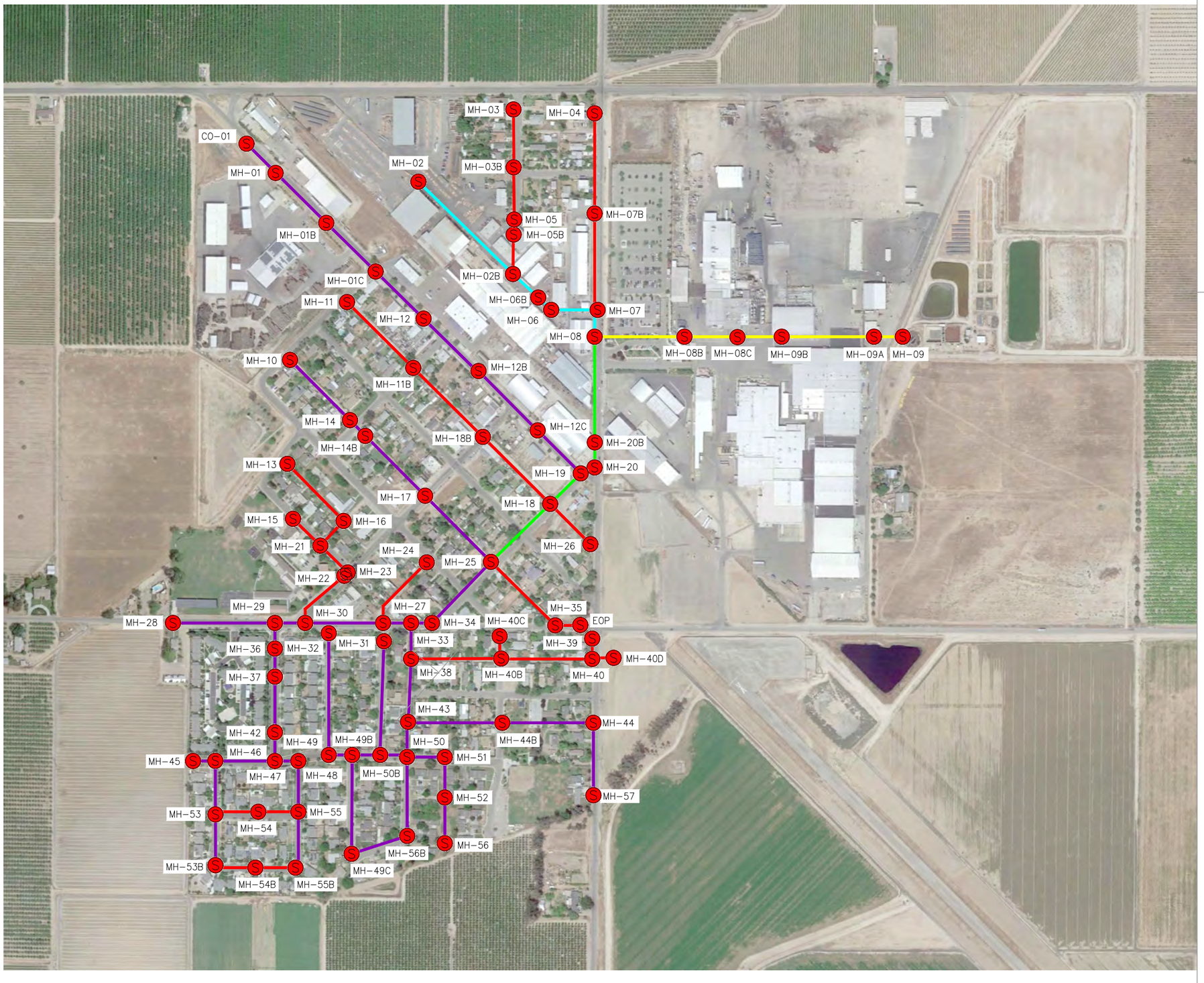
The District's existing sewer collection system consists of a network of 6 and 8-inch diameter "collection" lines that connect to larger "mains" that range from 10 to 15-inches in diameter. Wastewater from most of Del Rey flows into a 12-inch line that runs along S Del Rey to POM Wonderful and then to a 15-inch trunk line that runs along POM Wonderful to the WWTP. The majority of the sewer pipes of the 4.58-mile-long collection system are made of Vitrified Clay, Polyvinyl Chloride, or Asbestos Cement. It is unknown when the pipes were installed but the sewer system is believed to be 50 years old.

The District's sewer collection system operates with two lift stations one is located at the intersection of Jefferson Ave and Autumn. This facility currently receives flows from the areas to the south and east of the lift station and discharges into the S Del Rey line. The other lift station is located at the WWTP.

Table 4-1 provides a summary of the existing sewer pipelines within the District's collection system and a map of the system is shown in Figure 4-3. Some of the pipelines have been identified as old and failing; therefore, these pipelines have been selected for the CCTV inspection.

Table 4-1 Summary of Sewer Pipelines

Pipe size	Length (ft)
6-Inch	5,234
8-inch	13,057
10-inch	1,110
12-inch	2,149
15-inch	1,837
Total Length	**23,387**



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LEGEND

6 - INCH	-	± 5,234 LF
8 - INCH	-	± 13,058 LF
10 - INCH	-	± 1,110 LF
12 - INCH	-	± 2,150 LF
15 - INCH	-	± 1,837 LF
MANHOLE		

NORTH

SCALE IN FEET

0 500 FT

FIGURE: 4-3
EXISTING SEWER COLLECTION SYSTEM

4.3.2. Condition of Sewer Collection System

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

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

4.3.2.1. CCTV Inspection

Video Inspection Specialists, Inc. (VIS) was retained by the District to perform hydro-flushing and a CCTV inspection assessment on approximately 23,387 LF of gravity sanitary sewer mains. The condition of the sewer mains was rated using the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Conditions Program (PACP) standardized rating. NASSCO PACP provides a standardized system for the consistent assessment of sanitary sewer conditions. PACP provides the capability to benchmark sewer conditions in order to track deterioration over time.

The PACP process identifies major deterioration factors and assigns a rating that is related to the likelihood of failure or collapse. Deterioration factors include surrounding soil condition, position of groundwater table, frequency of sewer surcharging, above ground traffic loading, methods and materials used in construction, third party damages and defects such as roots, grease, and debris causing more frequent cleaning. It is important to note that the condition of the sewer involves many deterioration factors, both internal and external. A CCTV inspection can only determine the internal defects that affect the sewer condition. PACP defects are assigned a grade of 1 to 5 in order of increasing severity. Table 4-2 shows the criteria of NASSCP PACP ratings.

Table 4-2 NASSCO PACP Ratings

Rating	Importance	Likelihood of Failure
5 – Immediate Attention	Defects require immediate action	Pipe has failed or will likely fail within the next 5 years
4 – Poor	Severe defects	Pipe will probably fail in 5 to 10 years
3 – Fair	Moderate defect that will continue to deteriorate	Pipe may fail in 10 to 20 years
2 – Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years
1 - Excellent	Minor or no defects	Failure unlikely in the foreseeable future

Table 4-3 provides a summary of the ratings observed in the 23,387 LF of CCTV video evaluated. Figure 4-4 displays the map of the sewer collection system with the overall ratings of the pipes that were included in the CCTV inspection. Ratings are based on the structural integrity of the pipes and the operation and maintenance issues such as changes in pipe alignment.

Table 4-3 Summary of PACP Ratings

Rating	Diameter (in)	Total Length Surveyed (ft)
1	6, 8, 10, 12 & 15	10,940
2	6, 8, 12 & 15	1,165
3	6, 8, 10, 12 & 15	5,440
4	6 & 8	3,343
5	6 & 8	2,500
Total Length Surveyed		**23,387**

The CCTV inspection revealed poor conditions of some of the District's older lines. Defects found in the sewer lines include deformation, root intrusion, cracked pipe, collapsed and broken pipe, sags, intruding laterals, defective lateral break-ins, attached deposits (grease and concrete), and medium to large joint displacements.

4.4. Project Need

The primary need for a sewer collection system improvement project is due to the significant deterioration of the sewer infrastructure. The District's maintenance staff regularly respond to problems with the collection system as back-ups and overflows/spills and spends a great deal of their time locating and/or repairing the system in response to emergency calls from the District's residents. According to the results of the CCTV inspection, approximately 13 percent of the sewer lines inspected require either replacement or rehabilitation.

4.4.1. Health and Safety

The major concerns related to health and safety are associated with the age and operating condition of the District's collection system. As stated above, the current state of the system is the cause of blockages and sewer system overflows (SSOs).

There have been no formal Notices of Violation (NOV) from regulatory agencies concerning the District's sewer collection system. The recent CCTV inspection provided the best evidence of the poor condition of some segments of the sewer collection system which are responsible for most of the SSOs in the City.

There are numerous public health and safety threats arising from SSOs onto the District's streets and residential properties. There are also significant health and safety risks for staff that are responsible for the cleanup and repair of the sewer lines.

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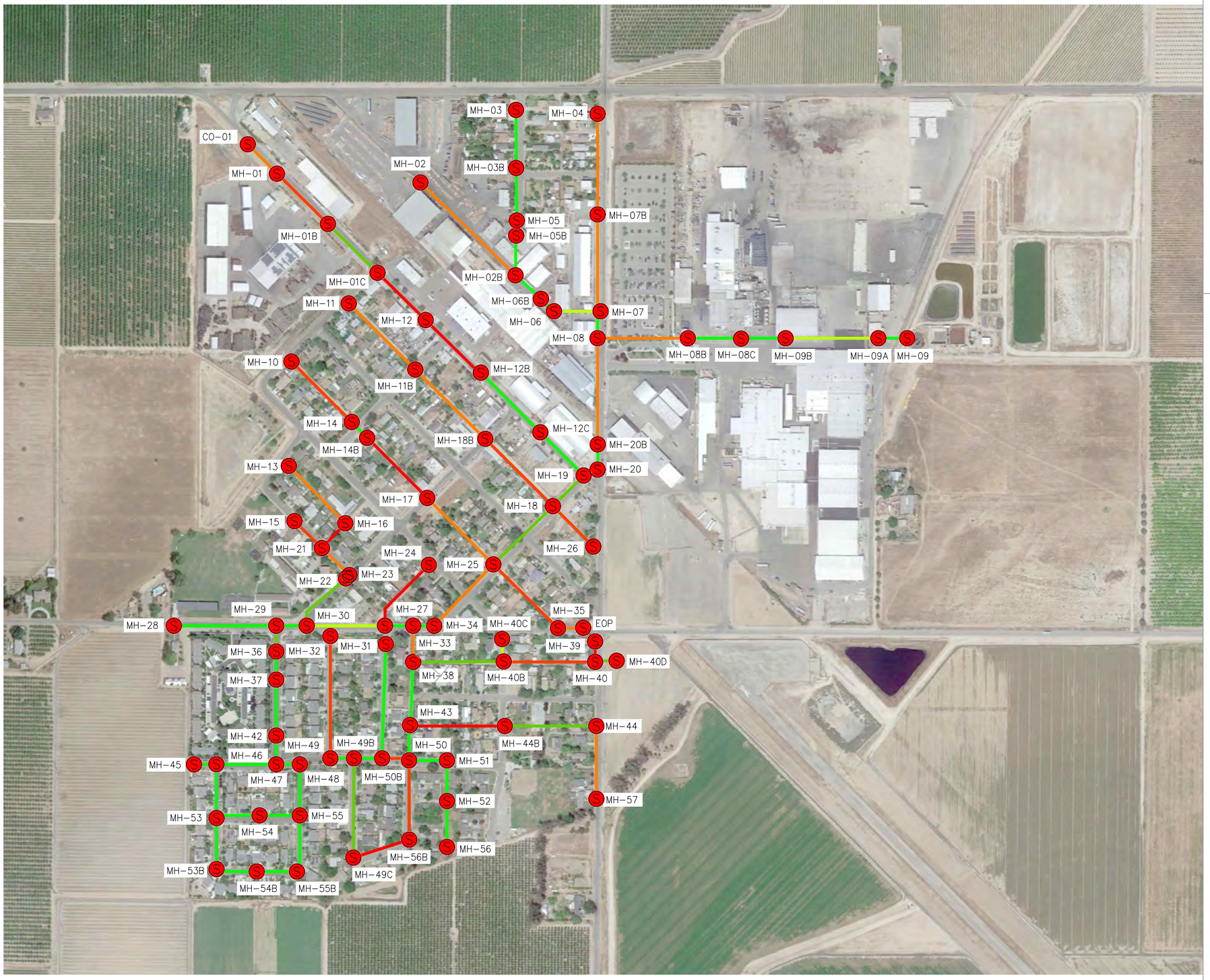

LEGEND

- NASSCO RATING - 0
- NASSCO RATING - 1
- NASSCO RATING - 2
- NASSCO RATING - 3
- NASSCO RATING - 4
- NASSCO RATING - 5

NORTH

SCALE IN FEET

0 500 FT

FIGURE: 4-4
SEWER COLLECTION SYSTEM CONDITION ASSESSMENT

4.4.2. System O&M

The District's limited resources make it difficult to address the deficiencies in the sewer collection system. This planning study has provided a comprehensive evaluation of the sewer collection system. The District would like to correct the identified deficiencies in the sewer collection system and is applying to the Clean Water State Revolving Fund to fund the recommended improvements.

4.4.2.1. Current O&M Expenses

Currently, operation and maintenance (O&M) costs for the sewer collection system include the labor, equipment, supplies, consulting fees, maintenance, and operational transfers. Table 4-4 displays the District's actual O&M cost for Fiscal Year (FY) 2022-23 under each of these categories.

Table 4-4 Current Sewer Budget

Description	Costs
Salaries and Wages	$216,624
Health Insurance	$54,691
Employment Taxes	$19,402
Workers Compensation	$3,453
Telephone Expense	$7,209
General Admin Expense	$2,708
Office Supplies	$522
Postage	$1,634
Alarm Service	$0
Legal Services	$27,803
Accounting Services	$10,800
Annual Audit Fees	$30,175
Computer and Software	$0
Fuel	$10,800
Utilities	$237,921
Membership	$3,871
Engineer Fees	$30,872
Water Testing Expense	$117,804
General Maintenance & Repairs	$33,382
Supplies and Consumables	$33,382
Maintenance Vehicles	$6,014
Uniform Expense	$1,740
Equipment Rental	$846
Solid Waste	$91,377
Liability Insurance Expense	$32,425
License and Permits	$45,626
Payroll Expense	$2,539
Total Sewer Budget	**$1,023,620**

4.4.3. Growth

As described in Section 1.2.3, the District's population according to the 1990 U.S. Census was 1,150. According to the U.S. Census American Community Survey, population within the City has increased to approximately 1,358 in 2020. Therefore, the observed average annual growth rate from 1990 through 2020 is approximately 0.56 percent.

SECTION 5 - IMPROVEMENTS TO SEWER COLLECTION SYSTEM

5.1. Alternatives Considered

Three alternatives were considered for the improvement of the District's sewer collection system, including a no project alternative. Additionally, two construction alternatives are considered herein for the repair or replacement of damaged sewer mains. The first construction alternative consists of using only conventional construction methods, such as digging the damaged sewer main and replacing it with a new pipe. The second alternative consists of using both convention and trenchless construction methods. The trenchless construction method will consist of pipe bursting or cured-in-place (CIPP) where feasible. In summary, the three alternatives are as follows:

- Alternative No. I: No Project
- Alternative No. II: Conventional Construction Method
- Alternative No. III: Conventional and Trenchless Construction Methods

The following sections contain a description of each alternative, including design parameters, purposed layouts, and an opinion of probable construction costs and operation and maintenance (O&M) costs. The anticipated useful life of rehabilitated sewer pipe and replaced sewer pipe is the same and in excess of 50 years. Therefore, the planning period for this improvements project is considered to be 50 years.

5.2. Alternative No. I: No Project

Under the "No Project" Alternative, the District's sewer collection systems would continue to operate under current conditions. This Alternative was dismissed due to not addressing concerns with the current condition of the sewer collection. As described in Section 4.4, the CCTV inspection of the sewer collection system revealed the severe condition of several pipe segments within the collection system. These pipe segments will require replacement in the future as they will continue to deteriorate.

5.3. Alternative No. II: Conventional Construction Method

Alternative No. II involves replacing deteriorated sewer pipes with new pipes located along the same alignment as the existing. Under this Alternative, bypass pumping equipment and piping will be utilized on a temporary basis to convey wastewater around the construction zone while the existing pipe is excavated and removed. The new sanitary sewer will be installed in the existing pipe trench. Acquisition of new easements are not anticipated.

Conventional construction requires detailed geotechnical investigations and topographical surveys to locate existing utilities that may be impacted by the excavation of the sewer line. Conventional construction uses heavy equipment to dig the trenches and requires surface restoration of the excavated trench.

Conventional construction is the recommended construction method under the following circumstances:

- where a portion of the existing pipe is collapsed;
- where there are multiple offset joints greater than 1-inch or if sealing rings protrude more than 1 inch;
- where the pipe is structurally deformed, and the profile of the pipe is lost;
- where heavy roots through pipe joints cannot be removed by interior cutting;

- where heavy roots have compromised the structural integrity of the pipe;
- where sags are greater than 60 percent of the pipe diameter.

5.3.1. Sewer Main Replacement

The segments of the District's sewer collection system recommended for replacement have been selected based on sorted NASSCO ratings. It is recommended that sewer mains with a NASSCO overall condition rating of 3 and above be replaced, unless the NASSCO rating is the result of designate alignment changes to the sewer main. Additionally, sewer mains where sags are present are also recommended to be replaced. For pipelines that have defects in specific sections of the pipe but are otherwise in good condition, only that partial section of pipe is recommended for replacement. Table 5-1 shows a summary of the sewer lines that are recommended to be replaced under this Alternative.

Table 5-1 Alternative No. II Sewer Mains Recommended to be Replaced

From MH	To MH	Reason(s)	Method	Length (ft)
040C	040B	Obstruction - Rocks, Roots Fine Joint	Replacement	10
044	044B	Roots Fine Joint	Replacement	10
031	050B	Obstruction - Debris	Replacement	569
049C	049B	Survey Abandoned - Obstruction in Pipe	Replacement	10
025	018	Roots Fine Joint	Replacement	5
040B	038	Roots Fine Joint	Replacement	10
018	019	Roots Fine Joint	Replacement	20
01B	01C	Roots Fine Joint	Replacement	30
023	030	Roots Fine Joint	Replacement	170
057	044	Survey Abandoned - Obstruction, Roots Fine Joint	Replacement	20
EOP	035	Survey Abandoned - Obstruction, Roots Fine Joint	Replacement	6
017	025	Survey Abandoned - Obstruction, Roots Ball Lateral	Replacement	20
021	022	Survey Abandoned - Roots Ball Joint, Roots Medium Joint	Replacement	10
040D	040	Survey Abandoned - Deposits Settled	Replacement	24
015	021	Roots Ball Lateral	Replacement	30
08	08B	Obstruction in Pipe	Replacement	120
09B	09	Obstruction in Pipe - Gasket	Replacement	444
016	021	Survey Abandoned - Tap Break-in Intruding, Crack Longitudinal, Roots Ball Lateral	Replacement	25
06	07	Crack Longitudinal	Replacement	10
022	023	4 - 30% WL Sags	Replacement	78
030	027	8 - <30% WL Sags	Replacement	327
034	025	Roots Fine Joint, Crack Multiple, Tap Break-in Intruding	Replacement	45
013	016	Joint Off Set Medium	Replacement	10
011	011B	Survey Abandoned - Tap Break-in Intruding, Cracks Longitudinal, Material Pipe Change VCP to PVC and PVC to VCP	Replacement	40
011B	018B	Survey Abandoned - Tap Break-in Intruding, Pipe Fracture, Crack Longitudinal	Replacement	15

Table 5-1 Alternative No. II Sewer Mains Recommended to be Replaced

From MH	To MH	Reason(s)	Method	Length (ft)
020B	08	Joint Off Set Medium, Tap Break-in Intruding, Material Pipe Change RCP to VCP	Replacement	20
04	07B	Cracks Longitudinal, Cracks Multiple, Joint off Set Medium	Replacement	40
02	02B	Joint off Set Medium, Tap Break-in Intruding	Replacement	25
07B	07	Hole in Pipe, Multiple Fractures, Fractures Longitudinal, Crack Multiple, Crack Longitudinal	Replacement	185
038	033	Joint off Set Medium	Replacement	10
EOM	01	Fracture Longitudinal	Replacement	97
032	049	Broken Pipe, Joint off Set Medium	Replacement	15
010	014	Broken Pipe	Replacement	5
040	040B	Broken Pipe	Replacement	10
026	018	Pipe Fracture, Broken Pipe	Replacement	30
035	025	Broken Pipe, Roots Fine Lateral	Replacement	15
018B	018	Survey Abandoned - Joint off Set Medium, Broken Pipe, Material Pipe Change VCP to PVC	Replacement	15
001	01B	Broken Pipe Soil Visible, Fractures Longitudinal, Roots Fine Joint	Replacement	40
050B	50	Broken Pipe, Material Pipe Change RCP to VCP and VCP to RCP	Replacement	50
056B	50	Fracture Longitudinal, Broken Pipe	Replacement	20
014B	017	Broken Pipe Soil Visible	Replacement	10
024	027	Broken Pipe Soil Visible, Roots Ball Lateral	Replacement	20
01C	012	Broken Pipe Soil Visible, Roots Fine Joint	Replacement	45
012	012B	Survey Abandoned - Root Ball, Roots Fine Joint	Replacement	20
044B	043	Broken Pipe Soil Visible, Roots Fine Joint, Roots Fine Lateral, Roots Ball Lateral	Replacement	70
049C	056B	Survey Abandoned - Obstruction - Cross Utility Bore	Replacement	30
EOM	028	Survey Abandoned - Obstruction, Broken Pipe	Replacement	30
			Total Length to Be Replaced	**2,860**

Under this Alternative, approximately 2,860 LF of sewer mains will be replaced with new sewer pipes before failure occurs. Figure 5-1 displays the pipe segments that are recommended for replacement.

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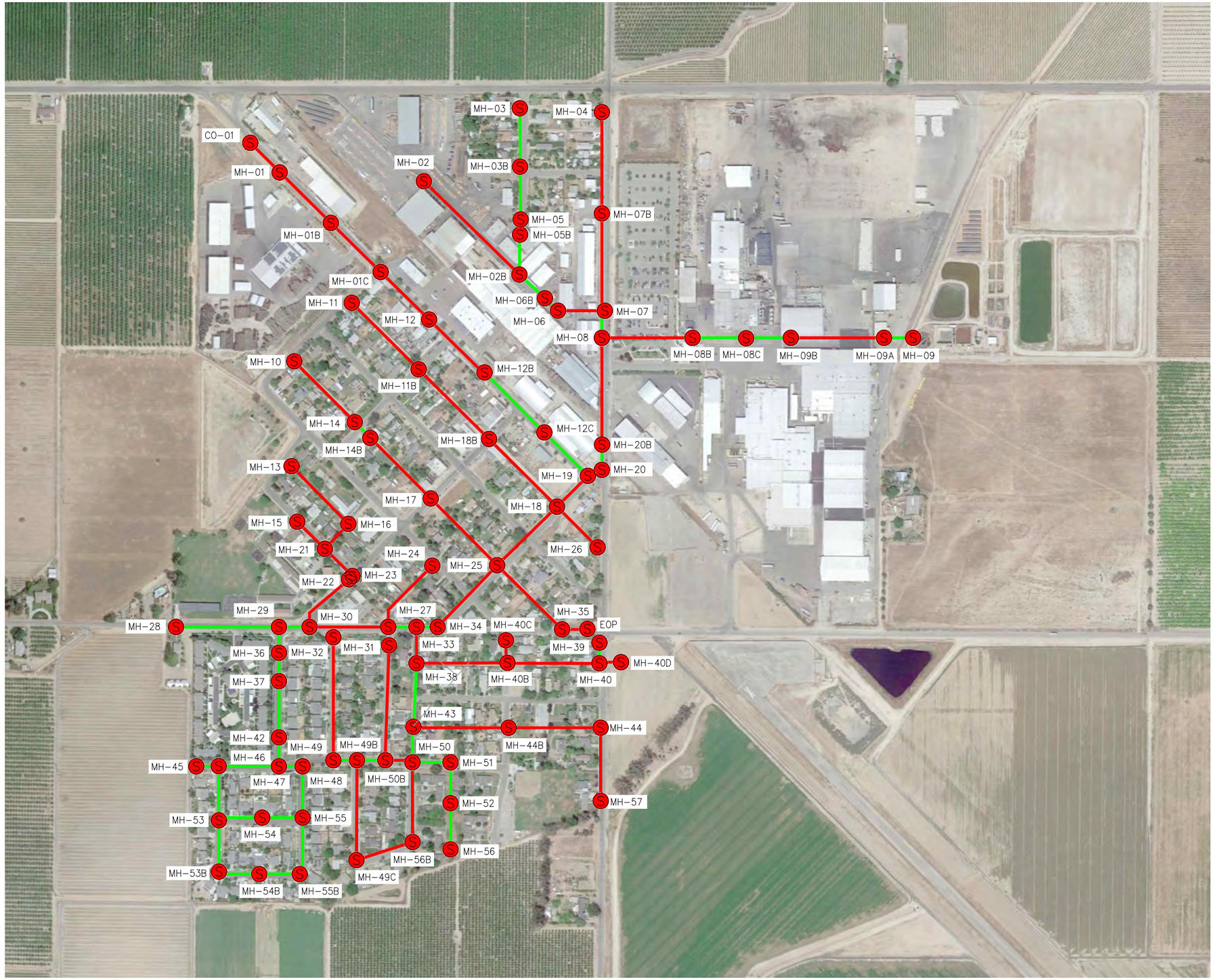
SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS



LEGEND

NO REPLACEMENT

REPLACEMENT

NORTH

SCALE IN FEET

0 500 FT

FIGURE: 5-1
ALTERNATIVE II - SEWER MAINS TO BE REPLACED

5.3.2. Probable Construction Costs

Table 5-2 provides an opinion of probable construction costs for the replacement of the deteriorated and/or sagging sewer mains. Replacement of sewer lines using the conventional method is assumed to cost around $2.5 million.

Table 5-2 Alternative No. II Probable Construction Costs

Description	Quantity	Units	Unit Cost ($/Unit)	Total
Mobilization	1	LS	$240,000	$240,000
Traffic Control Plan	1	LS	$90,000	$90,000
New 6" PVC Pipe	548	LF	$250	$138,000
New 8" PVC Pipe	1,483	LF	$275	$408,000
New 10" PVC Pipe	25	LF	$300	$8,000
New 12" PVC Pipe	240	LF	$325	$78,000
New 18" PVC Pipe	564	LF	$350	$198,000
Remove and Replace Sewer Lateral	90	EA	$4,000	$360,000
Bypass Pumping	1	Day	$300,000	$300,000
Subtotal Construction Costs				**$1,820,000**
Contingency (15%)				$273,000
Engineering, Environmental, Construction Administration (25%)				$455,000
Total Capital Construction Costs				**$2,548,000**
NOTE: All capital construction costs are rounded up to the nearest thousand.				

5.3.3. Annual O&M Costs

The annual operation and maintenance (O&M) costs for Alternative No. II will consist of conventional maintenance costs to operate the sewer collection system. Since this alternative only includes the replacement of existing sewer mains and laterals, no additional O&M costs are anticipated after construction concludes. The District's existing O&M costs for the sewer collection system are provided in Table 4-4 of this PER.

5.4. Alternative No. III Conventional and Trenchless Construction Methods

Under this Alternative, both convention and trenchless construction methods will be used to either replace or rehabilitate deteriorated sewer mains. Where applicable, Alternative No. III will utilize trenchless sewer rehabilitation techniques in lieu of conventional replacement methods. Trenchless sewer rehabilitation techniques offer a method of correcting pipe deficiencies that requires less restoration and causes less disturbance and environmental degradation than the conventional construction method. The most common trenchless sewer rehabilitation methods are Pipe Bursting and Cured-In-Place Pipe (CIPP).

5.4.1. Pipe Bursting

Pipe bursting is a method by which the existing pipe is forced outward and opened by a bursting tool. In pipe bursting the existing pipe is used as a guide for inserting the expansion head (part of the bursting tool). The expansion head, typically pulled by a cable rod and winch, increases the area available for the

new pipe by pushing the existing pipe radially outward until it cracks. The bursting device pulls the new pipeline behind itself.

During the pipe bursting process, the rehabilitated pipe segment must be taken out of service by rerouting flows around it. After the pipe bursting is completed, laterals are re-connected, typically by conventional excavation methods.

Pipe Bursting is the recommended rehabilitation method under the following circumstances:

- when capacity of the existing line needs to be increased;
- when the number of lateral connections is limited;
- when the number of crossing utilities is limited and the clearance between utilities is greater than 3 ft;
- when the depth of the sewer lines is less than 12 ft;
- when sags in the line do not exceed 20 percent of the pipe diameter;
- when pipes are not encased in concrete.

5.4.2. CIPP

Cured-in-place pipe (CIPP) is a rehabilitation method that uses a flexible fabric liner coated with a thermosetting resin to form a new pipe inside the existing pipe. The liner is inserted into the existing pipeline and cured to form a new liner. The liner is typically inserted into the existing pipe through an existing manhole. The fabric tube holds the resin in place until the tube is inserted in the pipe and ready to be cured. Commonly manufactured resins include unsaturated polyester, vinyl ester, and epoxy, each having distinct chemical resistance to domestic wastewater.

The CIPP method can be applied to rehabilitate pipelines with defects such as cracks, small offset joints, and structurally deficient segments. The thermosetting resin material bonds with the existing pipe materials to form a tighter seal than most other trenchless techniques. The liner is typically applied using gravity and either water or air pressure to force the tube through the pipe and invert it or turn the tube inside out. This process presses the resin- coated tube against the walls of the existing pipe. Heat is used to cure the resin to form a strong bond between the tube and the existing pipe.

As the liner expands to fit the new pipe, dimples occur in the line where the laterals exist. Dimples in the line can be found by TV inspection or robotic equipment. Laterals are typically reinstated with robotic cutting devices, or, for large-diameter pipes, by manually cutting the liner.

CIPP is the recommended rehabilitation method under the following circumstances:

- where offset pipe joints are generally 1 inch or less;
- where longitudinal or circumferential cracking in the pipe has caused minimal structural deformation;
- where light to medium roots exist through the pipe joints and can be removed by interior cutting;
- where sags in the pipe are less than 60 percent of the pipe diameter;
- where debris can be removed from the pipe;
- where holes in the pipe don’t have visible voids (i.e., no soil visible outside the hole); larger holes allow CIPP liners to deform and weaken near the edges of the hole.

5.4.3. Sewer Main Replacement and Rehabilitation

Alternative No. III consists of an "in-kind" rehabilitation and replacement of the District's gravity sewer mains. Where feasible, segments of the sewer collection system will be rehabilitated using trenchless construction methods. In order to ensure the structural integrity of the sewer system, conventional "open-trench" construction methods will be used to replace the sewer mains that display pipe deformations, broken pipes, or sags greater than 60 percent of the pipe diameter. Table 5-3 displays the sewer mains that are recommended to be rehabilitated or replaced under this alternative. The proposed improvements are shown in Figure 5-2.

