Public Review Draft

# SIDESTREAM TREATMENT SYSTEM PROJECT AT THE FRESNO-CLOVIS REGIONAL WASTEWATER RECLAMATION FACILITY

## Initial Study/Mitigated Negative Declaration

Prepared for
City of Fresno

December 2024

ESA

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## Initial Study/Mitigated Negative Declaration

Prepared for
City of Fresno

December 2024

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CITY OF FRESNO

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR SIDESTREAM TREATMENT SYSTEM PROJECT AT THE FRESNO-CLOVIS REGIONAL WASTEWATER RECLAMATION FACILITY

NOTICE IS HEREBY GIVEN that the City of Fresno (City) plans to adopt a Mitigated Negative Declaration for the Sidestream Treatment System Project at the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) (Project).

In 2018, the Central Valley Regional Water Quality Control Board (RWQCB) made changes to the Water Quality Control Plan for the San Joaquin River Basin by adding a Salt and Nitrate Management Plan (SNMP). This plan serves as the foundation for monitoring salt and nitrate levels across the Central Valley. The City has a land-based disposal permit operating under the Waste Discharge Permit (WDR) at the RWRF. To address nitrogen discharges from the RWRF and comply with the SNMP, the City is preparing to upgrade its facilities. This upgrade aims to meet the expected nitrate target through the Sidestream Treatment System at the RWRF.

The City's Department of Public Utilities proposes to construct new sidestream treatment facilities to remove nitrogen from the solids dewatering flows characterized by high concentrations of ammonia. The existing treatment processes at the RWRF cannot fully denitrify the sidestream flows. By constructing a deammonification system, the sidestream flows effluent will meet the anticipated new RWQCB nitrate regulatory limits, supporting the objectives of the SNMP.

The Project components include the following:

1. Modifications to the existing solids dewatering sidestream pipe
2. Construction of:
    a. Hydraulic control structure
    b. Equalization basin and deammonification reactor
    c. Process control building (blower and electrical rooms)
    d. Chemical feed system

Pursuant to Section 15063 of the California Environmental Quality Act (CEQA), an Initial Study/Mitigated Negative Declaration has been prepared, describing the degree of potential environmental impacts of the Project. The City has assessed the potential environmental impacts of this Project and has determined that they will be less than significant.

The City of Fresno is designated the Lead Agency, in accordance with Section 15050 of the CEQA Guidelines. The Lead Agency is the public agency which has the principal responsibility for approving the necessary environmental clearances and analyses for any project in the City of Fresno. Copies of the Initial Study and proposed Mitigated Negative Declaration are on file and available for public review at the City Clerk, Fresno City Hall, 2nd Floor, Room 2133, 2600 Fresno Street, Fresno, CA 93721. A copy of the IS/MND has also been made available at the following website:

https://www.fresno.gov/cityclerk/notices-and-publications/. The public review period during which the City will receive comments on the proposed Mitigated Negative Declaration will begin **on December 12, 2024, and end on January 16, 2025**.

This public notice provides staff's finding in the manner prescribed by § 15072 of the CEQA Guidelines and by § 21092 of the PRC Code (CEQA provisions).

Additional information on the proposed project and proposed environmental finding of a Mitigated Negative Declaration and the Initial Study may be obtained from the Fresno City Hall, 2nd Floor, Room 2133, 2600 Fresno Street, Fresno, CA 93721. Please contact Debbie Khounsavath at (559) 621-1624 for more information or by e-mail at Debbie.Khounsavath@fresno.gov. Para información en español, comuníquense con Jaime Sandoval (al número de teléfono 559-621-8613). **ANY INTERESTED PERSON** may comment on the proposed environmental finding. Comments must be in writing and must state (1) the commentor's name and address; (2) the commentor's interest in, or relationship to, the project; (3) the environmental determination being commented upon; and (4) the specific reason(s) why the proposed environmental determination should or should not be made. Any comments may be submitted at any time between the publication date of this notice and close of business on **January 16, 2025**. Please direct comments to Debbie Khounsavath, 1626 E. Street, Fresno, California, 93706; or by email to Debbie.Khounsavath@fresno.gov.

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## Sidestream Treatment System Project at the Fresno-Clovis Regional Wastewater Reclamation Facility, Initial Study/Mitigated Negative Declaration



### Figures

## Tables



## Appendices

# ENVIRONMENTAL CHECKLIST

## Initial Study

1. **Project Title:** Sidestream Treatment System Project at The Fresno-Clovis Regional Wastewater Reclamation Facility

2. **Lead Agency Name and Address:** City of Fresno
2600 Fresno Street
Fresno, CA 93721

3. **Contact Person and Phone Number:** Cassie Scholz
(559) 621-1602

4. **Project Location:** 5607 W. Jensen Ave. Fresno, CA 93706

5. **Project Sponsor's Name and Address:** City of Fresno
Department of Public Utilities
1626 E. Street
Fresno, CA 93706

6. **General Plan Designation(s):** Waste Water Treatment Facility

7. **Zoning:** Public and Institutional

8. **Description of Project:** See Project Description

9. **Surrounding Land Uses and Setting:**

| Direction from Project Site | Planned Land Use | Existing Zoning | Existing Land Use |
|---|---|---|---|
| **North** | Agricultural 20-acre minimum parcel size | AE20 | Agricultural and rural residential |
| **East** | Agricultural 20-acre minimum parcel size | AE20 | Agricultural and rural residential |
| **South** | Agricultural 20-acre minimum parcel size | AE20 | Agricultural |
| **West** | Agricultural 20-acre minimum parcel size | AE20 | Agricultural |

10. **Other public agencies whose approval is required:** See Table 1-1

11. **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, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** Yes

*Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.*

# 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 and Forestry 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 |

## DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

☐ 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.

Debbie Khounsavath

Debbie Khounsavath, Planner II

12/6/2024

Date

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# CHAPTER 1
# Project Description

## 1.1 Introduction and Background

The City of Fresno (City) owns the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF). The RWRF is operated by the Department of Public Utilities (DPU), with an average annual rated capacity of 91.5 million gallons per day (mgd) and a maximum month rated capacity of 101 mgd. A portion of the service area encompasses a part of the City of Clovis (Clovis). Based on an joint powers agreement (JPA) between the City and Clovis, a portion of the RWRF capacity is allocated to Clovis. The City has a land-based disposal permit operating under Waste Discharge Requirements (WDR) R5-2018-0080.

In 2018, the Central Valley Regional Water Quality Control Board (Regional Board) amended the Water Quality Control Plan for the San Joaquin River Basin (Basin Plan) to incorporate a Central Valley-wide Salt and Nutrient