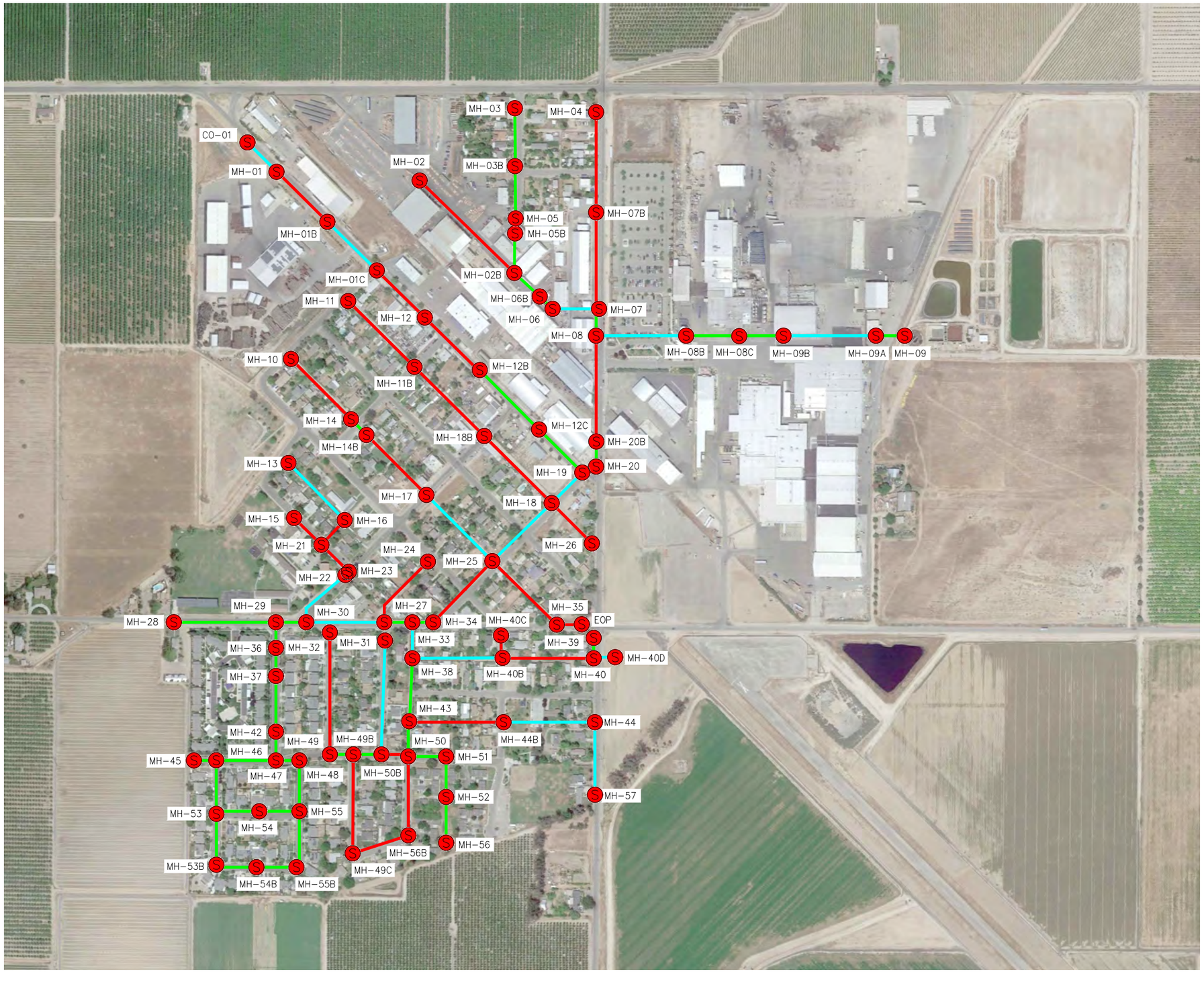
Table 5-3 Alternative No. III Sewer Mains Recommended to be Rehabilitated/Replaced

From MH	To MH	Reason(s)	Method	Length (ft)
040C	040B	Obstruction - Rocks, Roots Fine Joint	Conventional	10
049C	049B	Survey Abandoned - Obstruction in Pipe	Conventional	10
EOP	035	Survey Abandoned - Obstruction, Roots Fine Joint	Conventional	6
021	022	Survey Abandoned - Roots Ball Joint, Roots Medium Joint	Conventional	10
015	021	Roots Ball Lateral	Conventional	30
016	021	Survey Abandoned - Tap Break-in Intruding, Crack Longitudinal, Roots Ball Lateral	Conventional	25
034	025	Roots Fine Joint, Crack Multiple, Tap Break-in Intruding	Conventional	45
011	011B	Survey Abandoned - Tap Break-in Intruding, Cracks Longitudinal, Material Pipe Change VCP to PVC and PVC to VCP	Conventional	40
011B	018B	Survey Abandoned - Tap Break-in Intruding, Pipe Fracture, Crack Longitudinal	Conventional	15
020B	08	Joint Off Set Medium, Tap Break-in Intruding, Material Pipe Change RCP to VCP	Conventional	20
04	07B	Cracks Longitudinal, Cracks Multiple, Joint off Set Medium	Conventional	40
02	02B	Joint off Set Medium, Tap Break-in Intruding	Conventional	25
07B	07	Hole in Pipe, Multiple Fractures, Fractures Longitudinal, Crack Multiple, Crack Longitudinal	Conventional	185
032	049	Broken Pipe, Joint off Set Medium	Conventional	15
010	014	Broken Pipe	Conventional	5
040	040B	Broken Pipe	Conventional	10
026	018	Pipe Fracture, Broken Pipe	Conventional	30
035	025	Broken Pipe, Roots Fine Lateral	Conventional	15
018B	018	Survey Abandoned - Joint off Set Medium, Broken Pipe, Material Pipe Change VCP to PVC	Conventional	15
001	01B	Broken Pipe Soil Visible, Fractures Longitudinal, Roots Fine Joint	Conventional	40
050B	50	Broken Pipe, Material Pipe Change RCP to VCP and VCP to RCP	Conventional	50
056B	50	Fracture Longitudinal, Broken Pipe	Conventional	20
014B	017	Broken Pipe Soil Visible	Conventional	10
024	027	Broken Pipe Soil Visible, Roots Ball Lateral	Conventional	20
01C	012	Broken Pipe Soil Visible, Roots Fine Joint	Conventional	45
012	012B	Survey Abandoned - Root Ball, Roots Fine Joint	Conventional	20

From MH	To MH	Reason(s)	Method	Length (ft)
044B	043	Broken Pipe Soil Visible, Roots Fine Joint, Roots Fine Lateral, Roots Ball Lateral	Conventional	70
049C	056B	Survey Abandoned - Obstruction - Cross Utility Bore	Conventional	30
EOM	028	Survey Abandoned - Obstruction, Broken Pipe	Conventional	30
		Total Length to Be Replaced		**886**
044	044B	Roots Fine Joint	Trenchless	10
031	050B	Obstruction - Debris	Trenchless	569
025	018	Roots Fine Joint	Trenchless	5
040B	038	Roots Fine Joint	Trenchless	10
018	019	Roots Fine Joint	Trenchless	20
01B	01C	Roots Fine Joint	Trenchless	30
023	030	Roots Fine Joint	Trenchless	170
057	044	Survey Abandoned - Obstruction, Roots Fine Joint	Trenchless	10
017	025	Survey Abandoned - Obstruction, Roots Ball Lateral	Trenchless	20
040D	040	Survey Abandoned - Deposits Settled	Trenchless	24
08	08B	Obstruction in Pipe	Trenchless	120
09B	09	Obstruction in Pipe - Gasket	Trenchless	444
06	07	Crack Longitudinal	Trenchless	10
022	023	4 - 30% WL Sags	Trenchless	78
030	027	8 - <30% WL Sags	Trenchless	327
013	016	Joint Off Set Medium	Trenchless	10
038	033	Joint off Set Medium	Trenchless	10
EOM	01	Fracture Longitudinal	Trenchless	97
		Total Length to Be Rehabilitated		**1,963**

5.4.4. Probable Construction Costs

Table 5-4 provides an opinion of probable construction costs for the rehabilitation of approximately 1,963 LF of gravity sewer mains and the replacement of approximately 886 LF of gravity sewer mains. As per the table, using conventional and trenchless method of sewer repairs is estimated to cost $2.1 million dollars, which is less than the $2.5 million estimated for a purely conventional method of sewer repairs.



DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS

LEGEND

NO REPLACEMENT

REPLACEMENT

REHABILITATION

NORTH

SCALE IN FEET

0 500 FT

FIGURE: 5-2
ALTERNATIVE III - SEWER MAINS TO BE REPLACED AND REHABILITATED

Table 5-4 Alternative No. III Probable Construction Costs

Description	Quantity	Units	Unit Cost ($/Unit)	Total
Mobilization	1	LS	$240,000	$240,000
Traffic Control Plan	1	LS	$90,000	$90,000
Rehabilitation 6" PVC Pipe	282	LF	$120	$34,000
Rehabilitation 8" PVC Pipe	1,083	LF	$140	$152,000
Rehabilitation 10" PVC Pipe	35	LF	$160	$6,000
Rehabilitation 15" PVC Pipe	564	LF	$200	$113,000
New 6" PVC Pipe	266	LF	$250	$67,000
New 8" PVC Pipe	390	LF	$275	$108,000
New 10" PVC Pipe	25	LF	$300	$8,000
New 12" PVC Pipe	205	LF	$325	$67,000
Remove and Replace Sewer Lateral	90	EA	$4,000	$360,000
Bypass Pumping	1	LS	$300,000	$300,000
Subtotal Construction Costs				**$1,561,000**
Contingency (15%)				$234,150
Engineering, Environmental, Construction Administration (25%)				$390,250
Total Capital Construction Costs				**$2,185,400**
NOTE: All capital construction costs are rounded up to the nearest thousand.				

5.4.5. Annual O&M Costs

Similar to Alternative No. II, Alternative No. III includes only the rehabilitation or replacement of existing deteriorated gravity sewer mains and laterals and will consist of conventional maintenance costs to operate the sewer collection system. The existing costs will not be affected due to these improvements. Table 4-4 displays the annual O&M costs associated with the sewer collection system.

5.5. Alternative Evaluation

As previously stated, the purpose of this PER is to provide a comprehensive evaluation of the District's existing sewer collection system and to recommend the replacement or rehabilitation of deteriorated gravity sewer mains through the District in order to prevent blockages, SSO's, and pipe failure. The anticipated useful life of rehabilitated sewer pipe and replaced sewer pipe is the same and in excess of 50 years. The three alternatives considered are as follows:

- Alternative I: No Project
- Alternative II: Convention Construction Method
- Alternative III: Conventional and Trenchless Construction Methods

Alternative I was eliminated from consideration as it does not address the long-term needs of the District. The sewer mains considered in this Section would still require replacement in the future as they begin to fail. It was deemed more practical to address these structural and performance issues prior to failure of the system. The following paragraphs provide an evaluation of the remaining two alternatives.

5.5.1. Anticipated Issues

Alternatives Nos. II and III would require the replacement or rehabilitation of the District's existing gravity sewer mains. There are no anticipated design issues, as both alternatives implement standard, common replacement, or rehabilitation methods. These alternatives may include excavation near trees and shrubs; however, Alternative No. III seeks to minimize the amount of excavation by using trenchless construction methods. Compliance with existing environmental and District ordinances needs to be followed during the time of construction.

Replacing or rehabilitating the District's existing sewer collection system will address the State's planning priorities included in California Governmental Code Section 65041.1. Alternative Nos. II and III will both promote infill development by rehabilitating and improving existing infrastructure. The rehabilitated sewer collection system will protect environmental resources by reducing the likelihood of sewer collection system leaks and overflows. The improved system will also minimize costs to District residents by lowering repair and replacement costs.

5.5.2. Environmental and Climate Change Considerations

Projects approved by the SWRCB must address the state planning priorities in Section 65041.1 of the Government Code. These priorities are intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety in the state.

Land subsidence is common in the central valley of California due to a reduction in subsurface pressure caused by groundwater pumping. In parts of the Central Valley, subsidence in excess of 20 feet has occurred in the past 20 years. Although the District is not listed as an area of concern for land subsidence, the District's location makes it susceptible to the impacts of ground sinking. Increased frequency of droughts due to the changing climate results in increased groundwater pumping and exacerbates this phenomenon. Land subsidence leads to severe damage to underground infrastructure like sewer pipes.

Old and broken sewer pipes lead to leaks in the system and pollute underlying groundwater. Since domestic consumption is a known beneficial use of District's groundwater, sewer spills lead to contamination of a drinking water source which is a major public health concern.

Each alternative receiving further consideration (Alternatives II and III) addresses the priority of protecting environmental and public health by providing effective conveyance and treatment of sewers. The broad environmental impacts of each alternative are similar. Sewer collection system deficiencies will be addressed to provide safe conveyance and disposal of community wastewater. Both alternatives will prevent unsanitary wastewater overflows and exposure to hazardous raw sewage. Moreover, the proposed improvements to the treatment plant infrastructure will lead to efficient process performance and lower energy usage due to the use of improved blowers and sensors.

The negative impacts due to either alternative is also similar. Construction to replace sewer lines, be it conventional or trenchless, will lead to carbon dioxide and other greenhouse gas emissions. The construction materials used for construction also account for emissions from their manufacture. Therefore, both the choice of pipe used, and the construction method selected will have an impact on the climate.

Alternative II of conventional construction method of replacing sewer lines will lead to more than 2,850 LF of trenching and replacing existing pipes and damaged pipe sections with new PVC pipes. This alternative leads to lengthy periods of construction and extended traffic and sewer service disruptions. Asphalt pavements would need to be removed and replaced along with the pipes.

Alternative III of a combination of conventional and trenchless construction method would require under 886 LF of replacement and 1,964 LF of rehabilitation using trenchless method. This hybrid method would also use PVC for new pipes but would eliminate the need for repaving the roads by more than 90%. Moreover, the thickness of the material used for CIPP lining of sewer pipe defects is less than half of the typical thickness of a new PVC pipe. Therefore, the total amount of new material used is greatly reduced in Alternative III compared to Alternative II.

Vulnerability assessment of the proposed sewer replacements indicates that the new construction could be susceptible to water supply depletion and subsequent land subsidence. Adaptation measures could include groundwater recharge to combat further land subsidence, but it is outside the scope of the project. Mitigation measures are measures taken to slow or stop changes to the environment caused by greenhouse gas (GHG) emissions. The use of VFDs on blowers and pumps will reduce power demands and could be included as recommended improvements to the WWTP. SCADA-informed operation of the WWTP will help further decrease the amount of GHG emissions produced during operation of the plant.

5.5.3. Annual O&M Costs

For each alternative, the annual O&M cost associated with the improved sewer collection system would be similar to the system's existing O&M expenses. Table 5-5 displays the District's operating expenses for the sewer operations and maintenance for the past two fiscal years. According to the table, the District's average annual O&M costs for sewer is approximately $1,043,315.

Table 5-5 Average Annual O&M Costs

Fiscal Year	O&M Costs [(1)]
2021/22	$1,023,620
2022/23	$1,063,009
Average	**$1,043,315**

Notes:
[(1)] Includes Administration, Operations, and Maintenance costs.

Table 5-5 Average Annual O&M Costs

Fiscal Year	O&M Costs [1]
Source: Del Rey Audited Budget for FY 2021/22, 2022/23	

5.5.4. Life-Cycle Costs

The alternatives described above (Conventional and a combination of Trenchless and Conventional) were evaluated to determine the most feasible, cost-effective alternative. A life cycle of 25 years was used to determine lifetime O&M costs. A summary of costs for Alternative Nos. II and III are shown below in Table 5-6.

Table 5-6 Life Cycle Cost Estimates

Alternative	Capital Cost	Lifetime O&M	Total Life-Time Cost
II – Conventional Construction Methods	$2,548,000	$1,043,315	$3,591,315
III – Trenchless & Conventional Construction Methods	$2,185,400	$1,043,315	$3,228,715

The table shows that Alternative III has the lowest life-time cost. As previously stated, it is anticipated that O&M will be the same regardless of the sewer mains being replaced or rehabilitated, therefore both Alternatives have the same lifetime O&M.

5.6. Recommended Alternative

Based on each alternative's life-time cost, design criteria/compliance issues, and feasibility, it is recommended that the District proceed with Alternative No. III (Trenchless and Conventional Construction). As demonstrated above, Alternative III has the lowest capital cost and lifetime cost of the two feasible alternatives. This alternative also minimizes the amount of excavation required.

SECTION 6 - PROPOSED WWTP IMPROVEMENTS

6.1. Project Overview

This section provides a more detailed description of the proposed WWTP Improvements. Figure 6-1 displays a site layout that illustrates the proposed location of the various treatment improvements. In this proposed alternative, the existing pump station will remain. New headworks will be installed with a screen to separate solids from the wastewater. The screened wastewater will enter the proposed extended aeration lagoon through an 8-inch gravity pipeline. The proposed aeration system will achieve the desired effluent requirements. Screened wastewater will mix with Return Activated Sludge (RAS) before entering the proposed aeration basin.

For this Report, Aero-Mod SEQUOX for biological nutrient removal offers the benefits of sequencing aeration and continuous clarification. The combination of cyclical aeration in the four (4) basins creates excellent aerobic conditions for BOD and ammonia removal when aerating. When the air is off, the nitrate laden MLSS settles and becomes oxygen deprived, creating anoxic conditions for the nitrates to become the oxygen source and allow for denitrification to occur. The plug flow process repeats this cyclical on/off aeration several times as the liquid mass progresses through the SEQUOX process and on to the clarifier. The process is energy efficient and has a small footprint and it does not require recycling pumps or mixers. The proposed aeration system will be connected to aeration units. Aeration will be supplied with two blowers, one on duty and one on standby. The blowers will be operated by a control panel with a variable frequency drive (VFD). Mixed liquor will flow across the aerated tank reactor and will enter a distribution box that will split flow between two clarifiers. One clarifier will be required to handle the plant's design flow of 0.30 MGD, while the other will be provided for redundancy. Mixed liquor will settle in the clarifier and clear liquid will overflow into a peripheral weir channel and into the RAS/WAS pump station. Settled sludge will be recirculated back to the aeration basin or wasted to a sludge drying bed. Treated effluent will be conveyed to the facility's new storage and percolation ponds that will be constructed.

6.1.1. Extended Aeration Lagoon Reactor

To improve biological treatment, the existing aeration basin with integrated clarifier and digestor will be upgraded to an extended aerated lagoon reactor by adding diffused aeration. Screened wastewater will enter the 0.3 MG aeration lagoon though an 8-inch discharge pipe. To improve biological treatment of the wastewater, the basin will be equipped with an aeration system comprised of individual aerator units. For this Report, the Aero Mod System has been selected to achieve the required effluent levels for BOD and TSS. The system is a diffused aeration technology that incorporates efficient aeration and mixing in one unit.

6.1.2. Clarifier

The SEQUOX process often incorporates the ClarAtor clarifier where the biomass is settled and returned to the Selector Tank. The clarified effluent is withdrawn and discharged. This technology is low Maintenance featuring stainless steel and fiberglass components with no moving parts below the water, its unique flow regulation system provides in-basin surge storage. For this proposed project, a center feed configuration will be used for influent entering the secondary clarifier. Mixed liquor will be carried to the center of the clarifier, which will radially distribute flow from the top of the basin. a peripheral weir will collect effluent and surface skimmer will collect floating scum.

Table 6-1 Extended Aeration Basin Summary

Parameter	Value
Overall Tank Dimensions	
Length, ft	61.00
Width, ft	87.50
Total Area, sf	5,338
Selector Tank	
Length, ft	20.0
Width, ft	12.0
Depth, ft	14.0
Freeboard, ft	2.0
Total Volume (MG)	0.025
Aeration Tank (Stage 1)	
Length, ft	25.0
Width, ft	26.625
Total Volume (MG)	0.139
Aeration Tank (Stage 2)	
Length, ft	46.25
Width, ft	14.0
Total Volume (MG)	0.135
Clarifier Tank	
Length, ft	20.0
Width, ft	20.0
Depth, ft	14.0
Total Volume (MG)	0.083
Aerobic Digester Tank	
Length, ft	11.0
Width, ft	41.87
Depth, ft	14.50
Total Volume (MG)	0.099

6.1.3. Sludge Dewatering Process

A mechanical sludge dewatering unit is a crucial component of wastewater treatment plants, especially after extended aeration lagoons. This unit is responsible for removing excess water from the sludge produced during the treatment process, resulting in a more concentrated and manageable solid waste product. The sludge, which has undergone primary and secondary treatment in the extended aeration lagoon, is directed to the dewatering unit that will be conditioned with chemicals (such as polymer dosing) to improve dewaterability before feeding into the dewatering machine. The conditioned sludge enters the dewatering machine, for the purpose of this report a screw press machine is considered. This machine applies pressure to the sludge to separate water from solids. The sludge is gradually compressed, forcing out water through a filtration system. As water is expelled from the sludge, it is collected and either returned for further treatment or discharged as effluent. The dewatered sludge, now with a higher solids content, is discharged from the machine as a cake-like material. The dewatered sludge may undergo additional treatment processes, such as drying or composting, to further reduce moisture content and stabilize the material. It can then be disposed of or repurposed, such as for agricultural use or landfill cover.

6.1.4. Effluent Disposal

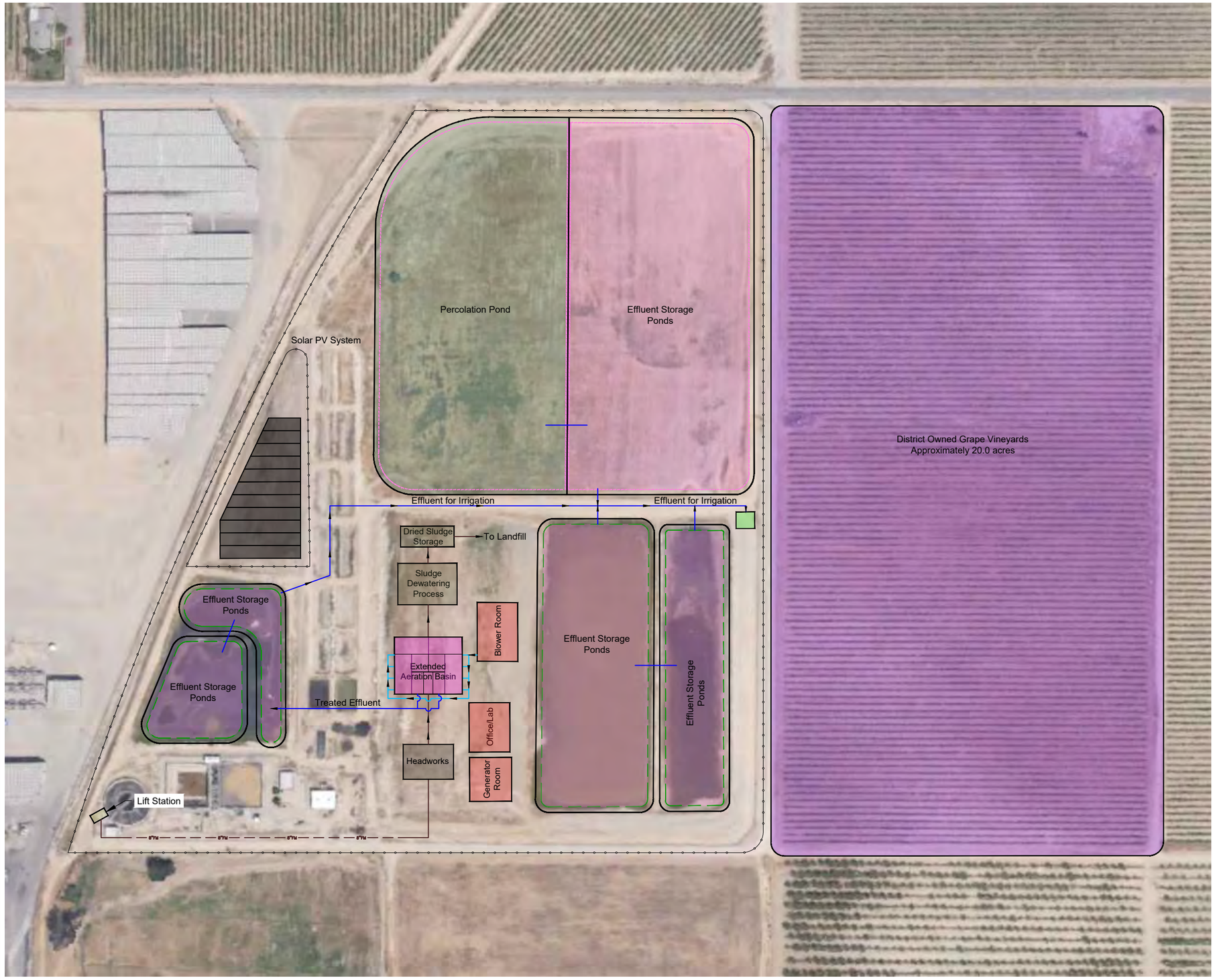
Treated effluent from the clarifiers will be conveyed to five (5) effluent storage ponds. Each storage pond has a side water depth of approximately 8 feet with 2 feet of free board. The ponds will provide up to 81.30 ac-ft of storage and one (1) unlined pond will be utilized to percolate treated effluent. In addition to irrigation, one unlined pond is designated for percolating the treated effluent into the soil. The effluent will be conveyed through a pipeline by gravity into the storage ponds. This stored effluent will be conveyed through an irrigation pump station to irrigate the District's owned 20-acre field. The effluent from the will be pumped from irrigation pump station to the irrigation land through a distribution pipe. The percolation pond serves as a secondary disposal method for the treated effluent for groundwater recharge. When the effluent storage ponds reach their maximum holding capacity of 81.3 acre-feet, any surplus water will be diverted to the percolation pond for groundwater recharge. This ensures the excess water is effectively managed and does not overflow from the storage ponds. By allowing the effluent to percolate naturally into the soil, the percolation ponds contribute to the replenishment of local groundwater basins. According to the water balance calculations provided in Appendix D, a total storage area of 10.67 acres and percolation area of 4.40 acres would allow the District to dispose 0.30 MGD either for irrigation or groundwater recharge. Table 6-1 displays the surface areas and estimated volumes of each pond.

Table 6-2 Effluent Disposal Pond Summary

Pond	Surface Area (acres)	Capacity (acre-ft)
Pond 1	0.41	7.95
Pond 2	0.55	5.46
Pond 4	2.96	23.42
Pond 5	1.35	11.23
Pond 6	5.40	33.24
Total	**10.67**	**81.30**

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS



NORTH
SCALE: 1"=175'

FIGURE 6-1: PROPOSED WWTP SITE LAYOUT

6.1.5. Water Balance

Water balance calculations are typically used to determine the combination of treated effluent storage volume and reclamation area required to dispose of treated effluent. Water balance calculations must be used to justify the disposal capacity of a WWTF before a certain capacity is granted by regulatory agencies.

Table 6-3 Water Balance Design Data

Parameter	Value
Average Design Flow, MGD	0.300
Irrigation Efficiency, %	70%
Treatment Pond Area, Acres	1.40
Lined Percolation Ponds, Acres	10.67
Unlined Percolation Pond Area, Acres	4.40
Effluent Reclamation Area, Acre	20
Percolation Rate, inch/day	1.3

6.1.6. Storage Requirements

When applying treated effluent water for agricultural irrigation, a certain amount of effluent storage will be required to supply recycled water during the summer months. According to the water balance calculations provided in Appendix D, the maximum irrigation demand will occur during the month of July, during which approximately 22.1 acre-feet of recycled water will be used. The District currently has approximately 81.3 acres-feet of storage and any surplus water will be diverted to the unlined percolation pond for groundwater aquifer recharge. Figure 6-2 displays the proposed site layout for the evaporation and percolation ponds.

6.1.7. Solar Photovoltaic System

The District currently has an existing solar system to power the WWTP. As part of this improvements Project, the District would like to increase the solar power generation due to the upgrades being made to the WWTP. The largest electricity demands for the upgraded WWTP will come from the aerator motors, blowers, and lift station pump motors and sludge dewatering unit. This will help in maximizing the District resources. Renewable energy projects, such as solar installations, may be eligible for the CWSRF Green Project Reserve Fund (GPR). The District would like to utilize GPR funding to assist with the capital cost associated with the installation of a new solar system at the WWTP.

6.2. Climate Change Considerations

The impacts of climate change on the selected alternative as well as adaptation and mitigation measures have been considered in previous sections of this Study. The WWTP will be most vulnerable to the effects of drought and water supply depletion and will be minorly affected by increasing water and air temperatures and increased storm severity. The extended aeration activated sludge system is well suited to operating over a wide range of influent conditions. Decreased influent flows and higher biological load concentrations have little impact on the important operational factors of influent BOD per volume and sludge retention time. Proper site drainage and erosion control will reduce the damage from severe storms.

DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND
WASTEWATER TREATMENT PLANT IMPROVEMENTS

NORTH
SCALE: 1"=80'

FIGURE 6-2: PROPOSED EFFLUENT STORAGE AND PERCOLATION PONDS

Mitigation measures are measures taken to slow or stop changes to the environment caused by GHG emissions. The use of VFDs on blowers and pumps will reduce power demands, as will decreasing aeration during periods of low oxygen demand. The use of efficient aeration/mixing equipment will also decrease the amount of GHG emissions produced during operation of the facility.

6.3. Opinion of Probable Construction Cost

This section describes the probable cost for constructing, operating, and maintaining the proposed project. No key issues or items likely to significantly impact the project budget or schedule are foreseen.

6.3.1. Capital Costs

The capital construction cost for the proposed project is included in this section. These cost estimates are only preliminary and final estimates will be prepared at the completion of each design stage. Table 6-3 displays the estimated capital construction costs. The following is a description of the assumptions used in the preparation of the cost estimates:

- Mobilization refers to all activities and associated costs for transportation of the contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; obtaining all required insurance, bonds and permits; and all other work which must be performed, or cost incurred prior beginning work on the various contract items at the project site.
- The aerated lagoon reactor cost includes the purchase and installation of the aeration equipment, including blowers.
- Miscellaneous yard piping includes the installation of piping from the headworks to the extended aerated lagoon basin to the sludge dewatering unit, from the clarifiers to the percolation pond distribution system, RAS/WAS piping from the clarifiers to the inlet of the aerated lagoon, WAS piping to the sludge dewatering equipment.
- The cost of the sludge dewatering includes two RAS/WAS pumps, a pump station and purchase and installation of a sludge dewatering process unit.
- Installation of HDPE pond liners on the storage ponds to store the treated effluent for irrigation purposes.
- Installation of a new irrigation pump station.
- Installation of a new SCADA operating system.
- Electrical and instrumentation costs include wiring all powered components to the existing electrical distribution system and connecting all new meters and equipment to the new SCADA system.
- Installation of a solar PV system for the WWTP.
- A contingency of 15 percent has also been added to the construction costs to cover any unforeseen improvements that may be identified during construction.

Table 6-4 Probable Construction Costs

Description	Quantity	Units	Unit Cost ($/Unit)	Total
Mobilization	1	LS	$240,000	$240,000
Headworks	1	LS	$600,000	$600,000
Extended Aeration Basin	1	LS	$2,500,000	$2,500,000
WWTP Equipment Package & Installation	1	LS	$3,500,000	$3,500,000
Blower Building	1	LS	$800,000	$800,000
Sludge Dewatering System	1	LS	$500,000	$650,000
Wastewater Facility Piping	1	LS	$800,000	$800,000
Effluent Storage Ponds HDPE Liners	140,000	SF	$4.00	$560,000
Percolation Pond (Excavation)	19,400	CY	$3.50	$67,900
Irrigation Pump Station	1	LS	$1,000,000	$1,000,000
Electrical & Instrumentation	1	LS	$2,500,000	$2,500,000
Solar PV System	1	LS	$1,500,000	$1,500,000
Subtotal Construction Costs				**$14,717,900**
Contingency (15%)				$2,207,685
Engineering, Environmental, Construction Administration (25%)				$3,679,475
			TOTAL	**$20,605,060**
NOTE: All capital construction costs are rounded up to the nearest thousandth.				

6.3.2. Operations and Maintenance

Operation and maintenance costs for the upgraded wastewater treatment plant will include primarily salaries and wages, power costs, sampling cost, sludge disposal, and replacement costs. The following is a description of the assumptions for O&M cost estimates:

- Labor includes the costs to cover the staffing requirements at the WWTP. The District's Operator who currently operates and maintains the WWTP anticipates that the upgraded facility would require 4 additional hours per week to maintain the facility. Labor cost included in Table 6-4 assumes approximately 15 hours per week will be needed.
- Sampling costs include laboratory costs other than those at the WWTP. Some of the required monitoring at the WWTP will be done using field instruments. These parameters include pH, temperature, electrical conductivity, and dissolved oxygen. Other monitoring parameters such as BOD, TSS, standard minerals, and bacteriological tests will be outsourced to an independent laboratory. These costs are estimated to be approximately $7,500 per year.
- Sludge disposal costs include the hauling of dewatered biosolids to a permitted sludge accepting facility. Current market costs vary depending on location. These costs are estimated to be approximately $15,000 per year.
- Annual solar maintenance included cleaning the solar panels at least once per year. This cost is assumed to be $1,500 per year.
- Annual equipment replacement costs include scheduled and emergency replacements. These costs are assumed to be $15,000 per year.

Table 6-4 contains a summary of the estimated annual operations and maintenance cost for the proposed WWTP improvements project.

Table 6-5 O&M Costs for Proposed Project

Description	Quantity	Units	Unit Cost ($/Unit)	Total
Labor	800	Hr.	$85	$68,000
Solar PV System	1	LS	$1,500	$1,500
Sludge Disposal	1	LS	$15,000	$15,000
Sampling	1	LS	$7,500	$7,500
Miscellaneous Repairs	1	LS	$15,000	$15,000
			Total O&M Costs	**$107,000**

SECTION 7 - PROPOSED PROJECT

7.1. Project Overview

As previously discussed, the purpose of this proposed sanitary sewer collection system and WWTP improvements project is to replace or rehabilitate deteriorated gravity sewer mains throughout the District in order to prevent SSOs and provide adequate sewer services to all customers within the District's service area. This Section provides a more detailed description of the proposed Project (Alternative No. III), which consists of rehabilitating approximately 1,964 LF of gravity sewer mains using trenchless construction methods, replacing approximately 886 LF of gravity sewer mains via conventional construction methods, and miscellaneous repairs and improvements to the District's Wastewater Treatment Plant (WWTP). The following sections describe the proposed improvements and upgrades to the existing sewer collection system and WWTP.

7.2. Proposed Improvements to Sewer Collection System

Based on the condition assessment conducted, the recommended improvements for the District's sewer collection system are summarized in the following paragraphs.

7.2.1. Sewer Main Replacement Design Criteria

As previously discussed in Section 4.4 of this PER, CCTV inspection conducted on 23,387 LF of the City's sewer collection system revealed severe defects in portions of the collection system including root intrusion, fractured and broken pipe, cracked pipe, sags greater than 60 percent, defective and intruding laterals, joint displacements, and attached deposits (grease and concrete). The segments of the sewer collection system recommended for replacement have been selected based on sorted NASSCO ratings and the condition of the existing sewer mains. For this proposed project, it is recommended that approximately 886 LF of gravity sewer mains be replaced with new sewer pipes before failure occurs. These replacements are recommended where the sags are greater than 60 percent of pipe diameter, broken pipe sections with visible voids and blockages, and severe pipe offsets. Where possible, replacements are limited to only those sections of pipe where the defects are found rather than replacing the entire stretch of pipe between two manholes. Table 7-1 provides a summary of the sewer mains that will be replaced using the conventional construction method of dig and replace.

Table 7-1 Proposed Sewer Main Replacement

Parameter	Total Length (ft)
6" PVC Pipe	282
8" PVC Pipe	1,083
12" PVC Pipe	35
15" PVC Pipe	564
Total	**1,963**

7.2.2. Sewer Main Rehabilitation Design Criteria

Trenchless sewer rehabilitation is recommended where applicable in order to reduce surface disturbance over traditional dig and replace methods, reduce the number of traffic and pedestrian detours, spare tree

removal, decrease construction noise, and reduce air pollution from construction equipment. As discussed in section 5.4, CIPP rehabilitation is proposed for the pipe stretches that have mild defects and sag less than 60% of pipe diameter. Table 7-2 provides a summary of the sewer mains that will be rehabilitated using the trenchless construction method known as cured-in-place (CIPP).

Table 7-2 Proposed Sewer Main Rehabilitation

Parameter	Total Length (ft)
6" PVC Pipe	266
8" PVC Pipe	390
10" PVC Pipe	25
12" PVC Pipe	205
Total	**886**

7.2.3. Potential Construction Problems and Permits

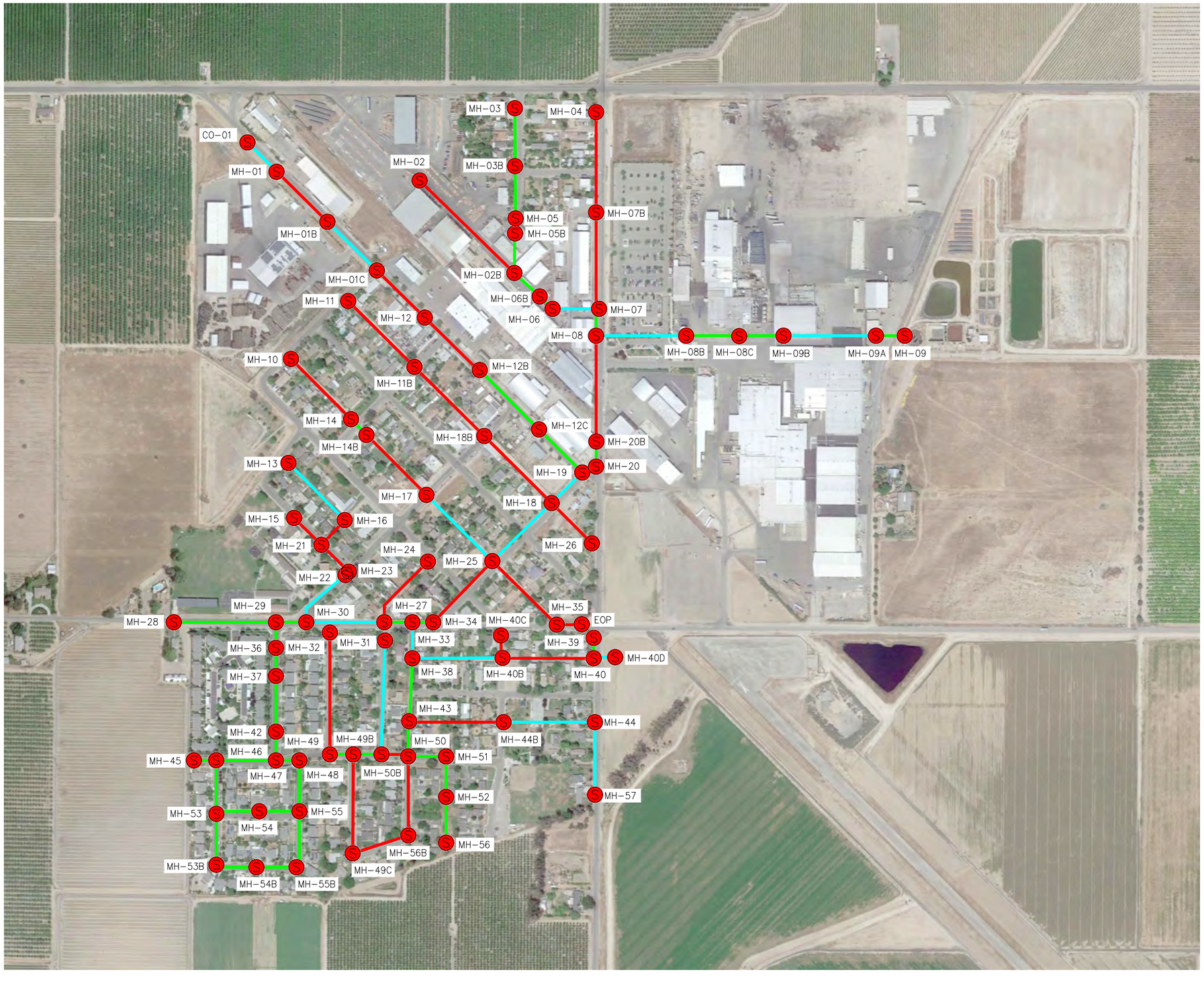
Sewer collection systems historically have construction problems related to many factors. As previously stated, approximately 2,850 LF (886 LF + 1,964 LF) of sewer mains will either be replaced using the conventional construction method of dig and replace or rehabilitated using the trenchless construction method of CIPP. The following is a list of potential problems associated with replacing/rehabilitating sewer mains within the City's sewer collection system:

- Handling of raw sewage by construction crews while replacing sewer mains.
- Disruption to the local streets and temporary detours.
- Reconstruction of trench paving to match roadway standards.
- Access to private properties and businesses during construction.
- Timely backfilling of trenches, sewer line testing, and repaving of streets.
- Connection of existing laterals at depths that could vary 6-feet or more.
- Coordination for disruption of sewer services with both private and public users.

7.3. Proposed Improvements to Wastewater Treatment Plant

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

- Construction of new headworks with a new 8-inch forced main to the extended aeration basin.
- Construction and installation of a packaged extended aeration treatment system with integrated digestor and clarifier.
- Construction of a blower building.
- Installation of new piping throughout the upgraded WWTP.
- Installation of HPDE pond liners on storage ponds.
- Installation of SCADA Operating System.
- Construction of Irrigation Pump Station.
- Miscellaneous electrical and instrumentation upgrades.
- Construct sampling docks at storage ponds.
- Upgrading the existing solar PV system.



DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS

LEGEND

NO REPLACEMENT

REPLACEMENT

REHABILITATION

NORTH

SCALE IN FEET

0 500 FT

FIGURE: 7-1 PROPOSED SEWER COLLECTION SYSTEM IMPROVEMENTS TO BE REPLACED AND REHABILITATED

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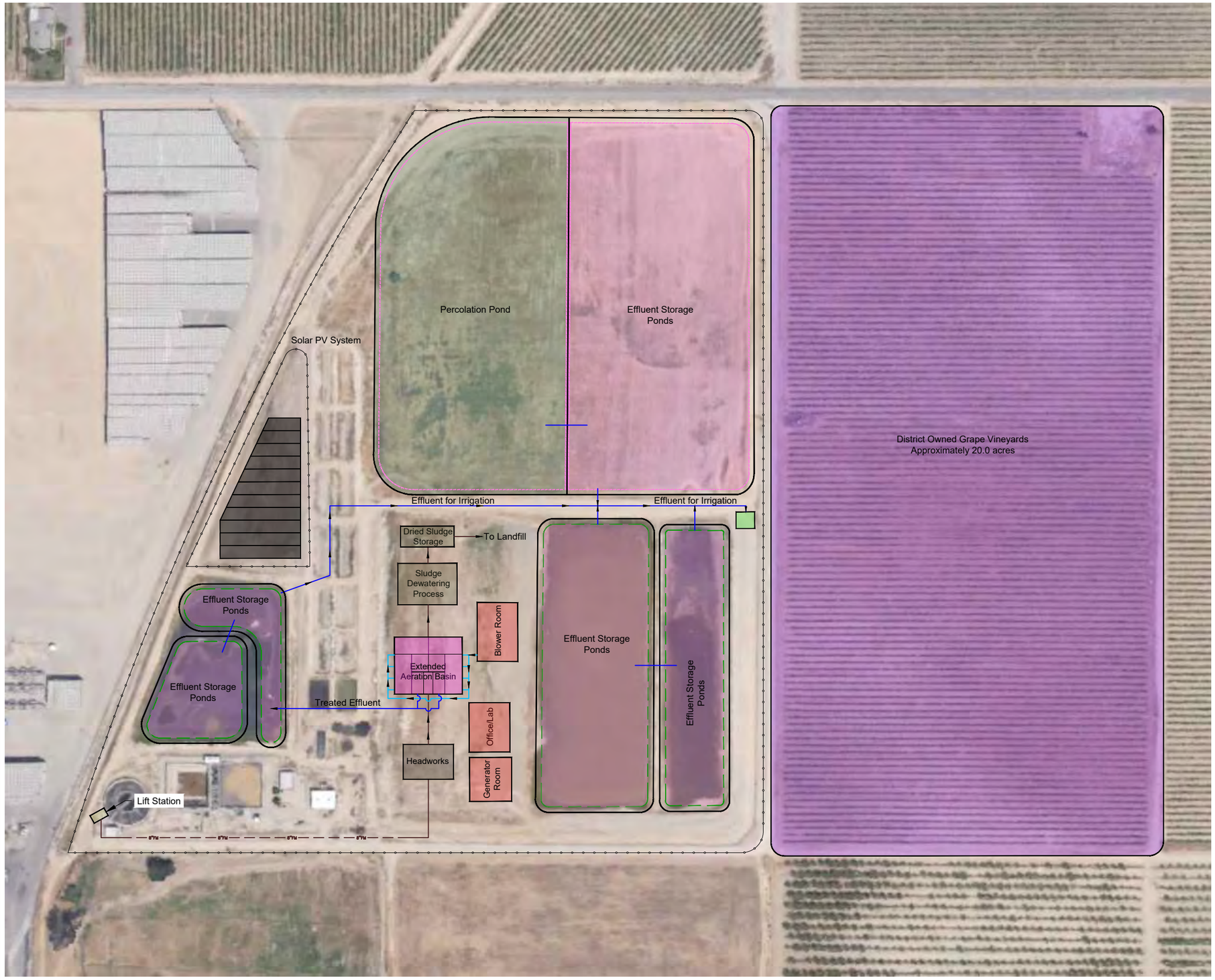
DEL REY COMMUNITY SERVICES DISTRICT

SANITARY SEWER COLLECTION SYSTEM AND WASTEWATER TREATMENT PLANT IMPROVEMENTS



NORTH
SCALE: 1"=175'

FIGURE 7-2: PROPOSED WWTP SITE LAYOUT

7.4. Opinions of Probable Construction Costs

This section describes the probable cost for construction, operating, and maintaining the District's improved sewer collection system and WWTP. No key issues or items likely to significantly impact the project budget or schedule are foreseen at this time.

7.4.1. Capital Construction Costs

The capital construction costs for the proposed improvements to the sewer collection system and WWTP are included in this section. The cost estimates included in this Section are only preliminary and final estimates will be prepared at the completion of each design stage. Table 7-3 displays the estimated construction costs for the proposed improvements, including contingency, engineering, and construction administration fees.

Table 7-3 Summary of Capital Construction Costs

Description	Quantity	Units	Unit Cost ($/Unit)	Total
General Construction Costs				
Mobilization	1	LS	$240,000	$240,000
Traffic Control Plan	1	LS	$90,000	$90,000
			Subtotal General Construction Costs	**$330,000**
Sewer Main Replacement				
6" PVC Pipe	266	LF	$250	$67,000
8" PVC Pipe	390	LF	$275	$108,000
10" PVC Pipe	25	LF	$300	$8,000
12" PVC Pipe	205	LF	$325	$67,000
Surface Restoration	420	SY	$30	$13,000
Remove and Replace Sewer Lateral	90	EA	$4,000	$360,000
Bypass Pumping	1	LS	$300,000	$300,000
			Subtotal Sewer Main Replacement Costs	**$923,000**
Sewer Main Rehabilitation				
6" CIPP Liner	282	LF	$120	$34,000
8" CIPP Liner	1,083	LF	$140	$152,000
10" CIPP Liner	35	LF	$160	$6,000
15" CIPP Liner	564	LF	$200	$113,000
			Subtotal Sewer Main Rehabilitation Costs	**$305,000**
WWTP Improvements				
Headworks	1	LS	$600,000	$600,000
Extended Aeration Basin	1	LS	$2,500,000	$2,500,000
WWTP Equipment Package & Installation	1	LS	$3,500,000	$3,500,000
Blower Building	1	LS	$800,000	$800,000
Sludge Dewatering System	1	LS	$500,000	$650,000
Wastewater Facility Piping	1	LS	$800,000	$800,000

Description	Quantity	Units	Unit Cost ($/Unit)	Total
Effluent Storage Ponds HDPE Liners	140,000	SF	$4.00	$560,000
Percolation Pond (Excavation)	19,400	CY	$3.50	$67,900
Irrigation Pump Station	1	LS	$1,000,000	$1,000,000
Electrical & Instrumentation	1	LS	$2,500,000	$2,500,000
Subtotal WWTP Improvements Costs				**$14,477,900**
Subtotal Construction Costs				**$16,035,900**
Contingency (10%)				$2,405,385
Engineering, Environmental, Construction Administration (15%)				$4,008,975
Total Capital Construction Costs				**$22,450,260**
NOTE: All capital construction costs are rounded up to the nearest thousand.				

The total capital construction costs for the proposed Project would be approximately $22.4 million. The District would apply for grant funding through the SWRCB CWSRF to fund the proposed improvements to the sewer collection system and WWTP. The City should be eligible to receive up to 100% of the total construction cost for both the planning and construction costs.

7.4.2. Operation and Maintenance

Annual O&M costs are based on the District's 2022-23 O&M costs associated with the sewer collection system and WWTP as per their latest audited reports. No additional O&M costs are anticipated due to the project. The upgrades at the WWTP will provide significant cost savings to the WWTP due to the expansion of the solar PV system will would help to reduce the energy costs of the plant. Further, the addition of VFD's and SCADA system will enable better control and operation of the plant leading to reductions in the total electricity bill. However, these cost savings are not quantified in this study. Therefore, Annual O&M costs are assumed to be the same as the costs given in Table 4-4.

7.4.3. Present Worth Analysis

To determine the present worth of the proposed Project, the salvage value for each construction item was first determined. Table 7-4 displays the estimated cost for each construction item and each item corresponding useful life. The salvage value for each item was calculated using the SWRCB's Economic Analysis Model. The salvage value for the proposed project was estimated to be approximately $8.5 Million.

Table 7-4 Estimated Salvage Value

Item	Cost	Useful Life	Salvage Value
Site Work[(1)]	$630,000	100	$504,000
Surface Restoration	$640,900	30	$213,633
Pipelines[(2)]	$1,355,000	60	$903,333
Lateral Connections	$360,000	60	$240,000
Equipment	$10,650,000	40	$5,325,000
Building	$800,000	60	$533,333
Headworks & Irrigation Pump Station	$1,600,000	40	$800,000
Subtotal Construction Costs	**$16,035,900**	**-**	**$8,519,300**
Contingency	$2,405,385	-	-
Engineering, Environmental, Construction Administration	$4,008,975	-	-
TOTAL	**$22,450,260**	**-**	**$8,519,300**

Notes:

(1) Site Work includes mobilization, traffic control and flagging, excavation and backfill of pipelines, and bypass pumping.

(2) Pipelines includes replacing and rehabilitating sewer mains.

(3) No salvage value is given for permitting, contingency, engineering, environmental and construction administration.

Table 7-5 displays the present worth cost analysis that was used to determine the present worth of the proposed project. Using the SWRCB Economic Analysis Model, the proposed Project's present worth was estimated to be approximately $ 33.9 Million. All costs are in 2024 dollars.

Table 7-5 Present Worth Cost Analysis

Year	Design & Construction Cost	O&M Costs		Salvage Value	Present Worth Factor at 6%	Present Worth of Costs				
						Design & Construction Cost	O&M Costs		Salvage Value	Total
		Fixed	Variable				Fixed	Variable		
2024	$22,450,260				1.060	$23,797,276	$0	$0		$23,797,276
2025		$596,085	$427,535		1.000		$596,085	$427,535		$1,023,620
2026		$596,085	$427,535		0.943		$562,344	$403,335		$965,679
2027		$596,085	$427,535		0.890		$530,514	$380,505		$911,018
2028		$596,085	$427,535		0.840		$500,484	$358,967		$859,451
2029		$596,085	$427,535		0.792		$472,155	$338,648		$810,803
2030		$596,085	$427,535		0.747		$445,429	$319,479		$764,908
2031		$596,085	$427,535		0.705		$420,216	$301,395		$721,612
2032		$596,085	$427,535		0.665		$396,431	$284,335		$680,766
2033		$596,085	$427,535		0.627		$373,991	$268,241		$642,232
2034		$596,085	$427,535		0.592		$352,822	$253,057		$605,879
2035		$596,085	$427,535		0.558		$332,851	$238,733		$571,584

Table 7-5 Present Worth Cost Analysis

Year	Design & Construction Cost	O&M Costs		Salvage Value	Present Worth Factor at 6%	Present Worth of Costs				
						Design & Construction Cost	O&M Costs		Salvage Value	Total
		Fixed	Variable				Fixed	Variable		
2036		$596,085	$427,535		0.527		$314,010	$225,220		$539,230
2037		$596,085	$427,535		0.497		$296,236	$212,472		$508,708
2038		$596,085	$427,535		0.469		$279,468	$200,445		$479,913
2039		$596,085	$427,535		0.442		$263,649	$189,099		$452,748
2040		$596,085	$427,535		0.417		$248,725	$178,395		$427,121
2041		$596,085	$427,535		0.394		$234,647	$168,298		$402,944
2042		$596,085	$427,535		0.371		$221,365	$158,771		$380,136
2043		$596,085	$427,535		0.350		$208,835	$149,784		$358,619
2044		$596,085	$427,535		0.331		$197,014	$141,306		$338,320
2045		$596,085	$427,535	$8,519,300	0.312		$185,862	$133,307	$2,656,358	($2,337,188)
Total	**$22,450,260**					**$23,797,276**	**$7,433,133**	**$5,331,328**	**$2,656,358**	**$33,905,378**

7.4.4. Life Cycle Costs

Life-cycle cost refers to the sum of the capital construction costs and recurring O&M cost over the full life span of the proposed project. Table 7-6 displays the life cycle cost analysis for the proposed project. The analysis covers a 20, 30 and 40-year lifecycle and assumes a 1.2 percent discount rate for the 20-year lifecycle and a 1.5 percent discount rate for the 30 and 40-year lifecycle. It must be noted that the O&M cost assumed here is not the additional costs incurred due to the proposed improvements, but the annual sewer operational costs for Del Rey WWTP.

Table 7-6 Proposed Project Life-Cycle Costs

	Total Amount
Capital Construction	$22,450,260
O&M Cost	$1,023,620
O&M Cost (20-yrs)	$15,957,378
O&M Cost (30-yrs)	$21,424,666
O&M Cost (40-yrs)	$25,695,703
20-yr Life Cycle	$38,407,638
30-yr Life Cycle	$43,874,926
40-yr Life Cycle	$48,145,963

7.5. Project Schedule

Approval of the CWSRF construction application is expected to take at least a year after submission to the SWRCB. After approval, the project engineer can begin the project design. Once the plans and specifications and construction documents have been prepared, bidding can begin, followed by construction. Construction time is expected to be one year. A project schedule is provided in Table 7-7 below.

Table 7-7 Estimated Project Schedule

Task	Estimated Date
Environmental Documents	January 31, 2025
Sewer Rate Study	December 31, 2024
CWSRF Application Preparation	
General Package	April 30, 2025
Technical Package	April 30, 2025
Environmental Package	April 30, 2025
Financial Package	April 30, 2025
CWSRF Application Submission	April 30, 2025
CWSRF Application Review	April 30, 2025 - December 31, 2026
Funding Agreement Approved	December 31, 2026
Final Project Design	February 28, 2027
Preparation of Construction Documents	February 28, 2027
Bidding	March 31, 2027
Construction Begins	May 31, 2027
Construction Ends	April 30, 2028

APPENDIX A

SOIL REPORT

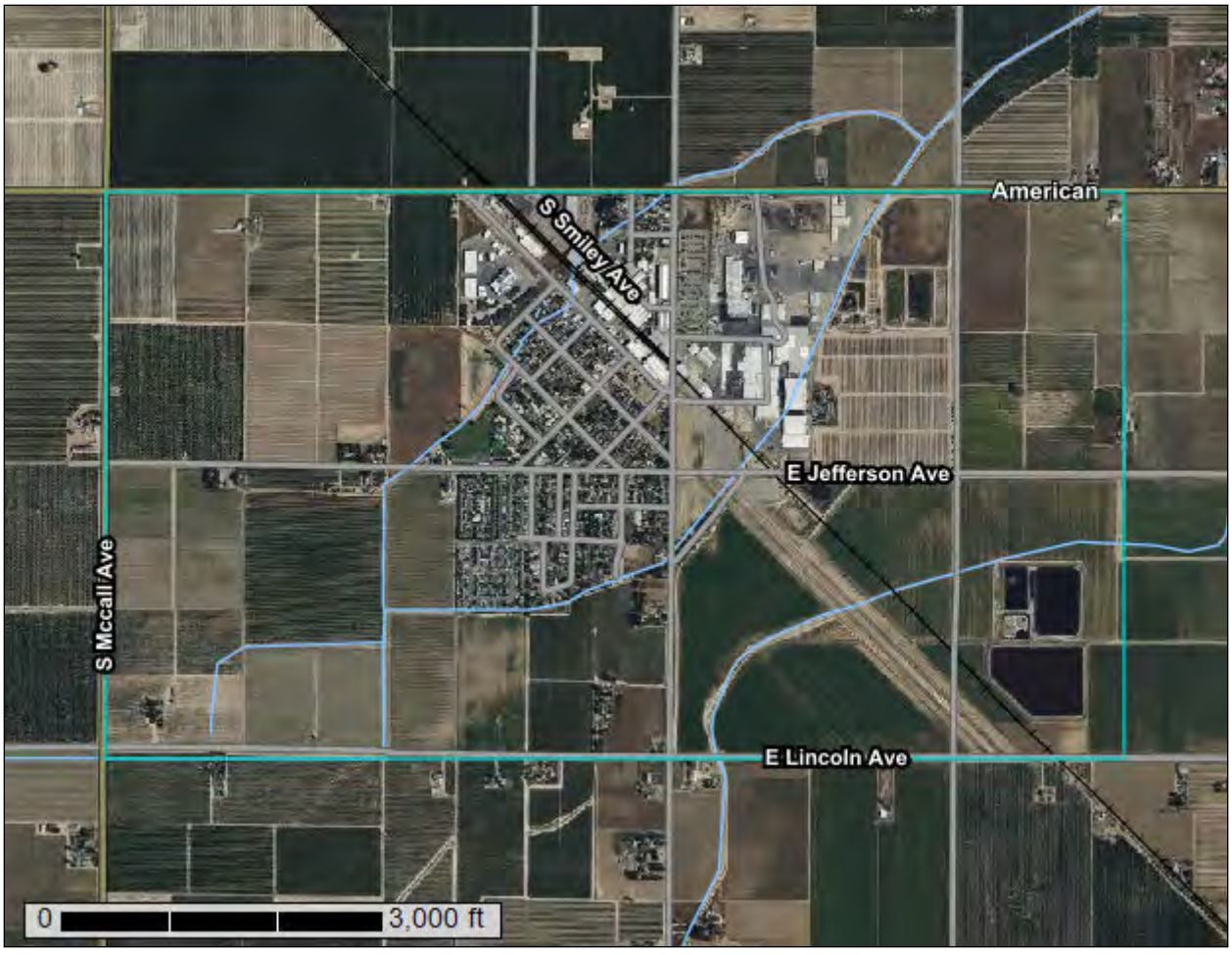
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eastern Fresno Area, California



March 25, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

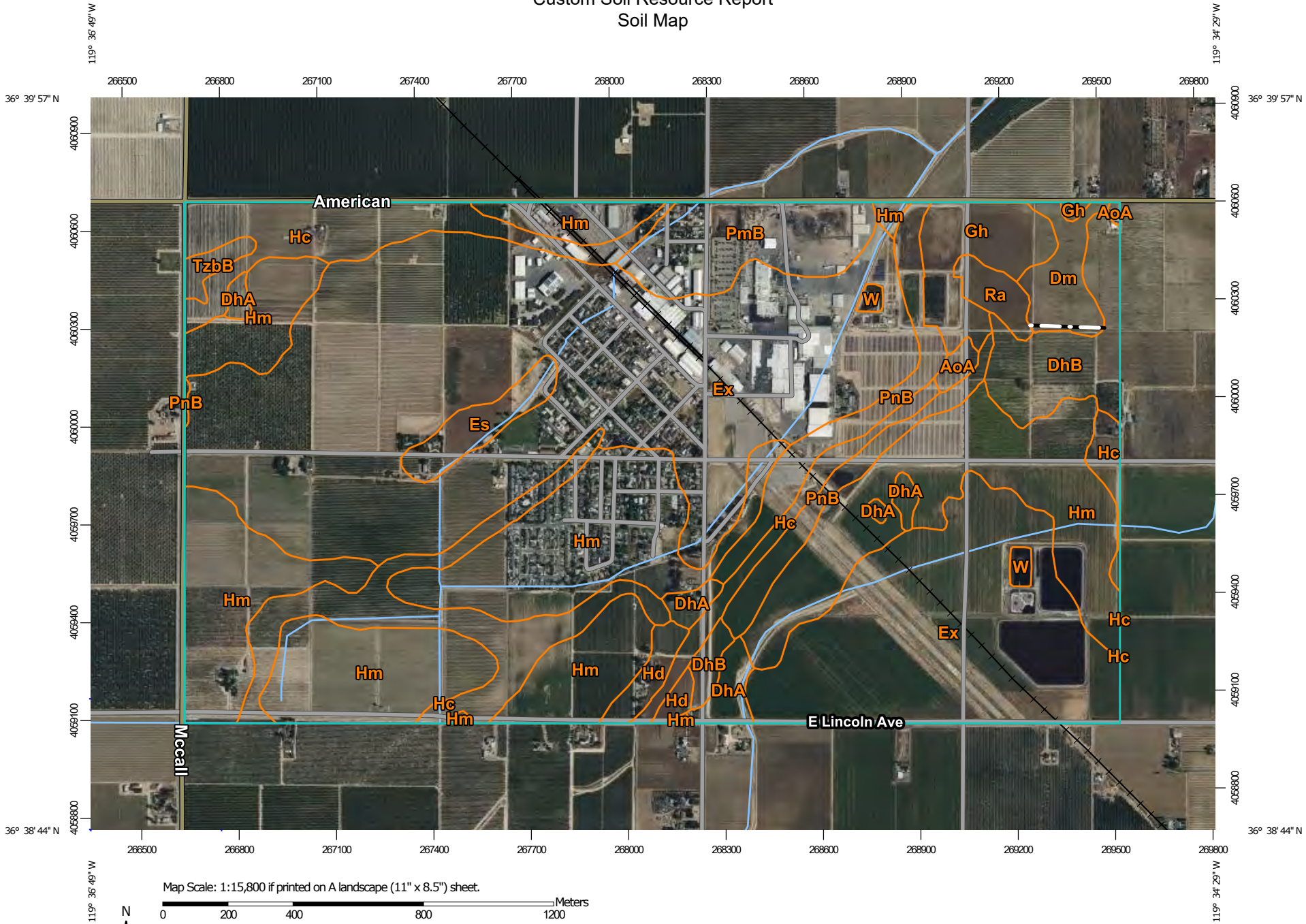
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:15,800 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eastern Fresno Area, California
Survey Area Data: Version 16, Aug 31, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2022—May 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AoA	Atwater loamy sand, 0 to 3 percent slopes, MLRA 17	3.5	0.3%
DhA	Delhi loamy sand, 0 to 3 percent slopes, MLRA 17	15.7	1.4%
DhB	Delhi loamy sand, 3 to 9 percent slopes	36.9	3.2%
Dm	Dello loamy sand	15.9	1.4%
Es	Exeter sandy loam	14.3	1.2%
Ex	Exeter loam	484.9	42.5%
Gh	Grangeville fine sandy loam, water table	28.7	2.5%
Hc	Hanford sandy loam	116.6	10.2%
Hd	Hanford sandy loam, benches	10.1	0.9%
Hm	Hanford fine sandy loam	315.3	27.6%
PmB	Pollasky sandy loam, 2 to 9 percent slopes	41.3	3.6%
PnB	Pollasky fine sandy loam, 2 to 9 percent slopes	43.1	3.8%
Ra	Ramona sandy loam	7.9	0.7%
TzbB	Tujunga loamy sand, 3 to 9 percent slopes	4.6	0.4%
W	Water	3.3	0.3%
Totals for Area of Interest		**1,142.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eastern Fresno Area, California

AoA—Atwater loamy sand, 0 to 3 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2vnd0
Elevation: 110 to 430 feet
Mean annual precipitation: 11 to 14 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 297 to 328 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Atwater and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Atwater

Setting

Landform: Dunes
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

Ap - 0 to 24 inches: loamy sand
Bt - 24 to 55 inches: sandy loam
C - 55 to 73 inches: loamy sand
2Bqm - 73 to 79 inches: cemented loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 60 to 79 inches to cemented horizon
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.02 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Delhi

Percent of map unit: 5 percent

Landform: Sand sheets
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

San joaquin

Percent of map unit: 4 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rocklin

Percent of map unit: 4 percent
Landform: Fan remnants
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Whitney

Percent of map unit: 2 percent
Landform: Fan remnants
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

DhA—Delhi loamy sand, 0 to 3 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2ss8r
Elevation: 30 to 430 feet
Mean annual precipitation: 9 to 16 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 225 to 310 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Shoulder, toeslope

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandy alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 6 percent
Landform: Depressions on fan remnants
Hydric soil rating: No

Dello

Percent of map unit: 6 percent
Landform: Depressions on fan remnants
Hydric soil rating: Yes

Grangeville

Percent of map unit: 1 percent
Hydric soil rating: No

Hilmar

Percent of map unit: 1 percent
Hydric soil rating: No

Dinuba

Percent of map unit: 1 percent
Hydric soil rating: No

DhB—Delhi loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: hl3h
Elevation: 230 to 400 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delhi and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Shoulder, toeslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Fresno

Percent of map unit: 12 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, steeper slopes

Percent of map unit: 3 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

Dm—Dello loamy sand

Map Unit Setting

National map unit symbol: hl3k
Elevation: 160 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dello and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dello

Setting

Landform: Depressions on alluvial fans, depressions on flood plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 8 inches: loamy sand
Cg1 - 8 to 36 inches: loamy sand
Cg2 - 36 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 36 to 60 inches

Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Minor Components

Unnamed

Percent of map unit: 13 percent
Landform: Depressions on flood plains
Hydric soil rating: Yes

Unnamed, hummock

Percent of map unit: 2 percent
Landform: Levees on flood plains, hummocks on alluvial fans
Hydric soil rating: No

Es—Exeter sandy loam

Map Unit Setting

National map unit symbol: hl3t
Elevation: 200 to 450 feet
Mean annual precipitation: 9 to 14 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 15 inches: sandy loam

Bt - 15 to 30 inches: sandy loam
Bqm - 30 to 40 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 14 percent
Landform: Stream terraces
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions on stream terraces
Hydric soil rating: Yes

Ex—Exeter loam

Map Unit Setting

National map unit symbol: hl3w
Elevation: 200 to 450 feet
Mean annual precipitation: 9 to 14 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 15 inches: loam
Bt - 15 to 30 inches: loam
Bqm - 30 to 40 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: R017XY902CA - Duripan Vernal Pools
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 14 percent
Landform: Stream terraces
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions on stream terraces
Hydric soil rating: Yes

Gh—Grangeville fine sandy loam, water table

Map Unit Setting

National map unit symbol: hl4z
Elevation: 160 to 500 feet

Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 200 to 250 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Grangeville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Recent alluvium derived from granite

Typical profile

Ap - 0 to 8 inches: fine sandy loam
C - 8 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: Yes

Minor Components

Unnamed

Percent of map unit: 15 percent
Landform: Flood plains, alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hc—Hanford sandy loam

Map Unit Setting

National map unit symbol: hl5f
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 16 inches: sandy loam
C - 16 to 72 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Unnamed, channeled

Percent of map unit: 5 percent
Landform: Channels on alluvial fans
Hydric soil rating: No

Hd—Hanford sandy loam, benches

Map Unit Setting

National map unit symbol: hl5g
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans, benches
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 16 inches: sandy loam
C - 16 to 72 inches: sandy loam

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Benches, alluvial fans
Hydric soil rating: No

Unnamed, eroded

Percent of map unit: 5 percent
Landform: Benches, alluvial fans
Hydric soil rating: No

Hm—Hanford fine sandy loam

Map Unit Setting

National map unit symbol: hl5p
Elevation: 200 to 500 feet
Mean annual precipitation: 8 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 16 inches: fine sandy loam
C - 16 to 72 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Minor Components

Unnamed, loam

Percent of map unit: 10 percent
Landform: Flood plains
Hydric soil rating: No

Unnamed, steeper slopes

Percent of map unit: 4 percent
Landform: Benches
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways on flood plains
Hydric soil rating: Yes

PmB—Pollasky sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hl7w
Elevation: 300 to 500 feet
Mean annual precipitation: 11 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pollasky and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pollasky

Setting

Landform: Erosion remnants on terraces
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 8 inches: sandy loam
C - 8 to 39 inches: sandy loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R017XE112CA - GRANITIC 14-18"
Hydric soil rating: No

Minor Components

Unnamed, coarse sandy loam surface

Percent of map unit: 10 percent
Landform: Erosion remnants on terraces
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Landform: Erosion remnants on terraces
Hydric soil rating: No

PnB—Pollasky fine sandy loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hl7z
Elevation: 300 to 500 feet

Mean annual precipitation: 11 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pollasky and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pollasky

Setting

Landform: Erosion remnants on terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 8 inches: fine sandy loam
C - 8 to 39 inches: fine sandy loam
Cr - 39 to 60 inches: bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R017XE112CA - GRANITIC 14-18"
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Erosion remnants on terraces
Hydric soil rating: No

Unnamed, steeper slopes

Percent of map unit: 5 percent
Landform: Erosion remnants on terraces
Hydric soil rating: No

Ra—Ramona sandy loam

Map Unit Setting

National map unit symbol: hl8k
Elevation: 250 to 500 feet
Mean annual precipitation: 9 to 15 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ramona and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting

Landform: Stream terraces, alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 12 inches: sandy loam
BAt - 12 to 24 inches: sandy loam
Bt - 24 to 38 inches: sandy clay loam
C - 38 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: R017XY905CA - Dry Alluvial Fans and Terraces
Hydric soil rating: No

Minor Components

Unnamed, coarse sandy loam
Percent of map unit: 10 percent
Landform: Alluvial fans, stream terraces
Hydric soil rating: No

Unnamed, fine sandy loam
Percent of map unit: 5 percent
Landform: Alluvial fans, stream terraces
Hydric soil rating: No

TzbB—Tujunga loamy sand, 3 to 9 percent slopes

Map Unit Setting
National map unit symbol: hlc2
Elevation: 180 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 225 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Tujunga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tujunga

Setting
Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
A - 0 to 4 inches: loamy sand
C - 4 to 60 inches: stratified sand to loamy sand

Properties and qualities
Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare

Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Unnamed, compact substratum

Percent of map unit: 14 percent
Landform: Benches on flood plains
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions on flood plains
Hydric soil rating: Yes

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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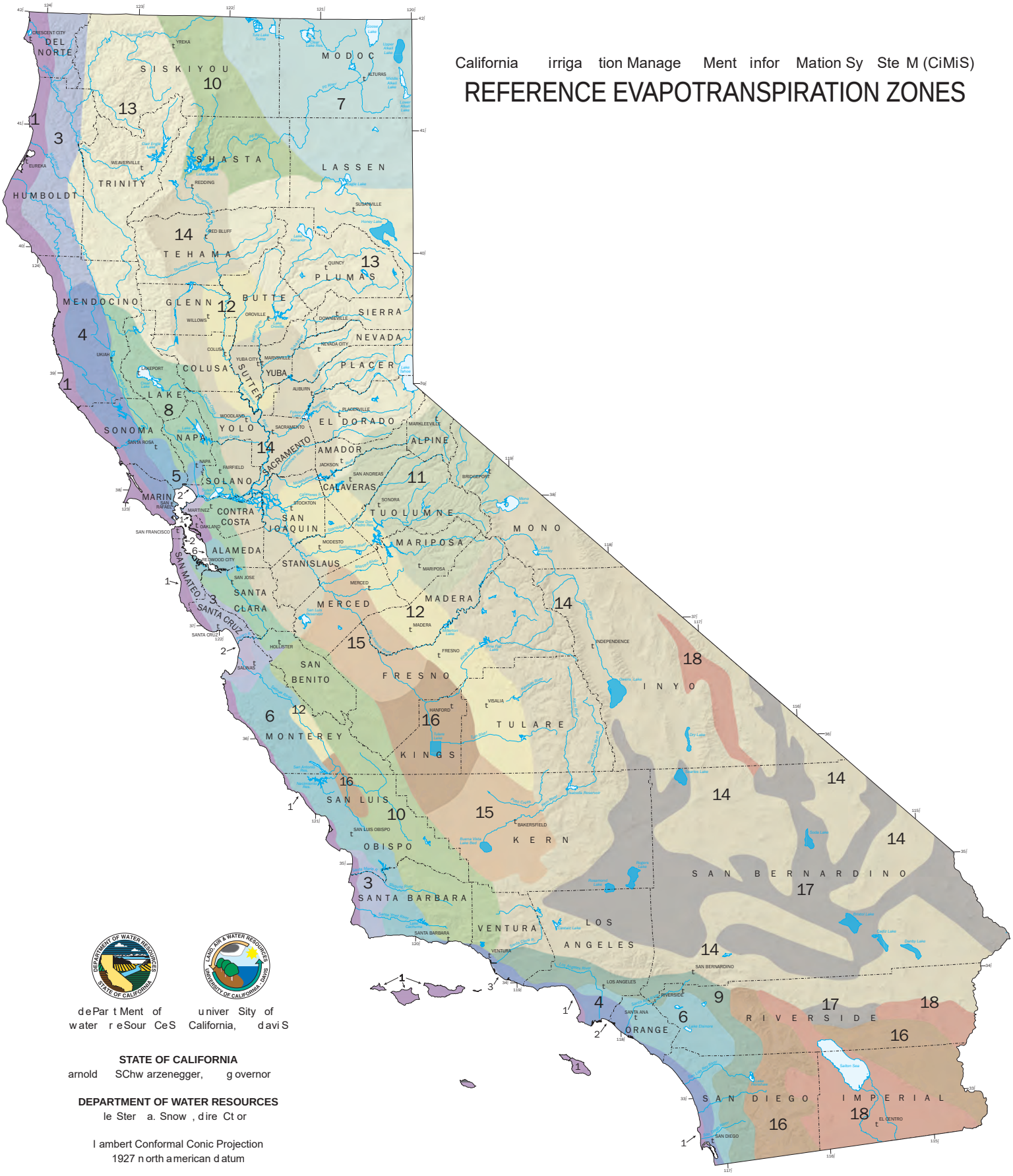
APPENDIX B

CIMIS – EVAPOTRANSPIRATION ZONES

California irriga tion Manage Ment infor Mation Sy Ste M (CiMiS)

REFERENCE EVAPOTRANSPIRATION ZONES



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Reference EvapoTranspiration (ETo) Zones

1 COASTAL PLAINS HEAVY FOG BELT lowest et o in California, characterized by dense fog

2 COASTAL MIXED FOG AREA less fog and higher et o than zone 1

3 COASTAL VALLEYS & PLAINS & NORTH COAST MOUNTAINS more sunlight than zone 2

4 SOUTH COAST INLAND PLAINS & MOUNTAINS NORTH OF SAN FRANCISCO more sunlight and higher summer et o than zone 3

5 NORTHERN INLAND VALLEYS valleys north of San f ranciaco

6 UPLAND CENTRAL COAST & LOS ANGELES BASIN higher elevation coastal areas

7 NORTHEASTERN PLAINS

8 INLAND SAN FRANCISCO BAY AREA inland area near San Francisco with some marine influence

9 SOUTH COAST MARINE TO DESERT TRANSITION inland area between marine & desert climates

10 NORTH CENTRAL PLATEAU & CENTRAL COAST RANGE cool, high elevation areas with strong summer sunlight; zone has limited climate data & the zones selection is somewhat subjective

11 CENTRAL SIERRA NEVADA mountain valleys east of Sacramento with some influence from delta breeze in summer

12 EAST SIDE SACRAMENTO-SAN JOAQUIN VALLEY low winter & high summer et o with slightly lower et o than zone 14

13 NORTHERN SIERRA NEVADA northern Sierra n evada mountain valleys with less marine influence than zone 11

14 MID-CENTRAL VALLEY, SOUTHERN SIERRA NEVADA, TEHACHAPI & HIGH DESERT MOUNTAINS high summer sunshine and wind in some locations

15 NORTHERN & SOUTHERN SAN JOAQUIN VALLEY slightly lower winter et o due to fog and slightly higher summer et o than zones 12 & 14

16 WESTSIDE SAN JOAQUIN VALLEY & MOUNTAINS EAST & WEST OF IMPERIAL VALLEY

17 HIGH DESERT VALLEYS valleys in the high desert near n evada and a rizona

18 IMPERIAL VALLEY, DEATH VALLEY & PALO VERDE low desert areas with high sunlight & considerable heat advection

Monthly Average Reference Evapotranspiration by ETo Zone (inches/month)

Zone	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	0.93	1.40	2.48	3.30	4.03	4.50	4.65	4.03	3.30	2.48	1.20	0.62	32.9
2	1.24	1.68	3.10	3.90	4.65	5.10	4.96	4.65	3.90	2.79	1.80	1.24	39.0
3	1.86	2.24	3.72	4.80	5.27	5.70	5.58	5.27	4.20	3.41	2.40	1.86	46.3
4	1.86	2.24	3.41	4.50	5.27	5.70	5.89	5.58	4.50	3.41	2.40	1.86	46.6
5	0.93	1.68	2.79	4.20	5.58	6.30	6.51	5.89	4.50	3.10	1.50	0.93	43.9
6	1.86	2.24	3.41	4.80	5.58	6.30	6.51	6.20	4.80	3.72	2.40	1.86	49.7
7	0.62	1.40	2.48	3.90	5.27	6.30	7.44	6.51	4.80	2.79	1.20	0.62	43.3
8	1.24	1.68	3.41	4.80	6.20	6.90	7.44	6.51	5.10	3.41	1.80	0.93	49.4
9	2.17	2.80	4.03	5.10	5.89	6.60	7.44	6.82	5.70	4.03	2.70	1.86	55.1
10	0.93	1.68	3.10	4.50	5.89	7.20	8.06	7.13	5.10	3.10	1.50	0.93	49.1
11	1.55	2.24	3.10	4.50	5.89	7.20	8.06	7.44	5.70	3.72	2.10	1.55	53.1
12	1.24	1.96	3.41	5.10	6.82	7.80	8.06	7.13	5.40	3.72	1.80	0.93	53.4
13	1.24	1.96	3.10	4.80	6.51	7.80	8.99	7.75	5.70	3.72	1.80	0.93	54.3
14	1.55	2.24	3.72	5.10	6.82	7.80	8.68	7.75	5.70	4.03	2.10	1.55	57.0
15	1.24	2.24	3.72	5.70	7.44	8.10	8.68	7.75	5.70	4.03	2.10	1.24	57.9
16	1.55	2.52	4.03	5.70	7.75	8.70	9.30	8.37	6.30	4.34	2.40	1.55	62.5
17	1.86	2.80	4.65	6.00	8.06	9.00	9.92	8.68	6.60	4.34	2.70	1.86	66.5
18	2.48	3.36	5.27	6.90	8.68	9.60	9.61	8.68	6.90	4.96	3.00	2.17	71.6

variability between stations within single zones is as high as 0.02 inches per day for zone 1 and during winter months in zone 13. t he average standard deviation of the et o between estimation sites wihtin a zone for all months is about 0.01 inches per day for the 200 sites used to develop the map.

APPENDIX C

WASTE DISCHARGE REQUIREMENTS ORDER NO. 96-284

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-284

WASTE DISCHARGE REQUIREMENTS FOR DEL REY COMMUNITY SERVICES DISTRICT NEW DOMESTIC WASTEWATER TREATMENT FACILITY FRESNO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Del Rey Community Services District (hereafter Discharger) owns and operates an existing WWTF with a capacity of 0.35 million gallons per day (mgd) that treats domestic and industrial discharges, mostly from fruit processing and packing plants. Domestic wastewater accounted for only about 32% of the combined wastewater flow of 0.41 mgd. The discharge from the existing WWTF is presently regulated by Waste Discharge Requirements (WDRs) Resolution No. 69-263, adopted by the Board in March 1969. Monitoring and Reporting Program No. 69-263 was revised in July 1994.

2. The Discharger submitted a Report of Waste Discharge dated 16 December 1995, and technical information dated 3 September 1996, for its proposal to construct a new domestic Wastewater Treatment Facility (WWTF), hereafter referred to as new domestic WWTF. The new domestic WWTF will be at 11495 East American Avenue in Del Rey. The property (Assessor's Parcel Nos. 350-03-16, -19,-20, and 332-20-07) is owned by the Discharger.

3. The Discharger has been in continuous violation of the five-day effluent Biochemical Oxygen Demand (BOD_5) and average monthly flows since 1985. In August 1989, Cease and Desist Order No. 89-153 (C&D) was adopted by the Board. In April 1991, the matter was referred to the State Attorney General (AG). In November 1992, the AG filed for a preliminary and permanent injunction against the Discharger in Fresno County Superior Court. In October 1993, Judgement Pursuant to Stipulation Case No. 474246-6, was approved by Fresno County Superior Court.

4. In March 1994, the District submitted a long-term improvement plan for construction of separate industrial and domestic WWTFs to permanently resolve its noncompliance. The new domestic WWTF, expected to be completed in December 1996, is the subject of this Order.

5. The design capacity of the new domestic WWTF will be 0.3 million gallons per day (mgd). The WWTF will be designed to treat waste with BOD_5 concentration of 300 mg/l, the maximum strength of typical municipal waste. The wash water generated by three packing plants that wash and pack fresh fruits meets this criteria. These fruit packing plants do not

process fruits or discharge process wastewater. While fruit processing wastewater will not be accepted, domestic waste from fruit process plants will be.

6. The new domestic WWTF will be an extended aeration system consisting of headworks, one aeration basin, a secondary clarifier, three aerobic digesters, a sludge dewatering unit (Wedge-Wire), and 19 sludge drying beds. The design parameters are based on influent BOD_5 and TSS concentrations of 300 mg/l. The treatment efficiency for BOD_5 and TSS is estimated to be about 90 percent. Wastewater will be discharged to six evaporation-percolation ponds.

7. The technical information describes the discharge to the evaporation-percolation ponds as follows:

Average dry weather, 30-day design flow: 0.3 mgd

Constituent	Unit	Monthly Average
BOD_5[1]	mg/l	30
TSS	mg/l	30

[1] 5-day, 20°C biochemical oxygen demand.

8. Effluent from the evaporation-percolation ponds will be mixed with irrigation water and recycled on 39 acres of pasture owned by the Discharger. Border irrigation is used on 20 acres of the pasture and sprinklers on the remaining 19 acres. In addition to the pasture, the Discharger anticipates purchasing a 40-acre vineyard (next to the pasture) for water recycling. If the vineyard is purchased, it will be irrigated with a mixture of recycled water and irrigation water via a furrow irrigation system. The Discharger reports that recycled water will not be applied on the vineyard during harvest. During the growing season, grapes will not contact recycled water.

9. The produced sludge will be used exclusively on-site. Sludge from the aerobic digester will be mechanically dewatered and then dried in beds and applied as a soil amendment on the acreage described in Finding No. 8.

10. The Discharger currently has a source control program, as embodied in Ordinance No. 1996-2 adopted on 1 July 1996, but has not always had one, as evidenced by the enforcement problems summarized in Finding No. 3. The Discharger has a long and poor

history of enforcing the earlier ordinances or otherwise limiting individual waste volume and quality so that it complied with its WDRs. Accordingly, the Board believes closer oversight of implementation of the Ordinance and allocation of WWTF capacity is warranted.

11. The Discharger may modify and utilize the existing WWTF in the future for treatment of industrial wastewater, if needed. The Discharger submitted a Report of Waste Discharge (RWD) in December 1995 to discharge just treated process wastewater at the existing WWTF. However, the Discharger has formally requested that the Board not act on the RWD until further notice. Until the Discharger complies with the Water Code at the existing WWTF by ceasing discharge, complying with Order No. 69-263, or complying with revised WDRs, Order No. 69-263 and associated enforcement shall remain in effect.

12. The new domestic WWTF is in Section 4, T15S, R22E, MDB&M, with surface water drainage toward McCall Ditch and Garfield Ditch, as shown in Attachment A, which is attached hereto and part of this Order by reference. The site lies within the Consolidated Hydrologic Area (No. 551.70), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

13. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition,* (hereafter Basin Plan) designates beneficial uses and contains water quality objectives for all waters of the basin. These requirements implement the Basin Plan.

14. McCall and Garfield ditches were constructed to flow southwest along old alignments of Collins Creek and the Kings River. The Basin Plan does not designate beneficial uses for the constructed ditches, however, it does group the natural water bodies in the valley floor as Valley Floor Waters. The beneficial uses of Valley Floor Waters are industrial and agricultural supply; water contact and non-contact water recreation; wildlife and warm water habitat; groundwater recharge; and preservation and enhancement of rare and endangered aquatic species. Lacking any information about beneficial uses specific to these ditches, McCall and Garfield ditches are considered to have all these same uses.

15. The beneficial uses of underlying groundwater are domestic, industrial, and agricultural supply.

16. According to the *Soil Survey of Eastern Fresno County*, prepared by the United States Department of Agriculture, Natural Resources Conservation Service, the dominant top soil (within the root zone) is Exeter sandy loam and Exeter loam with soil permeability ranging from 2.5 to 5 inches per hour.

17. In 1990, the Discharger installed a groundwater monitoring network consisting of three upgradient wells (CW-1 through CW-3), three on-site wells (S-1, S-3, and S-4), and three downgradient wells (DS-1, DS-3, and DS-4). On-site wells are between the upgradient and downgradient wells. In addition to monitoring the above-mentioned wells, the Discharger has provided the Board results of samples collected from an on-site agricultural well (Well S-2) and a deep downgradient domestic well (DS-2). The Discharger is in the process of abandoning wells S-2 and DS-2.

    The groundwater monitoring wells CW-2, CW-3, and S-3 are comprised of shallow and deep wells "S" and "D", respectively. Shallow wells are about 12 feet below ground surface (bgs) and deep wells are 30 to 70 feet bgs. The shallow wells have been dry for the last five years. Due to inclusion of the pasture and the vineyard, the Discharger plans to modify its current groundwater monitoring network by installing additional monitoring wells.

18. The Discharger began submitting monthly groundwater monitoring reports in 1992. Based on the reports, depth to the uppermost groundwater in the vicinity of the treatment plant ranges from 30 to 70 feet bgs. Groundwater flow direction is to the south and southwest.

19. The groundwater monitoring reports submitted in early 1992 showed manganese and iron concentrations in the on-site wells at unfiltered concentrations in excess of the State Secondary Maximum Contaminant Levels (MCLs) for drinking water. Beginning in 1993, the samples were filtered and the metal concentrations dropped below MCLs or below detectable concentrations.

20. The March 1996 groundwater monitoring report indicates that iron or manganese was not detected in any well. Nitrate (NO_3) concentrations in the upgradient wells CW-1 and CW-2 were 44 and 41 mg/l, respectively. Nitrate concentrations in the on-site well S-1 was 190 mg/l; S-3 was 53 mg/l; and S-4 was 32 mg/l. The downgradient wells DS-2 and DS-4 contained nitrate concentrations of 1.6 and 35 mg/l, respectively. However, nitrate was not detected in downgradient wells DS-1 and DS-3. The average conductivity (specific electrical conductance at 25°C, also EC) in the upgradient and the downgradient wells was 270 μmhos/cm and 540 μmhos/cm, respectively.

21. Annual precipitation in the area is about 10 inches and average annual pan evaporation is about 65 inches.

22. The proposed discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16. From the monitoring well data, some mineral increase occurs between the upgradient and downgradient wells, but the

discharge, if in compliance with this Order, will not have an adverse impact on the beneficial uses of the underlying groundwater.

23. Storm water at the new domestic WWTF will be contained on-site, so there is no storm water discharge from the WWTF to a surface water of the United States that is subject to storm water regulations promulgated pursuant to Section 402(p) of the Clean Water Act.

24. The California Department of Health Services (DHS) has established statewide water recycling criteria in Title 22, California Code of Regulations (CCR), Section 60301, et seq. (hereafter Title 22) for the use of recycled water and has developed guidelines for specific uses.

25. In February 1996, a Memorandum of Agreement (MOA) was adopted between the State Water Resources Control Board (SWRCB) and DHS. The MOA provides coordinated review and approval of reclamation projects (now referred to as recycling projects) to assure that respective authorities of the two departments are exercised cohesively. Pursuant to the MOA, dischargers who recycle or propose to recycle water must file an engineering report and thoroughly describe the recycling project. In the process of issuing water recycling requirements, the Board must consider comments and recommendations of DHS. The Discharger submitted a water recycling report and the report was reviewed by DHS. Comments provided by DHS have been considered and incorporated in this Order.

26. On 19 December 1995, the Del Rey Community Services District adopted a mitigated Negative Declaration for the new project in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines. Based on Board review of the document, the project as approved will not have a significant impact on water quality if operated in accordance with the proposed Order.

27. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

28. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Del Rey Community Services District, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface water drainage courses is prohibited.

2. Bypass or overflow of untreated or partially treated waste is prohibited.

3. Discharge of waste classified as 'hazardous' or 'designated', as defined in Sections 2521(a) and 2522(a) of Title 23, CCR, Section 2510, et seq., (Chapter 15) is prohibited.

4. Discharge of sludge classified as 'hazardous', as described in Title 22, CCR, Division 4.5, Chapter 11, Article 3, is prohibited.

B. Discharge Specifications

1. The monthly average daily dry weather flow shall not exceed 0.30 million gallons.

2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the WWTF, evaporation-percolation ponds, and water recycling areas.

3. As a means of discerning that ponds are in compliance with Discharge Specification No. B.2, the dissolved oxygen content in the upper zone (1 foot) of wastewater in evaporation-percolation ponds shall not be less than 1.0 mg/l.

4. The WWTF and evaporation-percolation ponds shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

5. The effluent from the WWTF, prior to discharge to evaporation-percolation ponds, shall not exceed the following limits:

Constituent	Units	Monthly Average	Daily Maximum
BOD_5[1]	mg/l	40	80
Suspended Solids	mg/l	40	80
Settleable Solids	ml/l	0.2	0.5

[1] 5-day, 20° Celsius biochemical oxygen demand.

6. Ponds shall not have a pH less than 6.5 or greater than 9.5.

7. Ponds shall be managed to prevent breeding of mosquitos. In particular:

   a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

   b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

8. Public contact with wastewater shall be precluded through such means as fences and signs, or acceptable alternatives.

9. Evaporation-percolation ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the nonirrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. Freeboard shall never be less than two feet (measured vertically).

10. On or about 1 October of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specification B.9, above.

C. Recycled Water Specifications

1. Recycled water shall meet the criteria contained in Title 22, CCR, Section 60301, et seq., and, if used in construction, the most current edition of "Guidelines for Use of Reclaimed Water for Construction Purposes," published by the California Department of Health Services.

2. The direct reuse of effluent shall be limited to construction purposes, irrigation of nonfood chain crops, animal feed crops not used to feed lactating dairy animals, and the vineyard as described in Finding No. 8. Other uses for recycled water shall be subject to the prior approval of the Executive Officer.

3. Application of recycled water to the farm land shall not exceed what is reasonably necessary for the vineyard (if utilized) and the pasture, considering both soil and climate. The nutrient loading rate of the crop, including the nutrient value of organic

and chemical fertilizers and of solids and recycled water, shall not exceed the crop demand. Similarly, the hydraulic loading of the area shall not exceed the crop demand plus a reasonable leaching factor.

4. All areas where recycled water is to be used shall be posted with conspicuous signs with the following wording in a size that can be clearly read by the public: "RECYCLED WATER--DO NOT DRINK--WASH THROUGHLY WITH SOAP." Each sign shall display the international symbol shown on Attachment B.

5. No physical connection shall exist between recycled water piping and any domestic water supply or domestic well, or between recycled water piping and any irrigation well that does not have air gap or reduced pressure principle device.

6. Standing water shall not be present on any portion of the land irrigated with recycled water 24 hours after each application has ceased.

7. The pasture and the vineyard shall be managed so as to prevent breeding of mosquitoes. More specifically:

   a. Tail water must be returned and the applied wastewater must infiltrate completely within a 48-hour period.

   b. Low-pressure and unpressurized pipelines accessible to mosquitoes shall not be used to store wastewater.

8. Irrigation or impoundment of wastewater shall not occur within 150 feet of any domestic well or within 50 feet of any irrigation well unless it is demonstrated to the satisfaction of the Executive Officer that a shorter distance is justified.

D. Sludge Disposal Specifications

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner that is consistent with the requirements of Chapter 15 and approved by the Executive Officer.

2. Any proposed change in sludge use or disposal practice from disposal on Discharger own farm land shall be reported to the Executive Officer **at least 90 days in advance** of the change.

3. Use and disposal of sewage sludge shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards in 40 CFR 503.

   If the State Water Resources Control Board and the Regional Water Quality Control Board are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards.

4. Sludge applied to the Discharger's pasture or vineyard shall be Class A or B with regard to pathogens, as described in 40 CFR 503.32(a) and (b), respectively. The Discharger is encouraged to comply with the standards and time schedules contained in 40 CFR 503 for any off-site disposal of sludge whether or not they have been incorporated into this Order.

5. Sludge application to the vineyard shall be limited to the dormant season.

6. Sludge shall not be applied to soils with, or cause soils to have, a pH of less than 6.5.

7. Sludge shall not be staged or applied within 100 feet of domestic water supply wells or 50 feet of any irrigation well.

8. Sludge shall not be applied to WWTF pond levees.

E. Groundwater Limitations

The discharge, in combination with other sources, shall not cause underlying groundwater to:

1. Contain waste constituents in concentrations statistically greater than background water quality, except for conductivity. The incremental increase in EC over any five-year period shall not exceed 20 μmhos/cm.

F. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program No. 96-284, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

2. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," dated 1 March 1991, which are

attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

3. The Discharger shall maintain and fully implement the source control program of Ordinance No. 1996-2, including timely enforcement actions as appropriate. Proposed changes to source control program of Ordinance No. 1996-2 shall be provided to the Board at least **30 days** in advance of the District's consideration of the change.

4. At least **120 days** in advance of the District's acceptance of any new industrial discharge, the District shall evaluate the proposed discharge and submit a technical report to the Board that discusses in detail the impact of the discharge on the WWTF and how it will assure the additional discharge will not cause the WWTF to exceed its design capacity. The technical report must be prepared by a qualified California registered civil engineer. The report is subject to approval of the Executive Officer prior to any new industrial connection.

5. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

   To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

6. Prior to initiating discharge, the Discharger shall submit a written report and certify whether the new domestic WWTF has been constructed as designed and is fully operable, and that discharge includes only the waste described in Finding No.5.

7. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders

requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. A copy of this Order shall be kept at the new domestic WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.

9. The Board will review this Order periodically and will revise requirements when necessary.

I, JAMES R. BENNETT, Interim Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 December 1996.

JAMES R. BENNETT, Interim Executive Officer

RA:ra/rac

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 96-284
FOR
DEL REY COMMUNITY SERVICES DISTRICT
NEW DOMESTIC WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

The Discharger shall implement this monitoring on the first day of operation of the new domestic Wastewater Treatment Facility (WWTF). The groundwater monitoring part of this program duplicates some of the requirements of Monitoring and Reporting Program (MRP) No. 69-263 (revised July 1994). The groundwater monitoring requirements of this MRP shall satisfy the requirements of MRP No. 69-263.

INFLUENT MONITORING

Influent samples shall be collected at the inlet of the headworks of the new domestic WWTF at approximately the same time as effluent samples. Influent monitoring shall include at least the following:

Constituents	Units	Type of Sample	Sampling Frequency
Flow	mgd	Continuous	Daily
pH	pH units	Grab	Weekly
BOD_5[1]	mg/l	24-hr Composite	2/Month
Total Suspended Solids	mg/l	24-hr Composite	2/Month

[1] Five-day, 20° Celsius biochemical oxygen demand.

EFFLUENT MONITORING

Effluent samples from the new WWTF shall be collected just prior to discharge to the evaporation-percolation ponds and should be representative of the volume and nature of the discharge. Time of collection of composite and grab samples shall be recorded. Effluent monitoring shall include at least the following:

Constituents	Units	Type of Sample	Sampling Frequency[1]
Settleable Solids	ml/l	Grab	Weekly
BOD_5[2]	mg/l	24-hr composite	Weekly

Constituents	Units	Type of Sample	Sampling Frequency[1]
Total Suspended Solids	mg/l	24-hr composite	Weekly
Conductivity	μmhos/cm	24-hr composite	Monthly
Total Dissolved Solids	mg/l	8-hr composite	Monthly
Total Nitrogen	mg/l	Grab	Quarterly
Standard Minerals[3]	mg/l	Grab	Quarterly

1 If results of monitoring a pollutant appear to violate effluent limitations, but monitoring frequency is not sufficient to validate violation (e.g., the monthly average for BOD), or indicate a violation and potential upset of the treatment process (e.g., less than minimum D.O.), the frequency of sampling shall be increased to confirm the magnitude and duration of violation, if any, and aid in identification and resolution of the problem.

2 Five-day, 20° Celsius biochemical oxygen demand.

3 Standard mineral analyses shall include bicarbonate, calcium, carbonate, chloride, fluoride, iron, magnesium, nitrate (NO_3), potassium, sodium, sulfate, and total phosphorous.

SLUDGE MONITORING

Annually, the Discharger shall collect and analyze representative **composite** sludge samples from the treatment facilities prior to final disposal. Sampling and analytical procedures shall be in accordance with the criteria specified in 22 CCR and by the U.S. EPA in POTW Sludge Sampling and Analysis Guidance Document, August 1989, and *test methods for Evaluating Solid Waste, Physical Chemical Methods (SW-846)*. Sludge samples shall be analyzed for the following total and soluble metal concentrations.

Chromium	Cadmium	Copper	Lead	Iron	Manganese
Cobalt	Nickel	Silver	Zinc	Mercury	

By 28 February of each year, the Discharger shall submit a technical report including the analytical results, area of application and application rates, quantity of sludge disposed, and sludge disposal procedures relative to Department of Health Services' Manual of Good Practices for Landspreading of Sewage Sludge and EPA's *Process Design Manual for Land Application of Municipal Sludges* and Title 23, California Code of Regulations, Section 2511(f). If sludge is applied to the pasture or vineyard, the report shall also indicate types of crops grown.

Sampling records shall be obtained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

POND MONITORING

Pond water monitoring shall include the following:

Constituent	Unit	Type of Sample	Frequency
Dissolved Oxygen[1]	mg/l	Grab	Daily
pH	pH Units	Grab	Daily
Freeboard[2]	feet	Observation	Weekly

1 Samples shall be collected at a depth of one foot from each evaporation-percolation pond, opposite the inlet, and analyzed for dissolved oxygen. Samples shall be collected between 0800 and 0900 hours.

2 Freeboard shall be monitored on the evaporation-percolation ponds in use to the nearest foot.

In addition, the Discharger shall inspect the condition of the evaporation-percolation ponds once per week and write visual observations in a bound log book. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the pond surface and their location; whether burrowing animals or insects are present; and the color of the pond (e.g., dark sparkling green, dull green, yellow, grey, tan, brown, etc.). A copy of the entries made in the log during each month shall be submitted along with the monitoring report the following month. Where the O&M manual indicates remedial action is necessary, the Discharger shall briefly explain in the transmittal what action has been taken or is scheduled to be taken.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the District water supply can be obtained. Water supply monitoring shall include at least the following:

Constituents[1]	Units	Sampling Frequency
Conductivity	μmhos/cm	Quarterly
Standard Minerals[2]	mg/l	Annually

1 Constituents shall be reported as a flow weighted average from a representative number of supply wells and the monitoring report shall include copies of supporting calculations.

2 Standard mineral analyses shall include bicarbonate, calcium, carbonate, chloride, fluoride, iron, magnesium, manganese, nitrate (NO_3), potassium, sodium, sulfate, total dissolved solids, and total phosphorous.

GROUNDWATER MONITORING

By 14 February 1997, the Discharger shall submit a work plan for the proposed expanded groundwater monitoring network (Finding No.16). The modified network shall consist of one or more background monitoring wells and three or more downgradient wells. All well locations and construction features are subject to the prior approval of the Executive Officer. The well network must be sufficient to monitor potential impacts of the disposal operation on the uppermost ground water aquifer at the property boundaries. By (90 days), the Discharger shall implement the approved monitoring network.

The downgradient wells shall constitute "points of compliance (POC)". In conjunction with background monitoring, monitoring of POC's will enable one to determine the areal and vertical extent of noncompliance with water quality protection standards. The groundwater surface elevation (in feet and hundredths, M.S.L.) in all wells shall be measured on a quarterly basis and used to determine the gradient and direction of groundwater flow. This information shall be displayed on a water flow net diagram for the site. Water samples shall be collected from wells in the approved monitoring network an analyzed as follows:

Constituent	Units	Type of sample	Sampling Frequency
Total Coliform Organisms	MPN/100 ml	Grab	Semi-annually
Conductivity	μmhos/cm	Grab	Semi-annually

Constituent	Units	Type of sample	Sampling Frequency
pH	pH units	Grab	Semi-annually
Standard Minerals[1]	mg/l	Grab	Semi-annually

[1] Standard mineral analyses shall include bicarbonate, calcium, carbonate, chloride, fluoride, iron, magnesium, manganese, nitrate (NO_3), potassium, sodium, sulfate, total dissolved solids, and total phosphorous.

If the Discharger, through a verification monitoring program, or the Board verifies that water quality protection standards have been exceeded at or beyond the POC's, the Discharger shall notify the Board, or acknowledge the Board's findings, and submit a technical report **within 90 days**. The report must contain a plan and time schedule for implementing a corrective action program designed to achieve compliance with water quality protection standards.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the Discharger complies with waste discharge requirements.

Daily, weekly, or monthly monitoring reports shall be submitted to the Board by the **20th day of the following month.** Quarterly monitoring results shall be submitted by the **20th day of the month following each calendar quarter.** Annual monitoring results shall be submitted by **28 February of each year.**

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

By **28 February of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names, titles, certificate grade (if any) and general responsibilities of persons operating and maintaining the wastewater treatment plant.

b. The names and telephone numbers of persons to contact regarding the new domestic WWTF for emergency and routine situations.

c. A certified statement of when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who did the calibration (Standard Provision C.4).

d. A statement whether the current operation and maintenance manual, and contingency plan, reflect the new domestic WWTF plant as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Board with tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

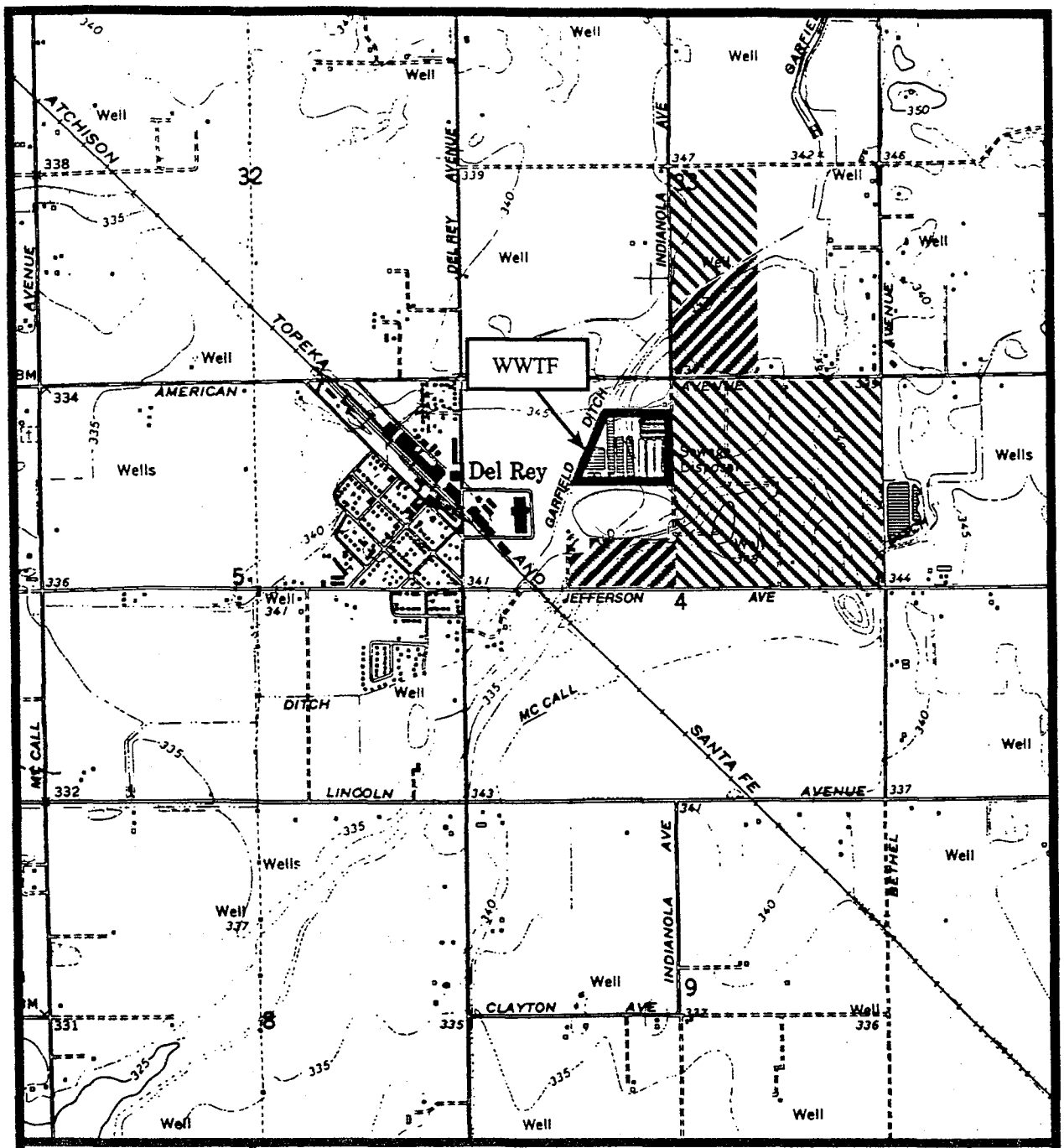
All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
JAMES R. BENNETT, Interim Executive Officer

6 December 1996
(Date)

RA:ra/rac



ATTACHMENT A

Vicinity Map

DEL REY COMMUNITY SERVICE DISTRICT
NEW DOMESTIC WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

NE 1/4 Section 4, NE 1/4 of NW 1/4 Section 4,
T15S, R22E, and W 1/2 of SE 1/4 Section 33,
T14S, R22E, MDB&M
Sanger, 7 1/2' USGS Quad, 1969
(Not to Scale)

ATTACHMENT B

INFORMATION SHEET

DEL REY COMMUNITY SERVICES DISTRICT
NEW DOMESTIC WWTF
FRESNO COUNTY

The Del Rey Community Services District submitted a Report of Waste Discharge and technical information for a proposed domestic Wastewater Treatment Facility (hereafter new domestic WWTF). The new domestic WWTF will be next to the existing WWTF at 11495 East American Avenue in Del Rey.

The District operates a WWTF of 0.35 million gallons per day (mgd) capacity overloaded by industrial discharges, mostly fruit processing and packing plants. The Discharger has been in continuous violation of the five-day effluent Biochemical Oxygen Demand (BOD_5) and average monthly flows since 1985. In 1989, Cease and Desist Order No. 89-153 (C&D) was adopted by the Board. Due to violations of the C&D, in April 1991 the matter was referred to the State Attorney General (AG). In 1992, the AG filed for a preliminary and permanent injunction against the Discharger in Fresno County Superior Court. In October 1993, Judgment Pursuant to Stipulation Case No. 474246-6, was approved by Fresno County Superior Court.

In 1993, the District began to implement a number of interim corrective measures toward achieving compliance until a new treatment facility could be constructed. The interim measures significantly enhanced treatment, but the discharger continued to be in violation of the WDRs. The Discharger submitted a long-term improvement plan in 1994 and proposed construction of separate industrial (raisin packers, only) and domestic wastewater treatment facilities to permanently resolve violations. However Del Rey Packing Company and Enoch Packing Company, the remaining packers in 1995, rejected participation and submitted proposals for land reclamation. In August 1996, the Board adopted waste discharge requirements for Del Rey and Enoch Packing companies.

The Discharger included a source control program in its most recent ordinance, adopted in July 1996. Due to the Discharger's poor history of enforcing the earlier ordinances or otherwise limiting individual waste volume, the Order requires the Discharger to fully implement the source control program of the new ordinance and that any proposed amendment to the existing source control program must be reported to the Board in advance.

Construction of the new domestic WWTF will likely be completed in December 1996. The new domestic WWTF will be an extended aeration system with a design capacity of 0.3 million gallons per day (mgd). The WWTF will be designed to treat only waste with BODs not to exceed 300 mg/l. The design parameters of the new WWTF are based on influent BOD_5 and total suspended solids (TSS) concentrations of 300 mg/l.

This Order requires the District to submit a technical report at least 120 days in advance of the District's acceptance of any industrial discharge that discusses the impact of the discharge on the WWTF. The report is required to ensure that organic constituents discharged into the WWTF do not exceed the design capacity of the WWTF and must receive approval of the Executive Officer before the District allows connection.

The proposed order is independent of regulation of the existing WWTF and Order No. 69-263 that regulates discharge from that WWTF. All enforcement actions are predicated on violations of Order No. 69-263, and all violations will be remedied when the new domestic WWTF is on-line, industrial contributors cease discharge, and discharge from the existing WWTF cease. After that happens, Order No. 69-263 can be rescinded.

Discharge will be to six evaporation-percolation ponds. Effluent from the evaporation-percolation ponds will mix with irrigation water and be recycled on 39 acres of pasture owned by the Discharger. In addition to the pasture, the Discharger anticipates purchasing a 40 acre-vineyard (next to the pasture) for wastewater recycling. Border irrigation is used on 20 acres of the pasture and sprinkler irrigation on the remaining 19 acres. If the vineyard is purchased, it will be irrigated with a mixture of recycled water and irrigation water via a furrow irrigation system.

In February 1996, a Memorandum of Agreement (MOA) was adopted between the State Water Resources Control Board (SWRCB) and DHS. The MOA provides coordinated review and approval of recycling projects to assure that respective authorities of the two departments are exercised cohesively. The Discharger submitted a water recycling report and the report was reviewed by DHS. This Order includes specifications for the recycled water. Comments provided by DHS have been considered and incorporated in the specifications

In 1990, the Discharger installed a groundwater monitoring network and began to submit monitoring reports in 1992. Due to inclusion of the pasture and the vineyard, the Discharger plans to modify its current groundwater monitoring network by installing additional monitoring wells. This Order requires the Discharger to submit a work plan for the modified groundwater monitoring network within 30 days after adoption of this Order.

Based on the groundwater monitoring reports, depth to the upper most groundwater in the vicinity of the treatment plant range from 30 to 70 feet bgs. Groundwater flow direction is to the south and southwest. The most recent groundwater monitoring reports (March 1996) show that the average EC in the upgradient and downgradient wells were 270 and 540 μmhos/cm, respectively.

According to the Soil Survey of Eastern Fresno County, the dominant top soil (within the root zone) is Exeter sandy loam and Exeter loam with soil permeability ranging from 2.5 to 5 inches.

On 19 December 1995, the Del Rey Community Services District adopted a mitigated Negative Declaration for the project in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the State CEQA guidelines. The project as approved will not have a significant impact on water quality if operated in accordance with the proposed Order.

RA:ra/rac:12/6/96

APPENDIX D

WATER BALANCE

Del Rey Community Services District
Water Balance Assuming Percolation and Agricultural Irrigation
0.13 MGD

DESIGN DATA	
Parameter	**Value**
Average Design Flow, MGD	0.13
Irrigation Efficiency, %	70%
Treatment Pond Area, Acres	1.40
Lined Storage Pond Area, Acres	0.96
Unlined Storage/Percolation Pond Area, Acres	16.32
Effluent Reclamation Area, Acres	20
Percolation Rate, inch/hr	0

Month	Sewage Flow		Evaporation (acre-feet)		Precipitation Ponds	Irrigation Disposal Areas	Pond Percolation	Balance (Acre-feet)	
	(MGD)	(acre-feet)	Treatment Ponds	Storage Ponds	(acre-feet)	(acre-feet)[2]	(Acre-ft)[3]	Monthly	Cumulative[5]
October	0.13	12.4	2.9	0.4	0.2	10.3	0.0	-1.1	0.0
November	0.13	12.0	2.8	0.2	0.3	4.2	0.0	5.0	5.0
December	0.13	12.4	2.9	0.1	0.5	1.1	0.0	8.7	13.7
January	0.13	12.4	2.9	0.1	0.6	0.1	0.0	9.8	23.6
February	0.13	11.2	2.6	0.2	0.6	2.9	0.0	6.0	29.6
March	0.13	12.4	2.1	0.4	0.6	6.5	0.0	3.9	33.5
April	0.13	12.0	2.5	0.5	0.3	12.3	0.0	-3.0	30.5
May	0.13	12.4	3.0	0.7	0.1	18.5	0.0	-9.7	20.8
June	0.13	12.0	3.2	0.8	0.0	20.7	0.0	-12.6	8.2
July	0.13	12.4	3.5	0.8	0.0	22.1	0.0	-14.1	0.0
August	0.13	12.4	3.5	0.7	0.0	19.9	0.0	-11.8	0.0
September	0.13	12.0	3.2	0.6	0.0	15.0	0.0	-6.7	0.0
		145.62	35.0	5.5	3.2	133.8	0.0		

[1] Water contribution by rainfall over the pond surface areas

[2] Effluent Disposal area will consist of 20 acres of irrigable areas.

[3] Irrigation requirements based on ET values for the San Joaquin Valley.

[4] Percolation assumes a rate of 0.00 inch per day.

[5] Monthly excess (deficit) of water. Equal to the sum of sewage flow and precipitation less water loss through evaporation and percolation.

[6] Cumulative Balance.

Del Rey Community Services District
Water Balance Assuming Percolation and Agricultural Irrigation
0.3 MGD

DESIGN DATA	
Parameter	**Value**
Average Design Flow, MGD	0.300
Irrigation Efficiency, %	70%
Treatment Pond Area, Acres	1.40
Lined Storage Ponds, Acres	9.30
Unlined Storage/Percolation Pond Area, Acres	4.20
Effluent Reclamation Area, Acres	20
Percolation Rate, inch/day	2.3

Month	Sewage Flow		Evaporation (acre-feet)		Precipitation Ponds	Irrigation Reclamation Areas	Unlined Pond Percolation	Balance (Acre-feet)	
	(MGD)	(acre-feet)	Treatment Ponds	Storage Ponds	(acre-feet)	(acre-feet)[2]	(Acre-ft)[3]	Monthly	Cumulative[5]
October	0.30	28.5	2.9	3.7	0.7	10.1	0.0	12.5	12.5
November	0.30	27.6	2.8	2.0	1.5	4.2	0.0	20.0	32.5
December	0.30	28.5	2.9	1.3	2.2	1.1	0.0	25.4	57.9
January	0.30	28.5	2.9	1.3	2.8	0.1	14.0	13.0	70.9
February	0.30	25.8	2.6	1.0	2.5	2.9	21.8	0.0	70.9
March	0.30	28.5	2.1	5.0	2.5	6.5	17.4	0.0	71.0
April	0.30	27.6	2.5	7.1	1.4	12.3	7.1	0.0	71.0
May	0.30	28.5	3.0	3.0	0.5	18.5	4.6	0.0	71.0
June	0.30	27.6	3.2	3.3	0.2	20.7	0.6	0.0	71.0
July	0.30	28.5	3.5	7.9	0.0	22.1	25.0	-29.9	41.0
August	0.30	28.5	3.5	7.1	0.0	19.9	25.0	-26.9	14.1
September	0.30	27.6	3.2	5.4	0.2	15.0	24.2	-19.9	0.0
		336.04	35.0	48.2	14.5	133.6	139.6	-5.8	

[1] Water contribution by rainfall over the pond surface areas

[2] Effluent Disposal area will consist of 20 acres of irrigable areas.

[3] Irrigation requirements based on ET values for the San Joaquin Valley.

[4] Percolation assumes a rate of 2.3 inch per day.

[5] Monthly excess (deficit) of water. Equal to the sum of sewage flow and precipitation less water loss through evaporation and percolation.

[6] Cumulative Balance.

Del Rey Community Services District
Precipitation and Evaporation Reference Data

Month	Days	Crop Coefficients (kc)[1]			Ref Evap (inches)	Precipitation (inches)		Eff. Precipitation (inches)[5]
		Ponds	Alfalfa	Citrus	ETo[2]	Normal[3]	100-yr[4]	
October	31	1.1	1.00	0.80	4.34	0.53	0.79	0.08
November	30	1.1	1.00	0.80	2.40	1.13	1.68	0.62
December	31	1.1	1.00	0.80	1.55	1.64	2.44	1.07
January	31	1.1	1.00	0.80	1.55	2.09	3.11	1.51
February	28	1.1	1.00	0.80	2.52	1.90	2.83	1.30
March	31	1.1	1.00	0.59	4.03	1.89	2.82	1.30
April	30	1.1	1.00	0.71	5.70	1.03	1.53	0.53
May	31	1.1	1.00	0.83	7.75	0.36	0.54	0.00
June	30	1.1	1.00	0.90	8.70	0.16	0.24	0.00
July	31	1.1	1.00	0.96	9.30	0.01	0.01	0.00
August	31	1.1	1.00	0.96	8.37	0.01	0.01	0.00
September	30	1.1	1.00	0.91	6.30	0.15	0.22	0.00
Total					**62.51**	**10.90**	**16.24**	

[1] Irrigation with Reclaimed Municipal Wastewater. A guidance manual. PettyGrove and Asano, 1986.

[2] California Irrigation Management Information System (ET_0 Map)

[3] National Climate Data Center. Normal Precipitation (1971-2000).

[4] Rainfall-Depth Duration Frequency for California. California Dept. of Water Resources, Division of Planning, February 1981.

[5] Effective Precipitation: FAO Irrigation Water Management, Training Manual No. 3.

Appendix B

Air Emission Output Files

Del Rey Sewer Improvements Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Del Rey Sewer Improvements
Construction Start Date	11/8/2026
Lead Agency	Del Rey CSD
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70000
Precipitation (days)	28.4000
Location	36.65777905493826, -119.59634347246468
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2539
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.39

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	0.60000	Mile	3.00000	0.00000	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.05044	0.89318	7.21658	11.4138	0.01495	0.27917	0.10881	0.38798	0.25684	0.02550	0.28234	—	1,735.97	1,735.97	0.06882	0.01786	0.37238	1,743.38
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.64363	3.07682	25.2793	30.0095	0.06007	1.08662	3.36167	4.44829	0.99970	0.38590	1.38560	—	6,679.27	6,679.27	0.27098	0.06302	0.01814	6,704.84
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.60001	0.50644	4.11434	5.19424	0.01068	0.16427	0.53756	0.70183	0.15113	0.06225	0.21338	—	1,170.98	1,170.98	0.04724	0.01096	0.05052	1,175.48
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10950	0.09242	0.75087	0.94795	0.00195	0.02998	0.09811	0.12808	0.02758	0.01136	0.03894	—	193.870	193.870	0.00782	0.00181	0.00836	194.615

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.05044	0.89318	7.21658	11.4138	0.01495	0.27917	0.10881	0.38798	0.25684	0.02550	0.28234	—	1,735.97	1,735.97	0.06882	0.01786	0.37238	1,743.38
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.64363	3.07682	25.2793	30.0095	0.06006	1.08662	3.36167	4.44829	0.99970	0.38590	1.38560	—	6,679.27	6,679.27	0.27098	0.06302	0.01814	6,704.84
2027	3.49286	2.94418	23.5761	29.8274	0.06007	0.98645	3.36167	4.34812	0.90755	0.38590	1.29345	—	6,675.48	6,675.48	0.27097	0.06293	0.01639	6,701.03
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.27967	0.23592	1.93610	2.29531	0.00450	0.08490	0.26192	0.34682	0.07811	0.03007	0.10818	—	501.548	501.548	0.02027	0.00476	0.02404	503.497
2027	0.60001	0.50644	4.11434	5.19424	0.01068	0.16427	0.53756	0.70183	0.15113	0.06225	0.21338	—	1,170.98	1,170.98	0.04724	0.01096	0.05052	1,175.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.05104	0.04306	0.35334	0.41889	0.00082	0.01549	0.04780	0.06329	0.01425	0.00549	0.01974	—	83.0370	83.0370	0.00336	0.00079	0.00398	83.3596
2027	0.10950	0.09242	0.75087	0.94795	0.00195	0.02998	0.09811	0.12808	0.02758	0.01136	0.03894	—	193.870	193.870	0.00782	0.00181	0.00836	194.615

2.2.2. Onsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.97354	0.81805	7.17958	10.7806	0.01495	0.27917	0.00000	0.27917	0.25684	0.00000	0.25684	—	1,619.50	1,619.50	0.06569	0.01314	0.00000	1,625.05
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.52413	2.96125	25.1750	29.0994	0.05997	1.08644	3.18150	4.26794	0.99953	0.34353	1.34305	—	6,494.74	6,494.74	0.26346	0.05269	0.00000	6,517.03
2027	3.38052	2.84058	23.4803	28.9835	0.05998	0.98627	3.18150	4.16777	0.90737	0.34353	1.25090	—	6,494.84	6,494.84	0.26346	0.05269	0.00000	6,517.13
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.26956	0.22651	1.92864	2.22128	0.00449	0.08489	0.24780	0.33268	0.07810	0.02676	0.10485	—	486.388	486.388	0.01973	0.00395	0.00000	488.058

2027	0.57849	0.48549	4.10002	5.03271	0.01068	0.16426	0.50431	0.66856	0.15112	0.05445	0.20557	—	1,136.94	1,136.94	0.04612	0.00922	0.00000	1,140.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.04919	0.04134	0.35198	0.40538	0.00082	0.01549	0.04522	0.06071	0.01425	0.00488	0.01914	—	80.5272	80.5272	0.00327	0.00065	0.00000	80.8035
2027	0.10557	0.08860	0.74825	0.91847	0.00195	0.02998	0.09204	0.12201	0.02758	0.00994	0.03752	—	188.233	188.233	0.00764	0.00153	0.00000	188.879

2.2.3. Offsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.07690	0.07513	0.03699	0.63321	0.00000	0.00000	0.10881	0.10881	0.00000	0.02550	0.02550	—	116.473	116.473	0.00312	0.00472	0.37238	118.330
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.11950	0.11557	0.10425	0.91007	0.00009	0.00018	0.18017	0.18034	0.00018	0.04237	0.04255	—	184.531	184.531	0.00752	0.01033	0.01814	187.815
2027	0.11234	0.10360	0.09583	0.84394	0.00009	0.00018	0.18017	0.18034	0.00018	0.04237	0.04255	—	180.643	180.643	0.00751	0.01024	0.01639	183.899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.01011	0.00941	0.00746	0.07404	0.00001	0.00001	0.01413	0.01414	0.00001	0.00332	0.00333	—	15.1595	15.1595	0.00054	0.00081	0.02404	15.4390
2027	0.02152	0.02095	0.01432	0.16153	0.00001	0.00001	0.03326	0.03327	0.00001	0.00780	0.00781	—	34.0474	34.0474	0.00112	0.00174	0.05052	34.6433
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00184	0.00172	0.00136	0.01351	< 0.000005	< 0.000005	0.00258	0.00258	< 0.000005	0.00061	0.00061	—	2.50983	2.50983	0.00009	0.00013	0.00398	2.55611
2027	0.00393	0.00382	0.00261	0.02948	< 0.000005	< 0.000005	0.00607	0.00607	< 0.000005	0.00142	0.00143	—	5.63694	5.63694	0.00019	0.00029	0.00836	5.73560

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2026)

3.1.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43764	0.36774	3.21774	3.47584	0.00453	0.18920	—	0.18920	0.17407	—	0.17407	—	490.424	490.424	0.01989	0.00398	—	492.107
Dust From Material Movement	—	—	—	—	—	—	0.53025	0.53025	—	0.05725	0.05725	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01439	0.01209	0.10579	0.11427	0.00015	0.00622	—	0.00622	0.00572	—	0.00572	—	16.1235	16.1235	0.00065	0.00013	—	16.1788
Dust From Material Movement	—	—	—	—	—	—	0.01743	0.01743	—	0.00188	0.00188	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00263	0.00221	0.01931	0.02086	0.00003	0.00114	—	0.00114	0.00104	—	0.00104	—	2.66943	2.66943	0.00011	0.00002	—	2.67859

Dust From Material Movement	—	—	—	—	—	—	0.00318	0.00318	—	0.00034	0.00034	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02735	0.02652	0.01901	0.20781	0.00000	0.00000	0.04080	0.04080	0.00000	0.00956	0.00956	—	39.5280	39.5280	0.00165	0.00193	0.00401	40.1498
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00095	0.00089	0.00056	0.00696	0.00000	0.00000	0.00132	0.00132	0.00000	0.00031	0.00031	—	1.34597	1.34597	0.00005	0.00006	0.00219	1.36834
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00017	0.00016	0.00010	0.00127	0.00000	0.00000	0.00024	0.00024	0.00000	0.00006	0.00006	—	0.22284	0.22284	0.00001	0.00001	0.00036	0.22654
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2. Linear, Grading & Excavation (2026)

3.2.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.52413	2.96125	25.1750	29.0994	0.05997	1.08644	—	1.08644	0.99953	—	0.99953	—	6,494.74	6,494.74	0.26346	0.05269	—	6,517.03
Dust From Material Movement	—	—	—	—	—	—	3.18150	3.18150	—	0.34353	0.34353	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25517	0.21442	1.82285	2.10700	0.00434	0.07867	—	0.07867	0.07237	—	0.07237	—	470.265	470.265	0.01908	0.00382	—	471.879
Dust From Material Movement	—	—	—	—	—	—	0.23036	0.23036	—	0.02487	0.02487	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04657	0.03913	0.33267	0.38453	0.00079	0.01436	—	0.01436	0.01321	—	0.01321	—	77.8577	77.8577	0.00316	0.00063	—	78.1249

Dust From Material Movement	—	—	—	—	—	—	0.04204	0.04204	—	0.00454	0.00454	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11851	0.11493	0.08240	0.90050	0.00000	0.00000	0.17681	0.17681	0.00000	0.04144	0.04144	—	171.288	171.288	0.00717	0.00838	0.01736	173.983
Vendor	0.00099	0.00064	0.02185	0.00957	0.00009	0.00018	0.00336	0.00353	0.00018	0.00093	0.00110	—	12.9314	12.9314	0.00031	0.00194	0.00078	13.5181
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00908	0.00848	0.00536	0.06641	0.00000	0.00000	0.01257	0.01257	0.00000	0.00294	0.00294	—	12.8455	12.8455	0.00047	0.00061	0.02091	13.0589
Vendor	0.00007	0.00005	0.00154	0.00067	0.00001	0.00001	0.00024	0.00025	0.00001	0.00007	0.00008	—	0.93528	0.93528	0.00002	0.00014	0.00094	0.97864
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00166	0.00155	0.00098	0.01212	0.00000	0.00000	0.00229	0.00229	0.00000	0.00054	0.00054	—	2.12671	2.12671	0.00008	0.00010	0.00346	2.16205
Vendor	0.00001	0.00001	0.00028	0.00012	< 0.000005	< 0.000005	0.00004	0.00005	< 0.000005	0.00001	0.00001	—	0.15485	0.15485	< 0.000005	0.00002	0.00016	0.16203
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3. Linear, Grading & Excavation (2027)

3.3.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.38052	2.84058	23.4803	28.9835	0.05998	0.98627	—	0.98627	0.90737	—	0.90737	—	6,494.84	6,494.84	0.26346	0.05269	—	6,517.13
Dust From Material Movement	—	—	—	—	—	—	3.18150	3.18150	—	0.34353	0.34353	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25800	0.21680	1.79204	2.21205	0.00458	0.07527	—	0.07527	0.06925	—	0.06925	—	495.692	495.692	0.02011	0.00402	—	497.394
Dust From Material Movement	—	—	—	—	—	—	0.24282	0.24282	—	0.02622	0.02622	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04709	0.03957	0.32705	0.40370	0.00084	0.01374	—	0.01374	0.01264	—	0.01264	—	82.0675	82.0675	0.00333	0.00067	—	82.3492

Dust From Material Movement	—	—	—	—	—	—	0.04431	0.04431	—	0.00478	0.00478	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11134	0.10296	0.07473	0.83465	0.00000	0.00000	0.17681	0.17681	0.00000	0.04144	0.04144	—	167.767	167.767	0.00717	0.00838	0.01570	170.460
Vendor	0.00099	0.00064	0.02110	0.00928	0.00009	0.00018	0.00336	0.00353	0.00018	0.00093	0.00110	—	12.6569	12.6569	0.00031	0.00185	0.00069	13.2171
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00861	0.00839	0.00512	0.06457	0.00000	0.00000	0.01325	0.01325	0.00000	0.00310	0.00310	—	13.2604	13.2604	0.00044	0.00064	0.01993	13.4819
Vendor	0.00008	0.00005	0.00157	0.00069	0.00001	0.00001	0.00025	0.00027	0.00001	0.00007	0.00008	—	0.96486	0.96486	0.00002	0.00014	0.00087	1.00844
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00157	0.00153	0.00093	0.01178	0.00000	0.00000	0.00242	0.00242	0.00000	0.00057	0.00057	—	2.19541	2.19541	0.00007	0.00011	0.00330	2.23209
Vendor	0.00001	0.00001	0.00029	0.00013	< 0.000005	< 0.000005	0.00005	0.00005	< 0.000005	0.00001	0.00002	—	0.15974	0.15974	< 0.000005	0.00002	0.00014	0.16696
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4. Linear, Drainage, Utilities, & Sub-Grade (2027)

3.4.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.76257	2.31525	19.8106	23.2081	0.05435	0.76260	—	0.76260	0.70159	—	0.70159	—	5,691.76	5,691.76	0.23088	0.04618	—	5,711.30
Dust From Material Movement	—	—	—	—	—	—	2.65125	2.65125	—	0.28627	0.28627	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27247	0.22835	1.95392	2.28902	0.00536	0.07522	—	0.07522	0.06920	—	0.06920	—	561.379	561.379	0.02277	0.00455	—	563.306
Dust From Material Movement	—	—	—	—	—	—	0.26149	0.26149	—	0.02824	0.02824	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04973	0.04167	0.35659	0.41775	0.00098	0.01373	—	0.01373	0.01263	—	0.01263	—	92.9428	92.9428	0.00377	0.00075	—	93.2617

Dust From Material Movement	—	—	—	—	—	—	0.04772	0.04772	—	0.00515	0.00515	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09421	0.08712	0.06323	0.70625	0.00000	0.00000	0.14961	0.14961	0.00000	0.03507	0.03507	—	141.957	141.957	0.00606	0.00709	0.01328	144.235
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00941	0.00917	0.00560	0.07060	0.00000	0.00000	0.01449	0.01449	0.00000	0.00339	0.00339	—	14.5001	14.5001	0.00048	0.00070	0.02179	14.7424
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00172	0.00167	0.00102	0.01288	0.00000	0.00000	0.00264	0.00264	0.00000	0.00062	0.00062	—	2.40066	2.40066	0.00008	0.00012	0.00361	2.44077
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Linear, Paving (2027)

3.5.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97354	0.81805	7.17958	10.7806	0.01495	0.27917	—	0.27917	0.25684	—	0.25684	—	1,619.50	1,619.50	0.06569	0.01314	—	1,625.05
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04801	0.04034	0.35406	0.53165	0.00074	0.01377	—	0.01377	0.01267	—	0.01267	—	79.8656	79.8656	0.00324	0.00065	—	80.1396
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00876	0.00736	0.06462	0.09703	0.00013	0.00251	—	0.00251	0.00231	—	0.00231	—	13.2227	13.2227	0.00054	0.00011	—	13.2680
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07690	0.07513	0.03699	0.63321	0.00000	0.00000	0.10881	0.10881	0.00000	0.02550	0.02550	—	116.253	116.253	0.00309	0.00472	0.37238	118.109
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00342	0.00334	0.00204	0.02567	0.00000	0.00000	0.00527	0.00527	0.00000	0.00123	0.00123	—	5.27278	5.27278	0.00017	0.00025	0.00792	5.36087
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00062	0.00061	0.00037	0.00469	0.00000	0.00000	0.00096	0.00096	0.00000	0.00023	0.00023	—	0.87297	0.87297	0.00003	0.00004	0.00131	0.88755
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	11/8/2026	11/24/2026	5.00000	12.0000	—
Linear, Grading & Excavation	Linear, Grading & Excavation	11/25/2026	2/8/2027	5.00000	54.0000	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	2/9/2027	3/31/2027	5.00000	36.0000	—
Linear, Paving	Linear, Paving	4/1/2027	4/26/2027	5.00000	18.0000	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.000000	8.00000	87.0000	0.43000
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.000000	8.00000	36.0000	0.38000
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	1.000000	8.00000	6.00000	0.82000
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.000000	8.00000	87.0000	0.43000
Linear, Grading & Excavation	Excavators	Diesel	Average	3.00000	8.00000	36.0000	0.38000
Linear, Grading & Excavation	Graders	Diesel	Average	1.000000	8.00000	148.000	0.41000
Linear, Grading & Excavation	Rollers	Diesel	Average	2.00000	8.00000	36.0000	0.38000
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.000000	8.00000	150.000	0.36000
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00000	8.00000	423.000	0.48000

Linear, Grading & Excavation	Signal Boards	Electric	Average	1.000000	8.00000	6.00000	0.82000
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00000	8.00000	84.0000	0.37000
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.000000	8.00000	37.0000	0.48000
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.000000	8.00000	14.0000	0.74000
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	1.000000	8.00000	148.000	0.41000
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.000000	8.00000	8.00000	0.43000
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.000000	8.00000	11.0000	0.74000
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	1.000000	8.00000	96.0000	0.40000
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	2.00000	8.00000	423.000	0.48000
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	1.000000	8.00000	6.00000	0.82000
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00000	8.00000	84.0000	0.37000
Linear, Paving	Pavers	Diesel	Average	1.000000	8.00000	81.0000	0.42000
Linear, Paving	Paving Equipment	Diesel	Average	1.000000	8.00000	89.0000	0.36000
Linear, Paving	Rollers	Diesel	Average	3.00000	8.00000	36.0000	0.38000
Linear, Paving	Signal Boards	Electric	Average	1.000000	8.00000	6.00000	0.82000
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00000	8.00000	84.0000	0.37000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Linear, Grubbing & Land Clearing	Worker	7.50000	7.70000	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00000	4.00000	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00000	20.0000	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	Worker	32.5000	7.70000	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.000000	4.00000	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00000	20.0000	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Worker	27.5000	7.70000	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00000	4.00000	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00000	20.0000	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	Worker	20.0000	7.70000	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00000	4.00000	HHDT,MHDT
Linear, Paving	Hauling	0.00000	20.0000	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	3.00000	0.00000	0.00000
Linear, Grading & Excavation	—	—	3.00000	0.00000	0.00000
Linear, Drainage, Utilities, & Sub-Grade	—	—	3.00000	0.00000	0.00000

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	58.7015	203.983	0.03300	0.00400
2027	88.0523	203.983	0.03300	0.00400

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	30.8100	annual days of extreme heat
Extreme Precipitation	1.30000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00000	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.6994
AQ-PM	94.9471
AQ-DPM	18.9048
Drinking Water	70.5508
Lead Risk Housing	75.2111
Pesticides	95.9655
Toxic Releases	71.7429
Traffic	7.02500
Effect Indicators	—
CleanUp Sites	68.9436
Groundwater	47.5843
Haz Waste Facilities/Generators	7.34613
Impaired Water Bodies	23.8765
Solid Waste	35.7159
Sensitive Population	—
Asthma	88.8086
Cardio-vascular	46.6476
Low Birth Weights	77.9446
Socioeconomic Factor Indicators	—
Education	92.8752
Housing	43.8910
Linguistic	78.9958
Poverty	90.5276
Unemployment	60.5674

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	7.686385218
Employed	5.00449121
Median HI	5.851405107
Education	—
Bachelor's or higher	18.85025022
High school enrollment	100
Preschool enrollment	9.944822276
Transportation	—
Auto Access	30.77120493
Active commuting	13.30681381
Social	—
2-parent households	36.54561786
Voting	27.11407674
Neighborhood	—
Alcohol availability	66.70088541
Park access	4.658026434
Retail density	4.029257026
Supermarket access	2.399589375
Tree canopy	30.96368536
Housing	—
Homeownership	42.78198383
Housing habitability	46.22096753
Low-inc homeowner severe housing cost burden	35.2239189
Low-inc renter severe housing cost burden	85.34582317

Uncrowded housing	37.31553959
Health Outcomes	—
Insured adults	9.547029385
Arthritis	0.0
Asthma ER Admissions	31.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	57.8
Cognitively Disabled	26.7
Physically Disabled	20.3
Heart Attack ER Admissions	52.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	59.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	50.1
Elderly	53.8
English Speaking	7.3
Foreign-born	62.3
Outdoor Workers	4.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	92.9
Traffic Density	3.1
Traffic Access	0.0
Other Indices	—
Hardship	91.7
Other Decision Support	—
2016 Voting	17.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	89.0000
Healthy Places Index Score for Project Location (b)	5.00000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Appendix C

Biological Resource Evaluation

Colibri
Ecological Consulting

Biological Resource Evaluation

March 2025

Del Rey Sewer and Wastewater Treatment Plant Improvements Project
Fresno County, CA

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Executive Summary

The Del Rey Community Services District proposes a sanitary sewer collection system and wastewater treatment plant improvements project in the community of Del Rey in Fresno County, California. The proposed sanitary sewer collection system and wastewater treatment plant improvements project (the Project) will involve repairing and replacing existing sewer line at various locations throughout the residential and commercial areas of Del Rey. The Project will also involve repairing and replacing equipment and constructing an irrigation pump station, a blower building, and sampling docks at the existing wastewater treatment plant.

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

To evaluate whether the Project may affect biological resources under CEQA and federal cross-cutting purview, we (1) obtained lists of special-status species from the United States Fish and Wildlife Service, the California Department of Fish and Wildlife, and the California Native Plant Society; (2) reviewed other relevant background information such as aerial imagery and topographic maps; and (3) conducted a field reconnaissance survey at 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 the Project could affect two special-status animal species and nesting migratory birds. However, effects can be reduced to less-than-significant levels with mitigation.

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Abbreviations

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

1.0 Introduction

1.1 Background

The Del Rey Community Services District proposes a sanitary sewer collection system and wastewater treatment plant improvements project (the Project) in the community of Del Rey in Fresno County, California. The Project will be funded by the Clean Water State Revolving Fund (CWSRF). The CWSRF is a state and federal partnership that offers low-cost financing for a wide variety of water quality projects. It is administered by the State of California and partially funded by the United States Environmental Protection Agency (EPA). Due to this federal nexus, issuing funds from the CWSRF constitutes a federal action, one that requires that the EPA determine whether the proposed action may affect federally protected resources. The Project must therefore comply with requirements of both the California Environmental Quality Act (CEQA) and certain federal environmental laws and regulations.

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

1.2 Project Description

The proposed Project will involve replacing and rehabilitating approximately 0.54 miles of sewer main lines in the residential and commercial areas of Del Rey. The proposed Project will also improve the wastewater treatment plant by constructing and installing new wastewater treatment infrastructure;

constructing facility buildings and sampling docks; installing new piping, pond liners, and an operating system; upgrading the solar photovoltaic system; and upgrading miscellaneous electrical and instrumentation components.

1.3 Project Location

The Project site is immediately south of American Avenue, west of Indianola Avenue, and north of Lincoln Avenue in the community of Del Rey in south-central Fresno County, California (Figures 1 and 2).

1.4 Purpose and Need of Proposed Project

The purpose of the proposed Project is to update the existing sanitary sewer collection system and wastewater treatment plant. The Project is needed to repair and replace deteriorated sewer line and wastewater treatment infrastructure.

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 on or near the Project site were obtained by Colibri Senior Scientist Amy Hernandez from the United States Fish and Wildlife Service (USFWS) website (https://ecos.fws.gov/ipac/) on 25 February 2025 (Appendix A).

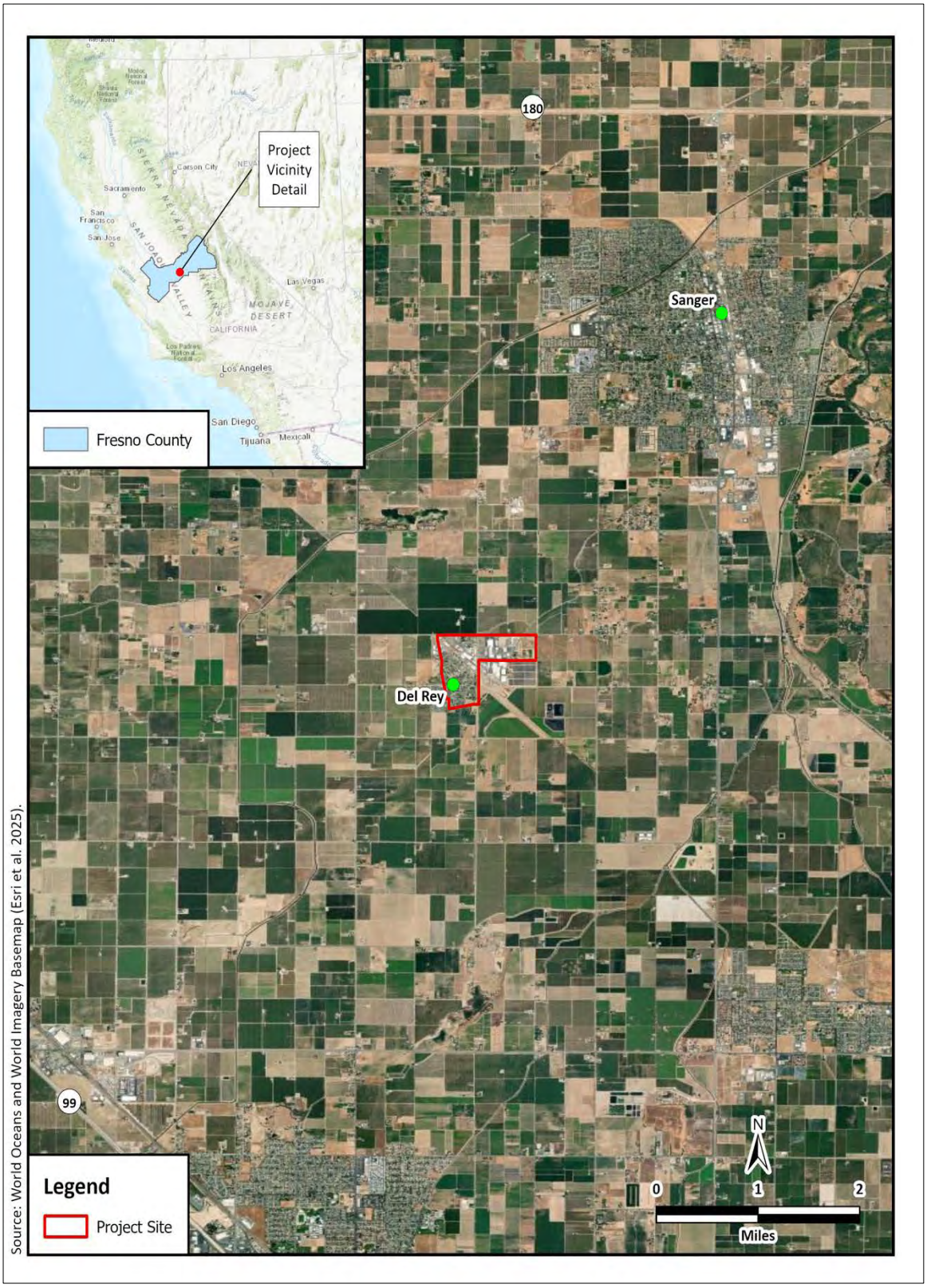

Figure 1. Project site vicinity map.

Figure 2. Project site map.

1.6 Regulatory Framework

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

1.6.1 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 Lake and Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code (CFGC) Section 1602.

California Endangered Species Act. The CESA of 1970 (CFGC Section 2050 et seq. and California Code of Regulations [CCR] Title 14, Subsections 670.2 and 670.51) prohibits the take of species listed under CESA (14 CCR Subsections 670.2 and 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 adversely affect 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 CFGC in those cases where it is demonstrated 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 (CFGC Section 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 2025). 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 CFGC 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 United States Fish and Wildlife Service (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 (CFGC Sections 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. CFGC Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. CFGC 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 (California Water Code Section 13000 et. seq.) was established in 1969 and entrusts the SWRCB 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 with California water quality standards. The Porter-Cologne Water Quality Control Act addresses all "waters of the State," which are more broadly defined than waters of the Unites States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

1.6.2 Federal Requirements

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 United States Code [USC] Sections 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 Code of Federal Regulations [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 USFWS and the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service enforce the provisions stipulated in the FESA of 1973 (FESA, 16 USC Section 1531 et seq.). Threatened and endangered species on the federal list (50 CFR Sections 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 proposed action area 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 Section 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 USC ch. 38 Section 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 MBTA (16 USC Section 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 Sections 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).

United States Army Corps of Engineers Jurisdiction. Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, the territorial seas, all interstate waters, all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States that are relatively permanent, standing, or continuously flowing bodies of water, and relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to waters of the United States (33 CFR part 328.3). Waters of the United States do not include prior converted cropland, waste treatment systems, ditches, artificially irrigated areas, artificial lakes or ponds, artificial reflecting pools or swimming pools, waterfilled depressions, and swales and erosional features. Under the 2006 Supreme Court ruling *Rapanos v. United States*, waters of the United States include non-navigable tributaries of traditional navigable waters that are relatively permanent. The 2023 Supreme Court ruling *Sackett v. Environmental Protection Agency* removed the significant nexus standard for tributaries and adjacent waters of the United States and requires tributaries and adjacent waters to have a continuous surface connection to a water 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 USC Section 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.

2.0 Methods

2.1 Desktop Review

As a framework for the evaluation and reconnaissance survey, we obtained a USFWS species list for the Project (USFWS 2025a, Appendix A). In addition, we searched the California Natural Diversity Database (CNDDB, CDFW 2025, Appendix B) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2025, 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 CNDDB and CNPS database searches confined to the Sanger 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site, and the eight surrounding quadrangles (Clovis, Conejo, Malaga, Piedra, Reedley, Round Mountain, Selma, and Wahtoke). A local list of special-status species was compiled using CNDDB records from within 5 miles of the Project site. Species that lacked a CEQA-recognized special-status[1] designation by state or federal 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 2025) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2025), the National Wetlands Inventory (USFWS 2025b), and relevant literature.

2.2 Reconnaissance Survey

Colibri Senior Scientist Amy Hernandez and Staff Scientist Madison Wallwork conducted a field reconnaissance survey at the Project site on 26 and 28 February 2025. The Project site and a 50-foot buffer (Figure 3) surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state or federally protected resources. Residential and commercial areas with limited access were surveyed with binoculars. All plants except those under cultivation or planted in residential and commercial areas and all vertebrate wildlife species observed within the survey area were identified and documented. The survey area was evaluated for the

[1] As used in this report, "special-status" refers to plant and animal species that are federally or state listed, proposed, or candidates; plant species that have been designated a CNPS Rare Plant Rank of 1 or 2; and animal species that are designated by the CDFW as fully protected or species of special concern.

presence of regulated habitats, including lakes, streams, and other waters as defined by the USACE, CDFW, and under the Porter-Cologne Water Quality Control Act. An additional buffer of 0.5 miles around the Project site was inspected for potential nesting habitat for special-status raptors. 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.

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” (California Public Resource 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 E within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix E, 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.

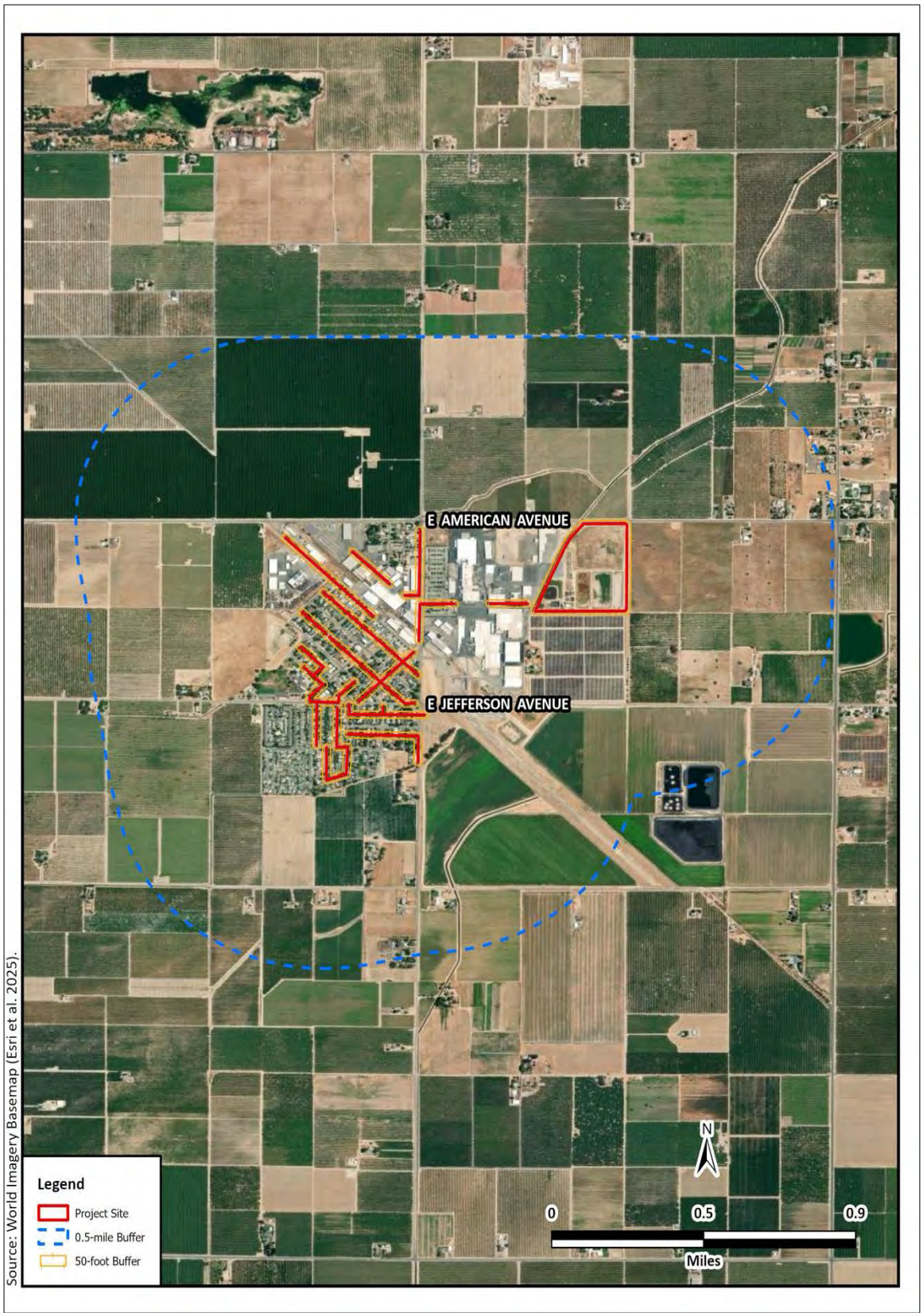

Figure 3. Reconnaissance survey area map.

3.0 Results

3.1 Desktop Review

The USFWS species list for the Project included 10 species listed as threatened, endangered, or proposed for listing under the FESA (USFWS 2025a, Table 1, Appendix A). None of those species could occur on or near the Project site due to the lack of habitat or because the Project site is outside the known range of the species (Table 1). As stated in the species list, the Project site occurs outside any proposed or designated USFWS critical habitat (USFWS 2025a, Appendix A).

Searching the CNDDB for records of special-status species from the Sanger 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 162 records of 43 species (Table 1, Appendix B) and two sensitive natural communities. Of the 43 species, 11 were not considered further because they are not CEQA-recognized as special-status species by state or federal regulatory agencies or public interest groups or are considered extirpated in California (Appendix B). Of the remaining 32 species, five are known from within 5 miles of the Project site (Table 1, Figure 4). Of those five species, one could occur on or near the Project site—bristly sedge (*Carex comosa*), a special-status plant with a CNPS California Rare Plant Rank (CRPR) of 2B.1 (Table 1). Three additional species from the nine-quad search could also occur on or near the Project site—the state candidate for listing as endangered burrowing owl (*Athene cunicularia*), the state listed as threatened Swainson's hawk (*Buteo swainsoni*), and Sanford's arrowhead (*Sagittaria sanfordii*, CRPR 1B.2). None of the other species nor the sensitive natural communities identified in the nine-quad search could occur on or near the Project site (Table 1) due to the lack of habitat.

Searching the CNPS inventory of rare and endangered plants of California yielded 19 species (CNPS 2025, Appendix C), 14 of which have a CRPR of 1 or 2 and four of which are also state or federally listed (Table 1). Two of those 14 plant species, both mentioned above, could occur on or near the Project site (Table 1).

The Project site is underlain by Exeter loam (46.7%); Hanford fine sandy loam (29.5%); Pollasky sandy loam, 2 to 9 percent slopes (7%); Grangeville fine sandy loam, water table (6.3%); Hanford sandy loam (5.6%); Pollasky fine sandy loam, 2 to 9 percent slopes (3.5%); Water (0.7%, in effluent storage ponds at the wastewater treatment plant); Exeter sandy loam (0.4%); and Ramona sandy loam

(0.4%) (NCRS 2025). The Project site was mostly flat and level aside from excavated wastewater ponds at the treatment plant and is at an elevation of 334–352 feet above mean sea level (Google 2025).

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			
Greene's tuctoria (*Tuctoria greenei*)	FE, SR, 1B.1	Vernal pools in open grasslands below 3445 feet elevation.	**None.** Habitat lacking; no vernal pools were in the survey area.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, SE, 1B.1	Vernal pools at or below 2700 feet elevation.	**None.** Habitat lacking; no vernal pools were in the survey area.
Succulent owl's clover (*Castilleja campestris* var. *succulenta*)	FT, SE, 1B.2	Vernal pools with heavy clay soils at or below 2500 feet elevation.	**None.** Habitat lacking; no vernal pools were in the survey area.
Monarch California overwintering population (*Danaus plexippus*)	FPT	Groves of trees within 1.5 miles of the ocean that produce suitable micro-climates for overwintering such as high humidity, dappled sunlight, access to water and nectar, and protection from wind.	**None.** Habitat lacking; the Project site is not within 1.5 miles of the ocean.
Crotch's bumble bee[3] (*Bombus crotchii*)	SCE	Grassland and upland scrub with abandoned rodent burrows for nesting and flowering plants for foraging.	**None.** Habitat lacking; the Project site lacked grassland and upland scrub. Although portions of the Project site at the wastewater treatment plant temporarily resemble grassland, those areas are too frequently disturbed, including through herbicide application, to provide habitat for this species.

Species	Status[1]	Habitat	Potential to Occur[2]
Valley elderberry longhorn beetle[3] (*Desmocerus californicus dimorphus*)	FT	Elderberry (*Sambucus* sp.) plants having basal stem diameter greater than 1" at ground level.	**None.** No elderberry shrubs were found in the survey area, which is also outside the currently recognized range of the species.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools; some artificial depressions, ditches, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands.	**None.** Habitat lacking; the ponds on the Project site are too frequently maintained to provide habitat for this species.
California tiger salamander—central California Distinct Population Segment (*Ambystoma californiense*)	FT, ST	Vernal pools or seasonal ponds for breeding; small mammal burrows for upland refugia in natural grasslands.	**None.** Habitat lacking; the ponds on the Project site are too frequently maintained to provide habitat for this species. No suitable aquatic features were within the 1.24-mile dispersal distance of this species.
Foothill yellow-legged frog - south Sierra Distinct Population Segment (*Rana boylii*)	FE, SE	Perennial streams and rivers with rocky substrates and open, sunny banks in forests, chaparral, or woodlands.	**None.** Habitat lacking; no perennial drainages with rocky substrates were present in the survey area.
Western spadefoot (*Spea hammondii*)	FPT, SSSC	Open areas with sandy or gravelly soil that allow rain pools to gather for breeding.	**None.** Habitat lacking; the ponds on the Project site are too frequently maintained to provide habitat for this species.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, SE, FP	Upland scrub and sparsely vegetated grassland with small mammal burrows.	**None.** Habitat lacking; the Project site lacked grassland and upland scrub.

Species	Status[1]	Habitat	Potential to Occur[2]
Northwestern pond turtle (*Actinemys marmorata*)	FPT, SSSC	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation. Basking sites and suitable upland areas for egg laying.	**None.** Habitat lacking; the ditch west of the Project site and ponds within the site are too frequently maintained to provide habitat for this species.
Burrowing owl (*Athene cunicularia*)	SCE	Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows.	**Low.** The Project site contained numerous ground squirrel burrows. However, the Project site is routinely disturbed, and no sign was detected in the survey area during the 28 February 2025 reconnaissance survey.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE	Riparian forest with dense understory below 2000 feet elevation.	**None.** Habitat lacking; the Project Site is outside the current known range of this species.
Swainson's hawk (*Buteo swainsoni*)	ST	Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging.	**Low.** Numerous potential nest trees were within the 0.5-mile survey area. However, foraging habitat in the survey area was limited due to residential and commercial development and incompatible orchards.
Tricolored blackbird (*Agelaius tricolor*)	ST, SSSC	Freshwater emergent wetlands, some agricultural fields, grassland, and silage fields near dairies.	**None.** Habitat lacking; the ponds on the Project site are too frequently maintained to provide habitat for this species.

Species	Status[1]	Habitat	Potential to Occur[2]
Western yellow-billed cuckoo[3] (*Agelaius tricolor*)	FT, SE	Riparian forests with willow and cottonwood trees and an understory of blackberry, nettles, or wild grape.	**None.** Habitat lacking; the Project site lacked riparian areas.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, SE	Sandy, alkaline, saline, and clay-based soils in upland scrub and grassland.	**None.** Habitat lacking; the Project site is outside the current known range of this species.
San Joaquin kit fox[3] (*Vulpes macrotis mutica*)	FE, ST	Grassland and upland scrub and fallowed agricultural lands adjacent to natural grasslands or upland scrub.	**None.** Habitat lacking; the Project site is outside the current known range of this species.
State Species of Special Concern			
California glossy snake (*Arizona elegans occidentalis*)	SSSC	Arid scrub, rocky washes, grasslands, chapparal.	**None.** Habitat lacking; no arid scrub, rocky washes, natural grassland, or chapparal were present in the survey area.
Coast horned lizard (*Phrynosoma blainvillii*)	SSSC	Open, generally sandy areas, washes, and flood plains in a variety of habitats.	**None.** Habitat lacking; no open, generally sandy areas, washes, or flood plains were present in the survey area.
Northern California legless lizard (*Anniella pulchra*)	SSSC	Moist sandy or loose loamy soils under sparse vegetation.	**None.** Habitat lacking; no moist soils under sparse vegetation were on or near the Project site.

Species	Status[1]	Habitat	Potential to Occur[2]
American badger (*Taxidea taxus*)	SSSC	Variable. Open, dry areas with friable soils and small mammal populations in grassland, conifer forest, and desert.	**None.** Habitat lacking; the Project site was too developed and fragmented to support the species.
Pallid bat (*Antrozous pallidus*)	SSSC	Rock crevices, caves, bridges, buildings, and tree hollows in rocky mountainous areas and sparsely vegetated grassland near water.	**None.** Habitat lacking; the Project site lacked potential roosting sites for this species.
California Rare Plants			
Alkali sink goldfields (*Lasthenia chrysantha*)	1B.1	Vernal pools and wet saline flats below 320 feet elevation.	**None.** Habitat lacking; the Project site is above the known elevational range of this species.
Bristly sedge[3] (*Carex comosa*)	2B.1	Lake margins and wet places in marsh and swamp, valley and foothill grassland, and wetlands below 1312 feet elevation.	**Low.** This species could occur in Garfield Ditch within the survey area along the western boundary of the wastewater treatment plant.
California jewelflower (*Caulanthus californicus*)	1B.1	Sandy soils in valley and foothill grassland, pinon and juniper woodland, and chenopod scrub communities at 200–3280 feet elevation.	**None.** Habitat lacking; repeated disking of the undeveloped portions of the Project site has substantially degraded the land cover.
California satintail (*Imperata brevifolia*)	2B.1	Mesic sites, alkali seeps, and riparian areas in chaparral, scrub, meadows and seeps, and wetland communities below 3985 feet elevation.	**None.** Habitat lacking; repeated disking of the undeveloped portions of the Project site has substantially degraded the land cover.

Species	Status[1]	Habitat	Potential to Occur[2]
Forked hare-leaf (*Lagophylla dichotoma*)	1B.1	Openings in foothill woodland and valley grassland at 160–1100 feet elevation.	**None.** Habitat lacking; repeated disking of the undeveloped portions of the Project site has substantially degraded the land cover.
Madera leptosiphon (*Leptosiphon serrulatus*)	1B.2	Openings in chaparral, cismontane woodland, and low elevation conifer forest at 980–4300 feet elevation.	**None.** Habitat lacking; the Project site is below the known elevational range of this species.
Keck's checkerbloom (*Sidalcea keckii*)	1B.1	Grassy slopes in blue oak woodland and valley and foothill grassland at 245–2135 feet elevation.	**None.** Habitat lacking; repeated disking of the undeveloped portions of the Project site has substantially degraded the land cover.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	1B.1	Heavy clay soils in valley and foothill grassland and cismontane woodland at 295–2625 feet elevation.	**None.** Habitat lacking; repeated disking of the undeveloped portions of the Project site has substantially degraded the land cover.
Sanford's arrowhead (*Sagittaria sanfordii*)	1B.2	Ponds, sloughs, and ditches at sea level to 650 feet elevation.	**Low.** This species could occur in Garfield Ditch within the survey area along the western boundary of the wastewater treatment plant.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	1B.2	Vernal pools, swales, and roadside ditches in valley and foothill grassland.	**None.** No vernal pool habitat was present on the Project site.

Species	Status[1]	Habitat	Potential to Occur[2]
Winter's sunflower (*Helianthus winteri*)	1B.2	Roadsides and openings on relatively steep south-facing slopes with granitic often rocky, soil from 410–1510 feet elevation.	**None.** Habitat lacking; the Project site is below the known elevational range of this species.

CDFW (2025), CNPS (2025), USFWS (2025a).

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

CNPS California Rare Plant Rank[1]:	**Threat Ranks[1]:**
1B – plants rare, threatened, or endangered in California and elsewhere.	0.1 – seriously threatened in California (> 80% of occurrences).
2B – plants rare, threatened, or endangered in California but more common elsewhere.	0.2 – moderately threatened in California (20-80% of occurrences).

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

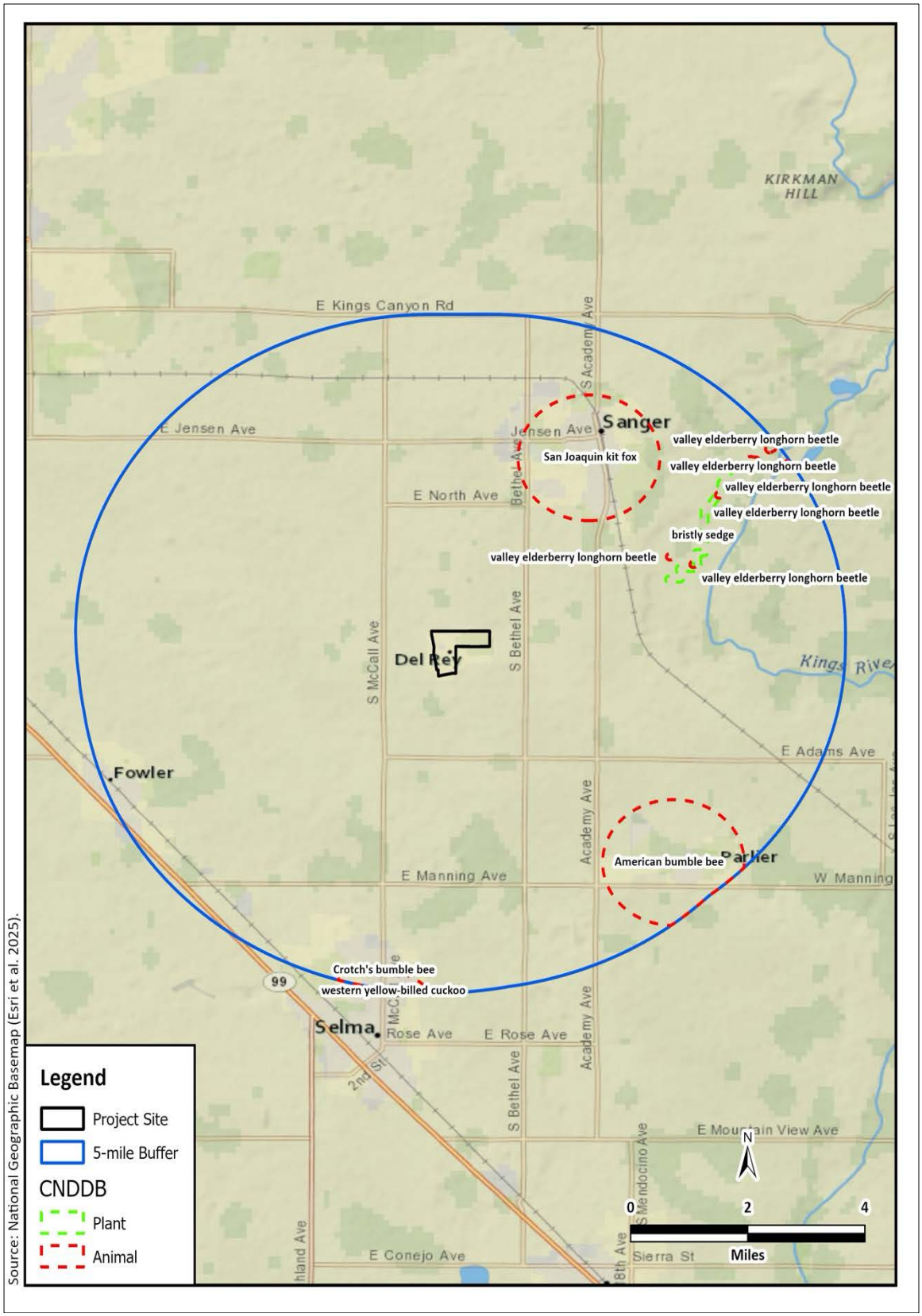

Figure 4. CNDDB occurrence map.

3.2 Reconnaissance Survey

3.2.1 Land Use and Habitats

The Project site comprised developed and ruderal land cover. Work areas consisted of paved roads, alleys, parking lots, residential lots, commercial lots, and the existing wastewater treatment plant. The sanitary sewer collection system work areas were within residential and commercial development areas (Figures 5 and 6). Ruderal herbaceous vegetation and ornamental trees and shrubs were distributed throughout the survey area surrounding the sewer line work areas (Figures 5 and 6).

The wastewater treatment plant work area supported ruderal herbaceous vegetation dominated by nonnative annual grasses and forbs (Figures 7–9). Trees and shrubs were absent from the facility. Two buildings with equipment/debris, concrete basins and associated infrastructure, two effluent ponds (Figure 7), several small ponds, and a solar photovoltaic array were distributed along the western portion of the facility. Four storage ponds with greater than 1-acre surface area and associated roads comprised the remaining facility footprint (Figures 8 and 9). Two storage ponds and both effluent ponds were inundated during the 26 and 28 February 2025 reconnaissance surveys (Figures 7 and 9). The pond banks showed signs of herbicide use (e.g., short, yellow vegetation with twisted leaves and cupped foliage) (Figure 10). The storage pond basins showed signs of disking (e.g., exposed soil, furrows, short vegetation) (Figure 8). Two areas within the wastewater treatment plant were under construction during the survey, a storage pond basin in the northern portion (Figure 11) and aeration basins in the southwest portion. Additional areas throughout the western portion of the wastewater treatment plant contained recently disturbed, exposed soil and soil stockpiles. California ground squirrel (*Otospermophilus beecheyi*) and other small mammal burrows were present throughout the wastewater treatment plant (Figure 10). Domestic dogs (*Canis familiaris*) inhabited the facility and were present during the reconnaissance survey.

The Project site was mostly encompassed by agricultural lands. The sewer collection system portion of the Project site was bordered by dry retention basins to the west and east; commercial development to the north, east, and south; and agricultural lands in all directions. The wastewater treatment plant portion of the Project site was bordered by Garfield Ditch (Figures 2 and 12) and commercial development to the west, a photovoltaic solar site to the south, and agricultural lands to the north and east. Aerial imagery indicates the wastewater treatment plant has been routinely disced since at least 1998 (Google 2025).

Figure 5. Photograph of a sewer line work area, looking north along South Portola Avenue, showing ornamental trees and shrubs and commercial development.

Figure 6. Photograph of a sewer line work area, looking north along South Del Rey Avenue, showing ornamental trees and residential and commercial development.

Figure 7. Photograph of the wastewater treatment plant, looking south, showing an effluent pond and ruderal vegetation with facility infrastructure in the background.

Figure 8. Photograph of the wastewater treatment plant, looking north, showing a road, ruderal vegetation, and a recently disced storage pond.

Figure 9. Photograph of the wastewater treatment plant, looking southeast, showing a partially inundated storage pond, ruderal vegetation, and roads.

Figure 10. Photograph of the wastewater treatment plant, looking north, showing a storage pond bank with signs of herbicide use and ground squirrel burrows.

Figure 11. Photograph of the wastewater treatment plant, looking northeast, showing construction in the north pond basin of the wastewater treatment plant.

Figure 12. Photograph showing Garfield Ditch along the western boundary of the wastewater treatment plant portion of the Project site, looking southwest.

3.2.2 Plant and Animal Species Observed

A total of 35 plant species (seven native and 25 nonnative), 29 bird species, two reptile species, and three mammal species were observed during the survey (Table 2).

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

Common Name	Scientific Name	Status
Plants		
Family Amaranthaceae		
Prostrate pigweed	*Amaranthus blitoides*	Native
Family Asteraceae		
Canada horseweed	*Erigeron canadensis*	Native
Common sow thistle	*Sonchus oleraceus*	Nonnative
Common groundsel	*Senecio vulgaris*	Nonnative
Pineapple weed	*Matricaria discoidea*	Native
Prickly lettuce	*Lactuca serriola*	Nonnative
Family Boraginaceae		
Common fiddleneck	*Amsinckia menziesii*	Native
Rusty popcornflower	*Plagiobothrys nothofulvus*	Native
Family Brassicaceae		
Dobie pod	*Tropidocarpum gracile*	Native
Lesser swine cress	*Lepidium didymum*	Nonnative
London rocket	*Sisymbrium irio*	Nonnative
Shepherd's purse	*Capsella bursa-pastoris*	Nonnative
Short pod mustard	*Hirschfeldia incana*	Nonnative
Family Caryophyllaceae		
Common chickweed	*Stellaria neglecta*	Nonnative
Corn spurrey	*Spergula arvensis*	Nonnative
Family Chenopodiaceae		
Lamb's quarters	*Chenopodium album*	Nonnative

Common Name	Scientific Name	Status
Russian thistle	*Salsola tragus*	Nonnative
Family Crassulaceae		
Aquatic pygmy weed	*Crassula aquatica*	Native
Family Cypraceae		
Spike rush	*Eleocharis* sp.	Unknown
Family Fabaceae		
Bur clover	*Medicago polymorpha*	Nonnative
Clover	*Trifolium* sp.	Unknown
Family Geraniaceae		
Musky stork's bill	*Erodium moschatum*	Nonnative
Redstem stork's bill	*Erodium cicutarium*	Nonnative
Family Juncaceae		
Rush	*Juncus* sp.	Unknown
Family Laminaceae		
Henbit deadnettle	*Lamium amplexicaule*	Nonnative
Family Malvaceae		
Cheeseweed mallow	*Malva parviflora*	Nonnative
Family Montiaceae		
Narrow leaved miner's lettuce	*Claytonia parviflora*	Native
Red maids	*Calandrinia menziesii*	Native
Family Poaceae		
Annual meadow grass	*Poa annua*	Nonnative
Foxtail barley	*Hordeum murinum*	Nonnative
Italian rye grass	*Festuca perennis*	Nonnative
Red brome	*Bromus rubens*	Nonnative
Ripgut brome	*Bromus diandrus*	Nonnative
Soft chess	*Bromus hordeaceus*	Nonnative
Family Polygonaceae		

Common Name	Scientific Name	Status
Curly dock	*Rumex crispus*	Nonnative
Family Solanaceae		
Jimsonweed	*Datura stramonium*	Nonnative
Family Typhaceae		
Cattail	*Typha* sp.	Unknown
Family Urticaceae		
Dwarf nettle	*Urtica urens*	Nonnative
Birds		
Family Accipitridae		
Cooper's hawk	*Accipiter cooperii*	MBTA, CFGC
Red-tailed hawk	*Buteo jamaicensis*	MBTA, CFGC
Family Anatidae		
Canada goose	*Branta canadensis*	MBTA, CFGC
Mallard	*Anas platyrhynchos*	MBTA, CFGC
Family Ardeidae		
Great blue heron	*Ardea herodias*	MBTA, CFGC
Great egret	*Ardea alba*	MBTA, CFGC
Family Cathartidae		
Turkey vulture	*Cathartes aura*	MBTA, CFGC
Family Charadriidae		
Killdeer	*Charadrius vociferus*	MBTA, CFGC
Family Columbidae		
Eurasian collared-dove	*Streptopelia orientalis*	Nonnative
Mourning dove	*Zenaida macroura*	MBTA, CFGC
Rock pigeon	*Columbia livia*	Nonnative
Family Corvidae		
American crow	*Corvus brachyrhynchos*	MBTA, CFGC
California scrub-jay	*Aphelocoma californica*	MBTA, CFGC

Common Name	Scientific Name	Status
Family Falconidae		
American kestrel	*Falco sparverius*	MBTA, CFGC
Family Fringillidae		
House finch	*Haemorhous mexicanus*	MBTA, CFGC
Family Icteridae		
Brewer's blackbird	*Euphagus cyanocephalus*	MBTA, CFGC
Red-winged blackbird	*Agelaius phoeniceus*	MBTA, CFGC
Family Mimidae		
Northern mockingbird	*Mimus polyglottos*	MBTA, CFGC
Family Passerellidae		
Savannah sparrow	*Passerculus sandwichensis*	MBTA, CFGC
White-crowned sparrow	*Zonotrichia leucophrys*	MBTA, CFGC
Family Passeridae		
House sparrow	*Passer domesticus*	Nonnative
Family Picidae		
Acorn woodpecker	*Melanerpes formicivorus*	MBTA, CFGC
Family Rallidae		
American coot	*Fulica americana*	MBTA, CFGC
Family Recurvirostridae		
Black-necked stilt	*Himantopus mexicanus*	MBTA, CFGC
Family Scolopacidae		
Long-billed curlew	*Numenius americanus*	MBTA, CFGC
Family Sturnidae		
European starling	*Sturnus vulgaris*	Nonnative
Family Troglodytidae		
House wren	*Troglodytes aedon*	MBTA, CFGC
Family Tyrannidae		
Black phoebe	*Sayornis nigricans*	MBTA, CFGC

Common Name	Scientific Name	Status
Say's phoebe	*Sayornis nigricans*	MBTA, CFGC
Reptiles		
Family Phrynosomatidae		
Common side-blotched lizard	*Uta stansburiana*	Native
Western fence lizard	*Sceloporus occidentalis*	Native
Mammals		
Family Leporidae		
Black-tailed jackrabbit	*Lepus californicus*	Native
Family Sciuridae		
California ground squirrel	*Otospermophilus beecheyi*	Native
Eastern fox squirrel	*Sciurus niger*	Nonnative

MBTA = Protected under the MBTA (16 USC § 703 et seq.); CFGC = Protected under CFGC §§ 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

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, killdeer (*Charadrius vociferus*) and house finch (*Haemorhous mexicanus*). Large trees within 0.5 miles of the Project site could provide nesting substrates for raptors. Idle agricultural lands southeast of the Project site could provide foraging habitat for raptors.

3.2.5 Regulated Habitats

Garfield Ditch, an agricultural drainage ditch, bordered the western boundary of the wastewater treatment plant portion of the Project site (Figures 2 and 12). The ditch is listed in the National Wetlands Inventory as riverine with a classification of R4SBCx, which means unknown intermittent, streambed, seasonally flooded, and excavated (USFWS 2025b). The ditch was dry during the 26 and 28 February 2025 reconnaissance surveys (Figure 12). As the ditch would contain surface water and would be classified as a stream, it is likely under the regulatory jurisdiction of the SWRCB and the CDFW, respectively. Although the ditch may

be hydrologically connected to the Kings River, a water of the United States, it evidently is not relatively permanent and would therefore not itself meet the regulatory definition of a water of the United States subject to the jurisdiction of the USACE. Regardless, the Project is not expected to impact the ditch.

The wastewater treatment plant included six ponds (Figures 2 and 7–9). The ponds are listed in the National Wetlands Inventory as freshwater pond with a classification of PUBKx, which means palustrine, unconsolidated bottom, artificially flooded, and excavated (USFWS 2025b). However, as the ponds were artificially constructed in uplands, are used and maintained for wastewater treatment, do not have a continuous surface connection to a water of the United States, and are neither lakes nor streams, they are not likely under the regulatory jurisdiction of the SWRCB, USACE, or CDFW.

The nearest river, the Kings River, is about 3 miles east of the Project site. According to the Wild and Scenic Rivers Act, there are no designated wild and scenic reaches of the Central Valley portion of the Kings River (USFWS 2025a).

No marine or estuarine fishery resources or migratory routes to and from anadromous fish spawning grounds are present in the survey area. In addition, no EFH, defined by the Magnuson-Stevens Act as those resources necessary for fish spawning, breeding, feeding, or growth to maturity, are present in the survey area.

The Project site is within an area of minimal flood hazard (Zone X; FEMA 2025).

3.3 Special-Status Species

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

3.3.1 Burrowing Owl

Burrowing owl is a member of the family Strigidae recognized as a state candidate for listing as endangered by the CDFW (CDFW 2025). It occurs primarily in grasslands but can persist and even thrive in agricultural or other developed and disturbed areas (Shuford and Gardali 2008, Rosenberg and Haley 2004). Burrowing owl depends on burrow systems excavated by other species such as California ground squirrel and American badger (*Taxidea taxus*) (Poulin et al. 2020). Burrowing owl uses burrows for protection from predators and weather, as roosting sites, and dwellings to raise young (Poulin et al. 2020). It commonly perches outside burrows on mounds of soil or nearby fence posts. Prey types

include insects, especially grasshoppers and crickets, small mammals, frogs, toads, and lizards (Poulin et al. 2020). The nesting season begins in March, and incubation lasts 28–30 days. The female incubates the eggs while the male forages and delivers food items to the burrow-nest; young then fledge between 44 and 53 days after hatching (Poulin et al. 2020). Adults can live up to eight years in the wild.

Although there are no CNDDB occurrence records of burrowing owl from within 5 miles of the Project site, there are four records, from 1990–2006, from within the nine-quad search (CDFW 2025). California ground squirrel burrows distributed throughout the wastewater treatment plant portion of the Project site could support the species. However, the Project site is routinely disturbed, and no sign of burrowing owl was detected during the 26 and 28 February 2025 reconnaissance surveys. Therefore, the potential for this species to occur on or near the Project site is low.

3.3.2 Swainson's Hawk

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

Although there are no CNDDB occurrence records of Swainson's hawk from within 5 miles of the Project site, there are six records, from 1914–2016, from within the nine-quad search (CDFW 2025). Numerous potential nest trees were present within 0.5 miles of the Project site. However, foraging habitat in the survey area was limited due to incompatible agriculture (e.g., vineyard and orchard) and residential and commercial development. The Project site is also subject to frequent disturbance. Consequently, this species has a low potential to occur on or near the Project site.

3.3.3 Bristly Sedge

Bristly sedge is a perennial grasslike herb in the family Cyperaceae with a CRPR of 2B.1. It grows in clumps of triangular stems up to about 4 feet tall from short rhizomes and is native to western North America, including California. It occurs in meadows and a variety of wet areas such as retention basins, ditches, lake-margins, and wetland edges below 1315 feet elevation. It flowers May–September (Turner et al. 2012a).

There is one CNDDB record for bristly sedge, from 1989, from within the 5 miles of the Project site (CDFW 2025). The ponds in the wastewater treatment facility are too degraded due to routine discing and herbicide use to support the species. Although Garfield Ditch along the western boundary of the wastewater treatment plant is disturbed and may undergo routine herbicide treatment, it could support bristly sedge. Due to low habitat quality, however, its probability of occurrence is low. As no impacts to this ditch is expected, no impacts to bristly sedge are expected. Therefore, no mitigation measures for this species are recommended.

3.3.4 Sanford's Arrowhead

Sanford's arrowhead is an aquatic, rhizomatous perennial herb in the family Alismataceae with a CRPR of 1B.2. It is endemic to the Central Valley of California where it occupies ponds and ditches below 984 feet elevation. It flowers May–October (Turner et al. 2012b).

Although there are no CNDDB occurrence records of Sanford's arrowhead from within 5 miles of the Project site, there are 15 records, from 1980–2018, from within the nine-quad search (CDFW 2025). The ponds in the wastewater treatment facility are too degraded due to routine discing and herbicide use to support the species. Although Garfield Ditch along the western boundary of the wastewater treatment plant is disturbed and may undergo routine herbicide treatment, it could support Sanford's arrowhead. Due to low habitat quality, however, its probability of occurrence is low. As no impacts to the ditch is expected, no impacts to Sanford's arrowhead are expected. Therefore, no mitigation measures for this species are recommended.

4.0 Environmental Impacts

4.1 Effects Determinations

4.1.1 Critical Habitat

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

4.1.2 Special-Status Species

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

4.1.3 Migratory Birds

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

4.1.4 Regulated Habitats

We conclude the Project will have **no effect** on regulated habitats as no impacts to such habitats are expected.

4.2 Significance Determinations

This Project, which will result in temporary and permanent impacts to developed and ruderal land cover, 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 such ordinances are pertinent to the Project; 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 provide the framework for Criterion BIO1 and Criterion BIO2 below. These criteria are 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 species 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 Measures BIO1 and BIO2 (below) be included in the conditions of approval to reduce the potential impacts to less-than-significant levels.

Mitigation Measure BIO1. Protect burrowing owl.

1. A pre-construction clearance survey shall be conducted by a qualified biologist to ensure that no burrowing owl will be disturbed during the implementation of the Project. A pre-construction clearance 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 burrowing owl habitat in and immediately adjacent to the impact areas.
2. If a burrowing owl or sign of burrowing owl use (e.g., feathers, guano, pellets) is detected on or within 500 feet of the Project site, and the qualified biologist determines that Project activities would disrupt the owl(s), a construction-free buffer, limited operating period, or passive relocation shall be implemented in consultation with the CDFW.

Mitigation Measure BIO2. Protect nesting Swainson's hawks.

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.
2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for active Swainson's hawk nests no more than 14 days prior to the initiation of construction activities. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site.
3. If an active Swainson's hawk nest is found within 0.5 miles of the Project site, and the qualified biologist determines that Project activities would disrupt the nesting birds, a construction-free buffer or limited operating period shall be implemented in consultation with the CDFW.

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 MBTA and CFGC. 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 and CFGC. 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 on the Project site or immediately adjacent to the construction zone could constitute a significant effect. We recommend that the mitigation measure BIO4 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

Mitigation Measure BIO3. Protect nesting birds.

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

2. If it is not possible to schedule construction between September and January, pre-construction surveys for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

5.0 Literature Cited

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Appendix A. USFWS list of threatened and endangered species.

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

IPaC resource list

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

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

Location

Fresno County, California

Local office

Sacramento Fish And Wildlife Office

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

Federal Building

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

Endangered species

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

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

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

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

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

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

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

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

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

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
Northwestern Pond Turtle Actinemys marmorata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot Spea hammondii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Greene's Tuctoria Tuctoria greenei Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1573	Endangered

Critical habitats

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

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

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

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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

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

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Lawrence's Goldfinch Spinus lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Northern Harrier Circus hudsonius This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

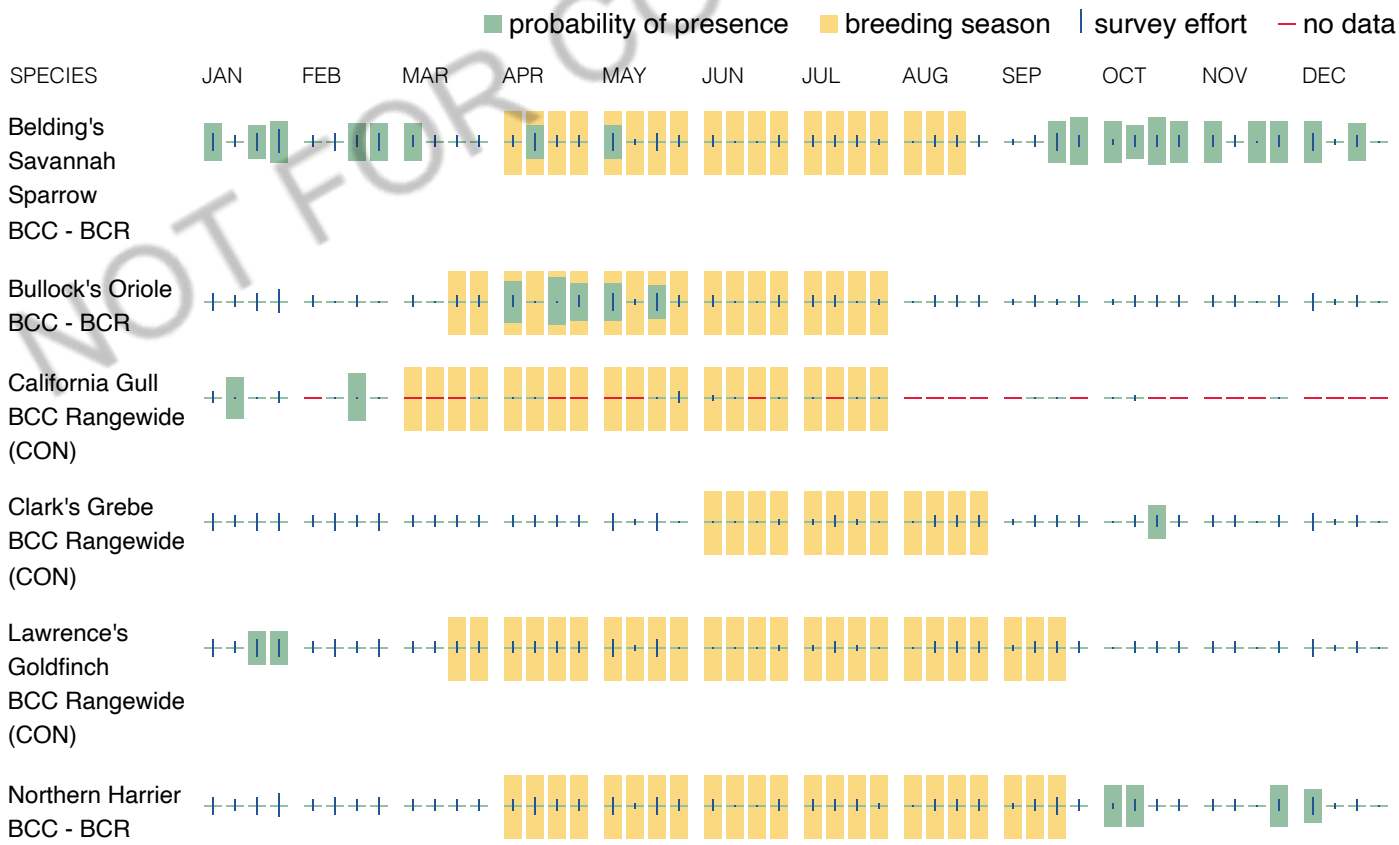
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

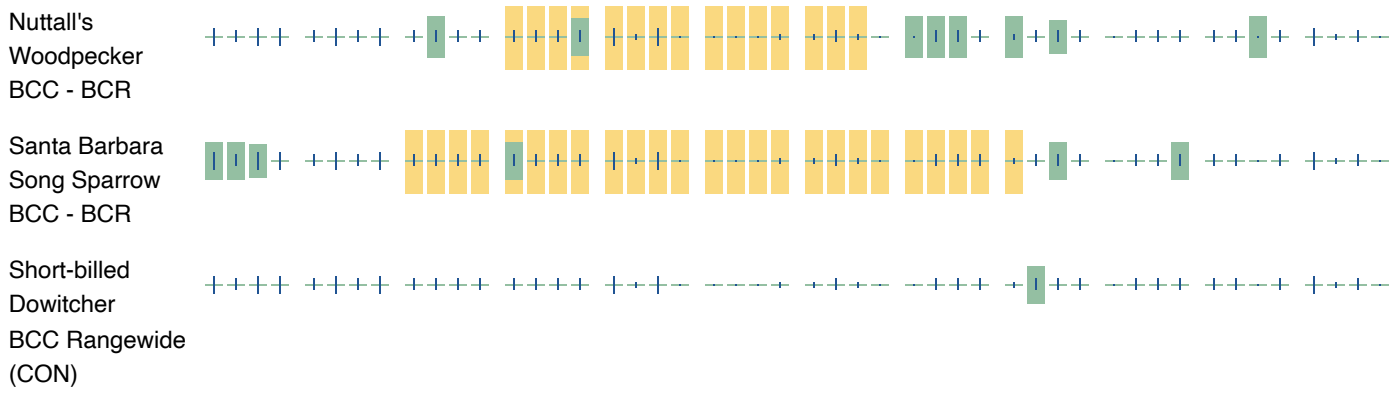
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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





Migratory Bird FAQs

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

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

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

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

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

Survey Timeframe

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

Facilities

Wildlife refuges and fish hatcheries

Refuge and fish hatchery information is not available at this time

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

PUBKx

RIVERINE

R4SBCx

R5UBFx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix B. CNDDB occurrence records.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Piedra (3611974) OR Clovis (3611976) OR Conejo (3611956) OR Selma (3611955) OR Sanger (3611965) OR Wahtoke (3611964) OR Reedley (3611954) OR Malaga (3611966) OR Round Mountain (3611975))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
Antioch efferian robberfly *Efferia antiochi*	IIDIP07010	None	None	G1G2	S1S2	
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G3	S3	2B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G4	S4	SSC
Crotch's bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
double-crested cormorant *Nannopterum auritum*	ABNFD01020	None	None	G5	S4	WL
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Endangered	Endangered	G3T2	S2	
forked hare-leaf *Lagophylla dichotoma*	PDAST5J070	None	None	G2	S2	1B.1
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hurd's metapogon robberfly *Metapogon hurdi*	IIDIP08010	None	None	G1G2	S1S2	
Keck's checkerbloom *Sidalcea keckii*	PDMAL110D0	Endangered	None	G2	S2	1B.1
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
Madera leptosiphon *Leptosiphon serrulatus*	PDPLM09130	None	None	G3	S3	1B.2
marbled harvestman *Calicina macula*	ILARAU8060	None	None	G1	S1	
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	
Morrison bumble bee *Bombus morrisoni*	IIHYM24460	None	None	G3	S1S2	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S2S3	SSC
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
Piedra harvestman *Calicina piedra*	ILARAU8080	None	None	G1	S1	
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
succulent owl's-clover *Castilleja campestris var. succulenta*	PDSCR0D3Z1	Threatened	Endangered	G4?T2T3	S2S3	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Winter's sunflower *Helianthus winteri*	PDAST4N260	None	None	G2?	S2?	1B.2

Record Count: 45

Appendix C. CNPS plant list.

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

19 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include [3611966:3611964:3611965:3611976:3611975:3611974:3611954:3611955:3611956]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	 Dean Wm. Taylor 1997
Castilleja campestris var. *succulenta*	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr-May	FT	CE	G4? T2T3	S2S3	1B.2	Yes	1984-01-01	No Photo Available
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	Yes	1984-01-01	No Photo Available
Claytonia parviflora ssp. *grandiflora*	streambank spring beauty	Montiaceae	annual herb	Feb-May	None	None	G5T3	S3	4.2	Yes	2006-09-29	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Delphinium hansenii ssp. *ewanianum*	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	None	None	G4T3	S3	4.2	Yes	1994-01-01	No Photo Available
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual/perennial herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	1980-01-01	No Photo Available
Erythranthe acutidens	Kings River monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	G2G3	S2S3	3	Yes	1974-01-01	 Barry Breckling

Helianthus winteri	Winter's sunflower	Asteraceae	perennial shrub	Jan-Dec	None	None	G2?	S2?	1B.2	Yes	2014-10-15	 © 2014 Chris Winchell
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2017 John Doyen
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Lagophylla dichotoma	forked hare-leaf	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.1	Yes	2012-03-13	 © 2010 Chris Winchell
Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	Yes	2019-09-30	 © 2009 California State University, Stanislaus
Leptosiphon serrulatus	Madera leptosiphon	Polemoniaceae	annual herb	Apr-May	None	None	G3	S3	1B.2	Yes	1980-01-01	 © 2008 Chris Winchell
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	Feb-Apr	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook

Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	FE	CR	G1	S1	1B.1	Yes	1974-01-01	 ©2008 F. Gauna

Showing 1 to 19 of 19 entries

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California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 26 February 2025].
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Appendix D

Cultural Resources Survey

A
PHASE I CULTURAL RESOURCE SURVEY,
SANITARY SEWER COLLECTION AND WASTEWATER TREATMENT
PLANT IMPROVEMENTS,
DEL REY, FRESNO COUNTY, CALIFORNIA

Submitted to:
Crawford and Bowen Planning
113 N. Church Street #302
Visalia, California 93291

Keywords:
Sanger 7.5' Quadrangles, Fresno County,
California Environmental Quality Act

Submitted by:
Hudlow Cultural Resource Associates
1405 Sutter Lane
Bakersfield, California 93309

Author:
Scott M. Hudlow

May 2025

Management Summary

At the request of Crawford and Bowen Planning, a Phase I Cultural Resource Survey was conducted in Del Rey for the Sanitary Sewer Collection and Wastewater Treatment Plant Improvements for the Del Rey Community Services District throughout Del Rey, Fresno County, California. The Phase I Cultural Resource Survey consisted of a cultural resource survey and a cultural resource record search.

One cultural resource was identified, the Garfield Ditch, CA-FRE-003905H. The Garfield Ditch is **located directly to the west of the Del Rey Community Service District's lift station**, which already avoids any direct impact to the cultural resource, presumably by boring underneath the Garfield Ditch. A second cultural resource, the Atchison, Topeka and Santa Fe spur line has been removed throughout Del Rey and the associated areas of Fresno County, both to the south and north. The Garfield Ditch brings water down from the Kings River to the northeast. It was built during the twentieth-century, and is a typical unlined agricultural ditch for the conveyance of water. As such, the Garfield Ditch is not associated with any significant events at the local, state or regional levels; thus, the property is not eligible for listing on the California Register under Criterion 1. Research failed to identify anyone at this location that has made a substantial contribution to local or national historical events; thus, the property is not eligible for listing on the California Register under Criterion 2. The Garfield Ditch does no retain the characteristics that reflect a type, period, or method of construction associated with a master craftsman; thus, the property is not eligible for listing on the California Register under Criterion 3. Finally, the property retains no research potential that can not be gleaned from archival research; thus, the property is not eligible for listing on the California Register under Criterion 4.

No further work is required. If cultural resources are encountered during the course of construction, a qualified archaeologist should be consulted for further evaluation.

If human remains or potential human remains are observed during construction, work in the vicinity of the remains will cease, and the remains will be treated in accordance with the provisions of State Health and Safety Code Section 7050.5. The protection of human remains follows California Public Resources Codes, Sections 5097.94, 5097.98, and 5097.99.

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5 Project Area, Garfield Ditch, CA-FRE-003905H, View to the North 15

1.0 Introduction

At the request of Crawford and Bowen Planning, *Hudlow Cultural Resource Associates* conducted a Phase I Cultural Resource Survey in accordance with the California Environmental Quality Act for Sanitary Sewer Collection and Wastewater Treatment Plant Improvements for the Del Rey Community Services District. This is a right-of-way project traversing multiple streets and alleyways throughout the community of Del Rey. This project is being undertaken in accordance with the California Environmental Quality Act (CEQA) with Fresno County responsible as Lead Agency to implement CEQA. The Phase I Cultural Resource Survey consisted of a pedestrian survey and a cultural resource record search.

CEQA is a California statute passed in 1970. Governor Ronald Reagan signed it into law, after the federal government passed the National Environmental Policy Act (NEPA). CEQA institutes a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires state and local agencies within California to follow a protocol of analysis and public disclosure of environmental impacts of proposed projects and, in a departure from NEPA, adopt all feasible measures to mitigate those impacts. CEQA makes environmental protection a mandatory part of every California state and local agency's decision making process.

CEQA was signed into law in 1970, in a time of increasing public concern for the environment. The statute required that for any public project, the government must conduct an environmental study to examine what impacts the project might have on things like air/water quality, noise, transportation, biological resources, or cultural resources, and generate an assessment documenting the impacts as well as any potential and planned mitigations. In 1972, state courts interpreted a public project as a development project that needed government approval.

In 1969, NEPA passed into law. It is similar to CEQA in that both statutes set forth a policy of environmental protection, and a protocol by which all agencies in their respective jurisdictions make environmental protection part of their decision making process. NEPA is narrower in scope than CEQA. NEPA applies only to projects receiving federal funding or approval by federal agencies, while CEQA applies to projects receiving any form of state or local approval, permit, or oversight. Thus, development projects in California funded only by private sources and not requiring approval by a federal agency would be exempt from NEPA; but would likely be subject to CEQA.

The CEQA statute, California Public Resources Code § 21000 et seq., codifies a statewide policy of environmental protection. According to CEQA, state and local agencies must give consideration to environmental protection in regulating public and private activities and should not approve projects for which feasible and environmentally superior mitigation measures or alternatives exist.

CEQA mandates actions that all state and local agencies must do to advance this policy. Specifically, for any project under CEQA's jurisdiction with potentially significant environmental impacts, agencies must identify mitigation measures and alternatives by preparing an Environmental Impact Report and must approve projects with feasible mitigation

measures and the environmentally superior alternative. The California Natural Resources Agency promulgates the CEQA Guidelines, California Code of Regulations Title 14 § 15000 et seq., which detail the protocol by which state and local agencies must comply with CEQA requirements. CEQA originally applied to only public projects, but California Supreme Court interpretation of the statute, as well as later revisions, expanded CEQA's jurisdiction to nearly all projects within California, including those proposed by private businesses and individuals. § 21002.1 states "Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so." For private projects, CEQA applies when a discretionary government permit or other entitlement for use is necessary.

The term "historical resources" shall include the following: (1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code § 5024.1, Title 14 CCR, Section 14 CCR, Section 4850 et seq.). (2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant. (3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 14 CCR, Section 4852) including the following:

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

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

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

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

The lead agency, Fresno County, is responsible for conducting the CEQA review and has final approval of the project. Fresno County is also responsible for coordinating with the project applicant, public, and associated agencies during the CEQA process.

2.0 Project Location

The project area is in Del Rey, Fresno County, California. This project area is bound by American Avenue to the north, Garfield Ditch to the south and east and the line one quarter mile east of the Section 5 half section line. The project area is located in the E ½ of Section 5 and the NW ¼ of Section 4, T.15S., R.22E., Mount Diablo Baseline and Meridian, as displayed on the United States Geological Survey (USGS) Sanger 7.5-minute quadrangle map (Figure 1). The proposed sewer system improvements will be located in public right-of-ways, which are primarily existing roads, streets, and alleyways throughout Del Rey and the surrounding Fresno County area in Fresno County, California (Figure 2).

3.0 Record Search

A record search of the project area and the environs within one half-mile was conducted at the Southern San Joaquin Information Center. Scott M. Hudlow conducted the record search, RS# 25-111, on March 5, 2025. The record search revealed that six cultural resource surveys have been conducted within one half-mile of the project area. Three of these cultural resource surveys have previously addressed portions of Del Rey (Ptomey 1990, Varner 2002, and Billat (2004). Three cultural resources have been located on the current project area; these are the only cultural resources that have been recorded within one half-mile of the current project area. These three cultural resources are historic, one is AT&SF rail line, the second is a PG&E Tower, and the third is the Garfield Ditch (Appendix II).

4.0 Environmental Background

The project area is located at elevations between 340 and 347 feet above mean sea level in the Great Central Valley, which is composed of two valleys-the Sacramento Valley and the San Joaquin Valley. Del Rey is located within the Kings River delta north of Miles Creek at the edge of the Sierra Nevada foothills to the west. The streets, roads, and alleyways are covered in dirt, concrete, and asphalt. Decorative plant species, including Eucalyptus and palms, are found in yards and sidewalk medians. No native vegetation survives in the rural farm town of Del Rey. Fruit and nut orchards bound Del Rey on all sides, including almonds and oranges (Figures 3 and 4).

5.0 Prehistoric Archaeological Context

A limited amount of archaeological research has been conducted in the southern San Joaquin Valley. Thus, consensus on a generally agreed upon regional cultural chronology has yet to be developed. Most cultural sequences can be summarized into several distinct time periods: Early, Middle, and Late. Sequences differ in their inclusion of various "horizons," "technologies," or "stages." A prehistoric archaeological summary of the southern San Joaquin Valley is available in Moratto (Moratto 1984).

Despite the preoccupation with chronological issues in most of the previous research, most suggested chronological sequences are borrowed from other regions with minor modifications based on sparse local data.

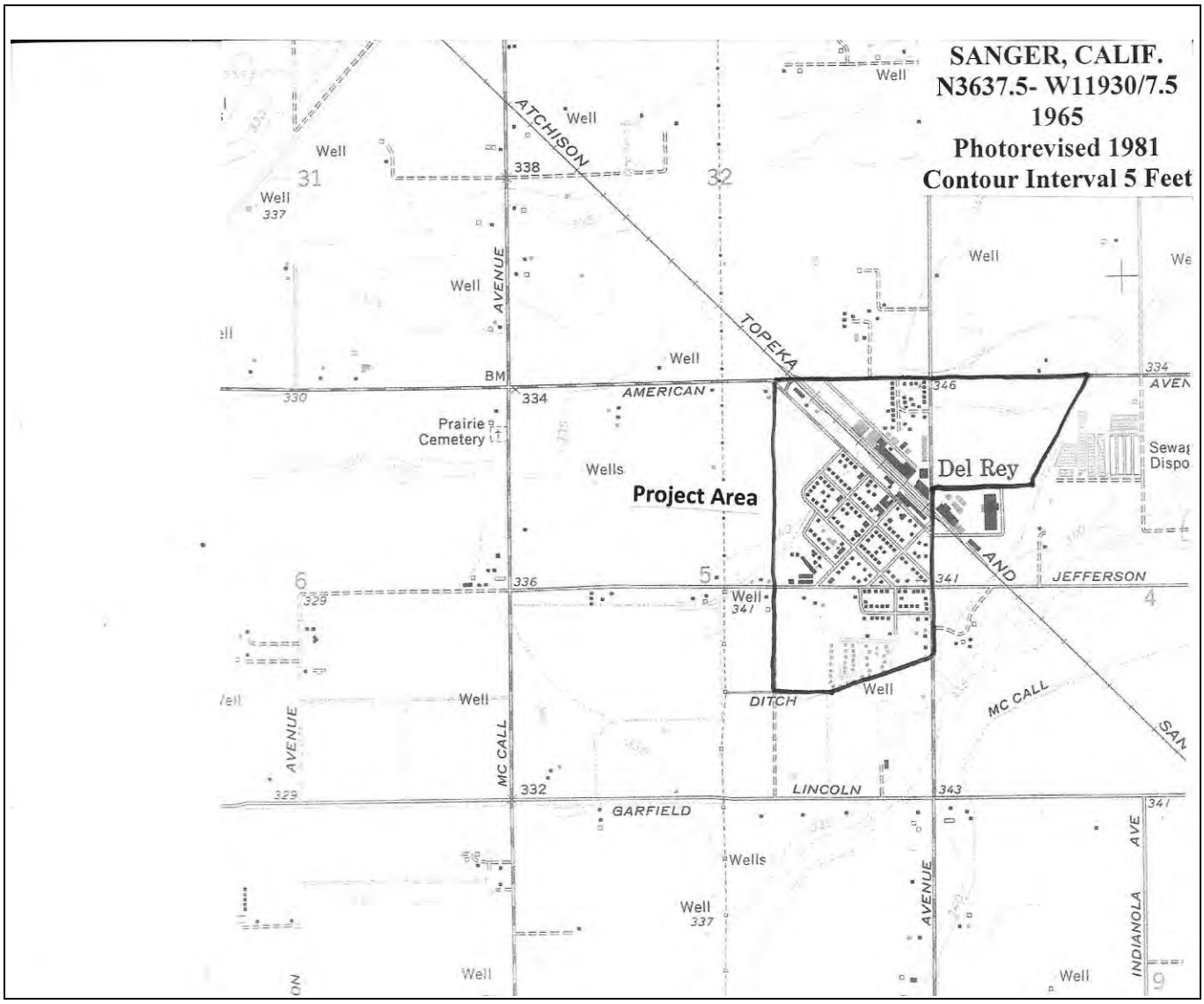

Figure 1
Project Area Location Map

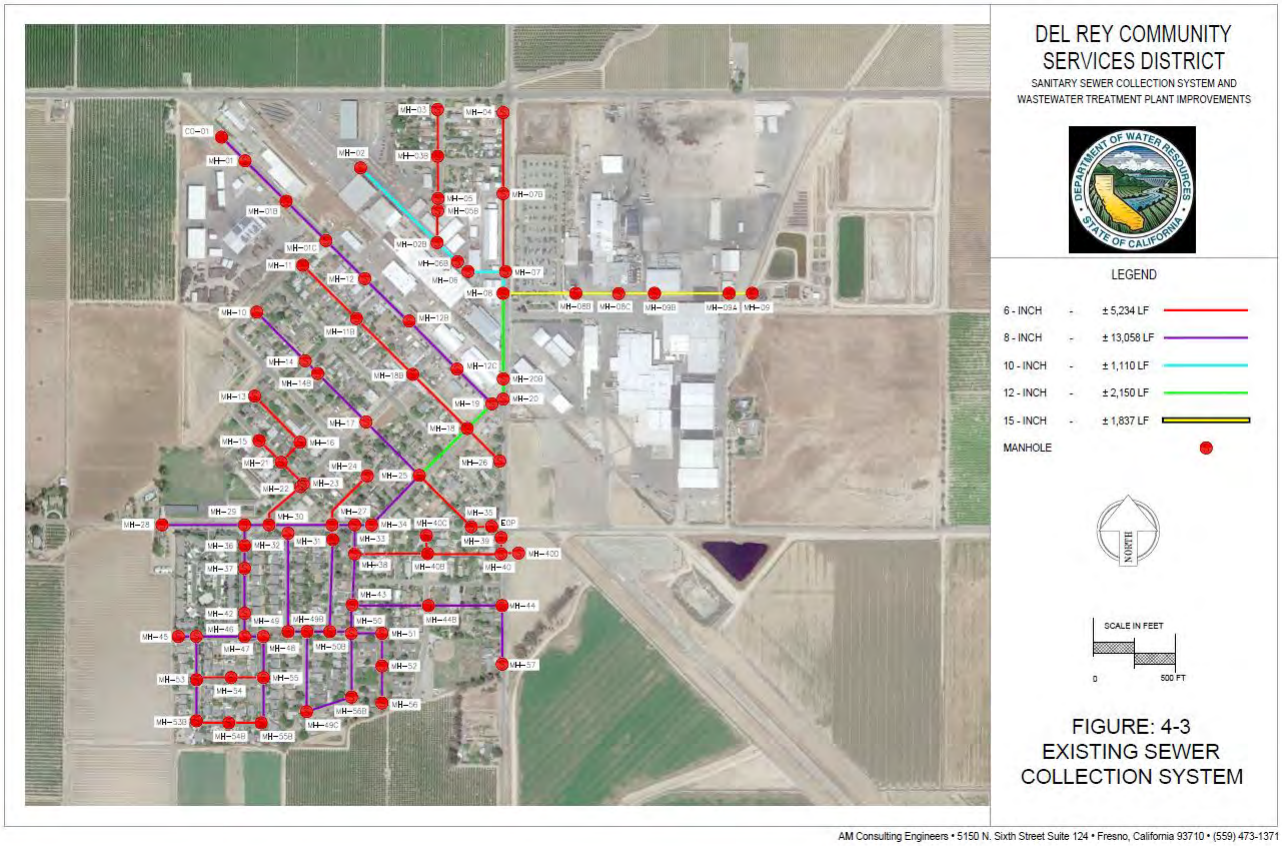

Figure 2
Del Rey Community Services District Sewer System Collection System Map

The following chronology is based on Parr and Osborne's Paleo-Indian, Proto-Archaic, Archaic, Post-Archaic periods (Parr and Osborne 1992:44-47). Most existing chronologies focus on stylistic changes of time-sensitive artifacts such as projectile points and beads rather than addressing the socioeconomic factors, which produced the myriad variations. In doing so, these attempts have encountered similar difficulties. These cultural changes are implied as environmentally determined, rather than economically driven.

Paleo-Indians, whom roamed the region approximately 12,000 years ago, were highly mobile individuals. Their subsistence is assumed to have been primarily big game, which was more plentiful 12,000 years ago than in the late twentieth century. However, in the Great Basin and California, Paleo people were also foragers who exploited a wide range of resources. Berries, seeds, and small game were also consumed. Their technology was portable, including manos (Parr and Osborne 1992:44). The paleo period is characterized by fluted Clovis and Folsom points, which have been identified throughout North America. The Tulare Lake region in Kings County has yielded several Paleo-Indian sites, which have included fluted points, scrapers, chipped crescents, and Lake Mojave-type points (Morratto 1984:81-2).

The Proto-Archaic period, which dates from approximately 11,000 to 8,000 years ago, was characterized by a reduction in mobility and conversely an increase in sedentism. This period is classified as the Western Pluvial Lake Tradition or the Proto-Archaic, of which the San Dieguito complex is a major aspect (Moratto 1984: 90-99; Warren 1967). An archaeological site along Buena Vista Lake in southwestern Kern County displays a similar assemblage to the San Dieguito type site. Claude Warren proposes that a majority of Proto-Archaic southern California could be culturally classified as the San Dieguito Complex (Warren 1967). The Buena Vista Lake site yielded manos, millingstones, large stemmed and foliate points, a mortar, and red ochre. During this period, subsistence patterns began to change. Hunting focused on smaller game and plant collecting became more integral. Large stemmed, lancelote (foliate) projectile points represents lithic technology. Millingstones become more prevalent. The increased sedentism possibly began to create regional stylistic and cultural differences not evident in the paleo period.

Figure 3
Project Area, Del Rey Avenue, View towards the North

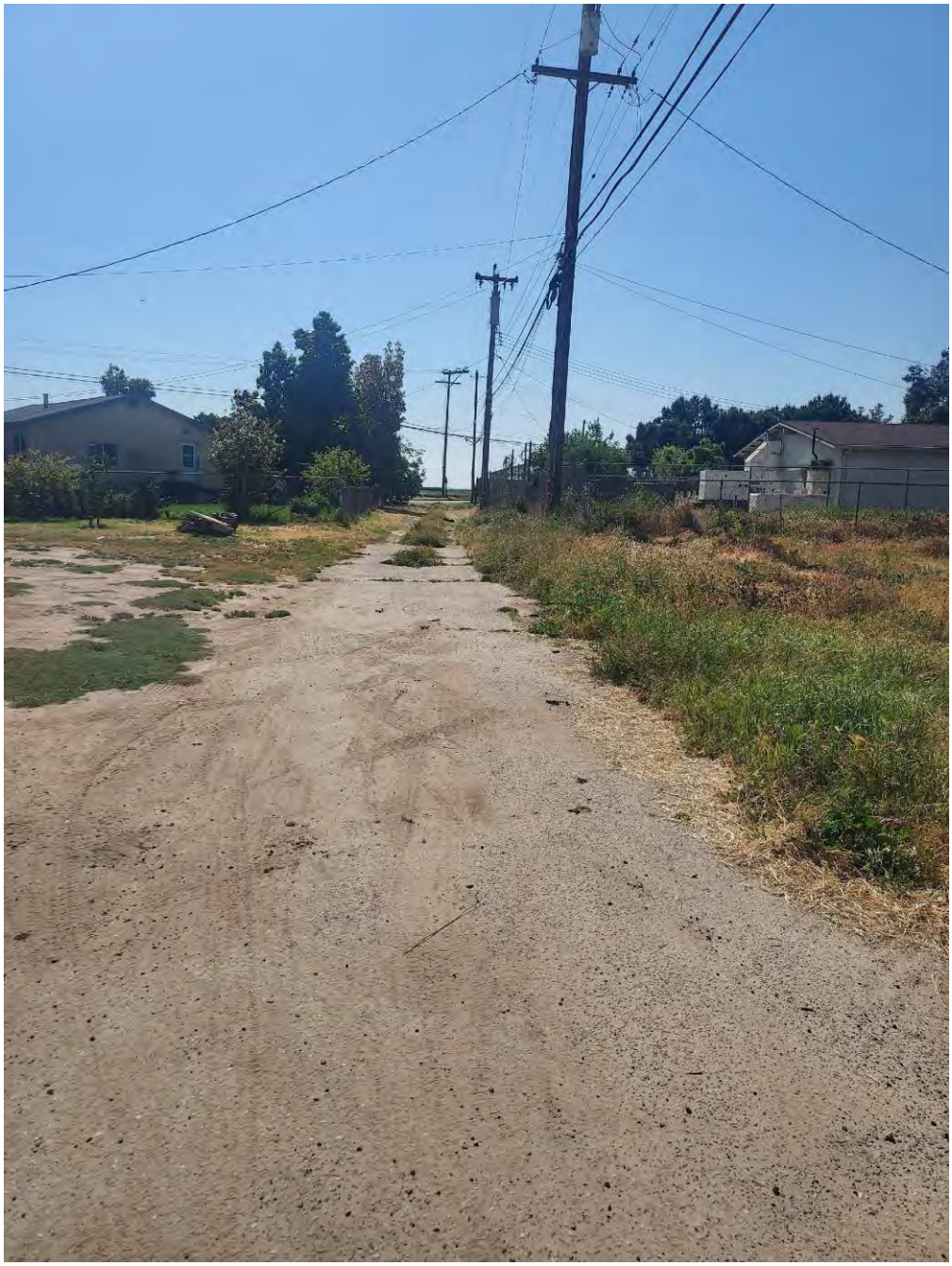

Figure 4
Project Area, Alley Way between Estrella and Del Rey Avenues, View to the Southwest

The Archaic period persisted in California for the next 4000 years. In 1959, Warren and McKusiak proposed a three-phase chronological sequence based on a small sample of burial data for the Archaic period (Moratto 1984:189; Parr and Osborne 1992:47). It is distinguished by increased sedentism and extensive seed and plant exploitation. Millingstones, shaped through use, were abundant. Bedrock manos and metates were the most prevalent types of millingstones (Parr and Osborne 1992:45). The central valley began to develop distinct cultural

variations, which can be distinguished by different regions throughout the valley, including Fresno County.

In the Post-Archaic period enormous cultural variations began manifesting themselves throughout the entire San Joaquin Valley. This period extends into the contact period in the seventeenth, eighteenth and nineteenth centuries. Sedentary village life was emblematic of the Post-Archaic period, although hunting and gathering continued as the primary subsistence strategy. Agriculture was absent in California, partially due to the dense, predictable, and easily exploitable natural resources. The ancestral Yokuts have possibly been in the valley for the last three thousand years, and by the eighteenth century were the largest pre-contact population, approximately 40,000 individuals, in California (Moratto 1984).

6.0 Ethnographic Background

The Yokuts are a Penutian-speaking, non-political cultural group. Penutian speakers inhabit the San Joaquin Valley, the Bay Area, and the Central Sierra Nevada Mountains. The Yokuts are split into three major groups, the Northern Valley Yokuts, the Southern Valley Yokuts, and the Foothill Yokuts.

The southern San Joaquin Valley in the Fresno area was home to the Yokuts tribelet, Choinumne. The tribelet had approximately 500 people, had a special name for themselves, and spoke a unique dialect of Yokuts. Land was owned collectively, and every group member enjoyed the right to utilize food resources. The Choinumne occupied the west bank of the Kings River, south of Dry Creek (Latta 1999).

The Southern Valley Yokuts had a mixed economy emphasizing fishing, hunting, fowling, and collecting shellfish, roots, and seeds. Fish were the most prevalent resource and was a productive activity throughout the entire year. Fish were caught in many different manners, including nets, conical basket traps, catching with bare hands, shooting with bows and arrows, and stunning fish with mild floral toxins. Geese, ducks, mud hens and other waterfowl were caught in snares, long-handled nets, stuffed decoys, and brushing brush to trick the birds to fly low into waiting hunters. Mussels were gathered and steamed on beds of tule. Turtles and dogs were consumed (Wallace 1978:449-450).

Wild seeds and roots provided a large portion of the Yokuts' diet. Tule seeds, grass seeds, fiddleneck, alfilaria were also consumed. Acorns, the staple crop for many California native cultures, were not common in the San Joaquin Valley. Acorns were traded into the area. Land mammals, such as rabbits, ground squirrels, antelope and tule elk, were not taken often (Wallace 1978:450).

The Yokuts occupied permanent structures in permanent villages for most of the year. During the late and early summer, families left for several months to gather seeds and plant foods, shifting camp locations when changing crops. Several different types of fiber-covered structures were common in Yokuts settlements. The largest was a communal tule mat-covered, wedge-shaped structure, which could house upward of ten individuals. These structures were established in a row, with the village chief's house in the middle and his messenger's houses were located at the ends of the house row. Dance houses and assembly buildings were located outside the village living area (Nabokov and Easton 1989:301).

The Yokuts also built smaller, oval, single-family tule dwellings. These houses were covered with tall mohya stalks or with sewn tule mats. Bent-pole ribs that met a ridgepole held by two crotched poles framed these small houses. The Yokuts also built a cone-shaped dwelling, which was framed with poles tied together with a hoop and then covered with tule or grass. These cone-shaped dwellings were large enough to contain multiple fireplaces (Nabokov and Easton 1989:301). Other structures included mat-covered granaries for storing food supplies, and a dirt-covered, communally owned sweathouse.

Clothing was minimal, men wore a breechclout or were naked. Women wore a narrow-fringed apron. Cold temperatures brought out rabbitskin or mud hen blankets. Moccasins were worn in certain places; however, most people went barefoot. Men wore no head coverings, but women wore basketry caps when they carried burden baskets on their heads. Hair was worn long. Women wore tattoos from the corners of the mouth to the chin; both men and women had ear and nose piercings. Bone, wood or shell ornaments were inserted (Wallace 1978:450-451).

Tule dominated the Yokut's material culture. It was used for many purposes, including sleeping mats, wall coverings, cradles, and basketry. Ceramics are uncommon to Yokuts culture as is true throughout most California native cultures. Basketry was common to Yokuts culture. Yokuts made cooking containers, conical burden baskets, flat winnowing trays, seed beaters, and necked water bottles. Yokuts also manufactured wooden digging sticks, fire drills, mush stirrers, and sinew-backed bows. Knives, projectile points, and scraping tools were chipped from imported lithic materials including obsidian, chert, and chalcedony. Stone mortars and pestles were secured in trade. Cordage was manufactured from milkweed fibers, animal skins were tanned, and awls were made from bone. Marine shells, particularly olivella shells, were used in the manufacture of money and articles of personal adornment. Shells were acquired from the Chumash along the coast (Wallace 1978:451-453).

The basic social and economic unit was the nuclear family. Lineages were organized along patrilineal lines. Yokuts fathers transmitted totems, particular to each paternal lineage, to each of his children. The totem was an animal or bird that no member would kill or eat and that was dreamed of and prayed to. The mother's totem was not passed to her offspring; but was treated with respect. Families sharing the same totem formed an exogamous lineage. The lineage had no formal leader nor did it own land. The lineage was a mechanism for transmitting offices and performing ceremonial functions. The lineages formed two moieties, East and West, which consisted of several different lineages. Moieties were customarily exogamous. Children followed the paternal moiety. Certain official positions within the villages were associated with certain totems. The most important was the Eagle lineage from which the village chief was appointed. A member of the Dove lineage acted as the chief's assistant. He supervised food distribution and gave commands during ceremonies. Another hereditary position was common to the Magpie lineage, was that of spokesman or crier.

7.0 Historical Overview

Fresno County was settled in the 1850s, soon after California joined the United States after the passage of the Compromise of 1850. The Compromise of 1850 allowed California to join the Union as a free state even though a major portion of the state lay beneath the Missouri

Compromise line; and was potentially subject to southern settlement and slavery. Americans had long been visiting and working in California prior to the admission of California into the Union.

The Spanish moving north from Baja California into Alta California began European settlement of California 1n 1769. Father Junipero Serra, a Franciscan friar founded Mission San Diego de Alcala, beginning California active European settlement. However, Spanish mission efforts were focused on California's coastal regions. Spanish exploration of the San Joaquin Valley region begins in the 1770s. In 1772, Pedro Fages arrived in the San Joaquin Valley searching for army deserters. Father Francisco Garces, a Franciscan priest, soon visited the vicinity in 1776. The Spanish empire collapsed in 1820, all of Spain's former Central and South American colonies became independent nations. As a result, California became Mexican territory. California stayed in Mexican hands until the Mexican-American War. Mexican California remained a coastal society with little interest in settling in California's hot, dry interior valleys.

American exploration of the San Joaquin Valley begins in the 1820s with Jedediah Smith, Kit Carson, and Joseph Walker looking for commercial opportunities. The United States government began exploring California in the 1830s. Soon, the Americans will be searching for intercontinental railroad routes to link the eastern and western halves of the continent.

The defeat of the Mexicans during the Mexican-American War and the subsequent discovery of gold will drastically alter the complicated political realities of the west. The Mexican-American War was ostensible fought to settle a boundary dispute with the Mexicans over the western boundary of the newly-annexed state of Texas, which had fought a successful rebellion against the Mexican Army in the mid 1830s. The Republic of Texas was an independent country for nine years until Texas was annexed by the United States in 1845. One major outcome of the Mexican-American War was that Mexico rescinded its claims to much of the American southwest. In 1848 these territories were folded into the United States, including California.

In January 1848, the discovery of gold in Coloma, California changed the settlement of California, forever. In the summer of 1848, when the gold strike was publicly announced, the overnight settlement of California began. The Mexican population of California was small and limited to the coasts and a few of southern California's interior valleys. A sizable native population settled the remainder of California; Fresno County was Yokuts territory. The Gold Rush tipped the balance of native communities throughout California, as many of California's natives were decimated.

In 1856, Fresno County was created from the northern half of Tulare County. The first county seat was at Millerton. Anthony Easterby established a wheat farm in 1867 in what would become Fresno. By 1871, he created an irrigation system and in 1872, the Central Pacific Railroad established a nearby rail stop. By 1885, Fresno had grown to the point that it incorporated as a city.

While farmers were settling the valley, cattle ranchers, timber mill operators, and resort operators settled the heavily timbered highlands of the southern Sierra Mountains. Road builders, such as John Jordan, opened the mountains, following native (Yokuts) trails into the

mountains. By 1865, timber mills were found in the general vicinity, and were responsible for opening areas for settlement and for providing lumber to fuel the local economy. Cattle ranchers and shepherds grazed their animals throughout the region until 1903, when the laws changed.

As access to the San Joaquin Valley was secured via new and better roads, the mountains opened to permanent settlements. Small towns were established, such as Springville. Avon M. Coburn founded Springville in 1890. Coburn established a box factory and sawmill along the Tule River, near where Bear Creek empties into the middle fork of the Tule River. Springville flourished connecting the Tule River valley to the San Joaquin Valley via the wagon road to Porterville, which had been established in 1864.

As the areas to the west grew, the need for steady economical power arose. Albert Wishon, a local real estate agent, convinced the new (1895) San Joaquin Power Company, (later the San Joaquin Light and Power Company), which later merged with Pacific Gas and Electric Company in 1930, to build a hydroelectric dam on the Tule River in 1900. The pack road east of Springville was upgraded to a wagon road, and Camp Wishon was established as a construction camp, located below the Doyle Ranch. Construction on the power plant began in 1904. The power plant not only provided reliable power to the San Joaquin Valley to the west, but also opened areas to the east.

Del Rey was originally called Clifton, which honored Clift Wilkinson, the town founder. Clifton was renamed by the Atchison, Topeka and Santa Fe railroad in 1898 to Del Rey. The railroad station was named after Rancho del Rey, the farm on which the station was located. Del Rey is a Spanish phrase meaning "of the king". A post office opened in 1885. Del Rey is a farm community whose economic center was fruit packing house. Currently, Pom Wonderful is the largest packer and juicer in Del Rey, however, several other smaller packing houses are present, packing other fruits. The Pom Wonderful property was packing apples, before it was converted to pomegranates.

8.0 Field Procedures and Methods

Between April 19, and May 2, 2025, Scott M. Hudlow (for qualifications see Appendix I) conducted a pedestrian cultural resource survey of the entire proposed project area. Hudlow surveyed the entirety of the Sanitary Sewer Collection System and Wastewater Treatment Plant Improvement Project in both east/west and north/south transects across the entire project area.

9.0 Report of Archaeological Findings

One cultural resource was identified, the Garfield Ditch, CA-FRE-003905H. Garfield Ditch is a branch off the Consolidated Canal, which originates at the Kings River near Trimmer. It is an unlined ditch, approximately fifteen feet wide and five feet deep. The Garfield Ditch is located between the Pom Wonderful property to the west and the Del Rey Community Services District Lift Station to the east. It is travelling in a north/south direction at grade. It is diverted under the Pom Wonderful property into a pipe and remerges on the west side of Del Rey Avenue at grade (Figure 5).

Figure 5
Project Area, Garfield Ditch, CA-FRE-003905H, View to the North

10.0 Management Recommendations

At the request of Crawford and Bowen Planning, a Phase I Cultural Resource Survey was conducted in Del Rey for the Sanitary Sewer Collection and Wastewater Treatment Plant Improvements for the Del Rey Community Services District throughout Del Rey, Fresno

County, California. The Phase I Cultural Resource Survey consisted of a cultural resource survey and a cultural resource record search.

One cultural resource was identified, the Garfield Ditch, CA-FRE-003905H. The Garfield **Ditch is located directly to the west of the Del Rey Community Service District's lift station,** which already avoids any direct impact to the cultural resource, presumably by boring underneath the Garfield Ditch. A second cultural resource, the Atchison, Topeka and Santa Fe spur line has been removed throughout Del Rey and the associated areas of Fresno County, both to the south and north. The Garfield Ditch brings water down from the Kings River to the northeast. It was built during the twentieth-century, and is a typical unlined agricultural ditch for the conveyance of water. As such, the Garfield Ditch is not associated with any significant events at the local, state or regional levels; thus, the property is not eligible for listing on the California Register under Criterion 1. Research failed to identify anyone at this location that has made a substantial contribution to local or national historical events; thus, the property is not eligible for listing on the California Register under Criterion 2. The Garfield Ditch does no retain the characteristics that reflect a type, period, or method of construction associated with a master craftsman; thus, the property is not eligible for listing on the California Register under Criterion 3. Finally, the property retains no research potential that can not be gleaned from archival research; thus, the property is not eligible for listing on the California Register under Criterion 4.

No further work is required. If cultural resources are encountered during the course of construction, a qualified archaeologist should be consulted for further evaluation.

If human remains or potential human remains are observed during construction, work in the vicinity of the remains will cease, and the remains will be treated in accordance with the provisions of State Health and Safety Code Section 7050.5. The protection of human remains follows California Public Resources Codes, Sections 5097.94, 5097.98, and 5097.99.

11.0 References

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Varner, Dudley

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Warren, Claude N.

1967 "The San Dieguito Complex: A Review and Hypothesis" *American Antiquity* 32(2): 168-185.

Appendix I

Scott M. Hudlow
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Education

The George Washington University
M.A. American Studies, 1993
Specialization in Historical Archaeology
and Architectural History

University of California, Berkeley
B.A. History, 1987
B.A. Anthropology, 1987
Specialization in Historical Archaeology
and Colonial History

Public Service

3/94-12/02 *Historic Preservation Commission.* City of Bakersfield, Bakersfield, California 93305.

7/97-12/01 *Newsletter Editor. California History Action,* newsletter for the California Council for the Promotion of History.

Relevant Work Experience

8/96- *Adjutant Faculty.* Bakersfield College, 1801 Panorama Drive, Bakersfield, California, 93305. Teach History 17A, Introduction to American History and Anthropology 5, Introduction to North American Indians.

Owner, Sole Proprietorship. Hudlow Cultural Resource Associates. 1405 Sutter Lane, Bakersfield California 93309. Operate small cultural resource management business. Manage contracts, respond to RFP's, bill clients, manage temporary employees. Conduct Phase I archaeological and architectural surveys for private and public clients; including the cultural resource survey, documentary photography, measured drawings, mapping of structures, filing of survey forms, historic research, assessing impact and writing reports. Evaluated archaeological and architectural sites and properties in lieu of their eligibility for the National Register of Historic Places in association with Section 106 and 110 requirements of the National Historic Preservation Act of 1966 and CEQA (California Environmental Quality Act).

Full resume available upon request.

Appendix II

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004675		Resource Name - Burlington Northern Santa Fe Railway; Other - CRM TECH 607-2H	Structure	Historic	HP19; HP37	2000 (Bai "Tom" Tang, CRM TECH); 2019 (Robert Azpitarte, ASM Affiliates, Inc.)	FR-01699, FR-03029
P-10-007126		Resource Name - T-Mobile West, LLC Candidate SC08733 (Del Rey); Resource Name - PG&E Lattice Tower #1-McCall-Sanger	Structure	Historic	HP11	2017 (K.A. Crawford, Crawford Historical Services)	FR-02962
P-10-007226	CA-FRE-003905H	Resource Name - Garfield Ditch; Other - (AE-4176-001)	Structure	Historic	HP20	2020 (Carlos van Onna, Applied EarthWorks, Inc.)	FR-03025

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00660	Submitter - CRF-90-106	1990	Ptomey, Kathy	An Archaeological Survey for 20 Acres in Del Rey, Fresno County	Cultural Reosurce Facility, California State University, Bakersfield	
FR-01814		2002	Varner, Dudley M.	A Cultural Resource Study for the Self-Help Affordable Housing Project In Del Ray, Fresno County, California	Varner Associates	
FR-02060		2004	Billat, Scott	Request for SHPO Review of FCC Undertaking (Del Rey/CA-1283A)	EarthTouch, Inc.	
FR-02656	Submitter - EBI Project #61136105	2014	Greenberg, Gregory	Cultural Resources Survey DT Del Rey / Ensite #16630 (263600) 5054 South Portola, Del Rey, Fresno County, California 93616	EBI Consulting	
FR-02962	IC Record Search Nbr - 17-091	2017	Pearson, Jeffrey E.	Cultural Resources Records Search and Site Visit for T-Mobile West, LLC Candidate SC08733 (Del Rey), 10489 East Jefferson Avenue, Del Rey, Fresno County, California	Evironmental Assessment Specialists, Inc.	10-007126
FR-02962A		2017	Crawford, Kathleen A.	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SC08733 (Del Rey), 10489 East Jefferson Avenue, Del Rey, Fresno County, California.	Evironmental Assessment Specialists, Inc.	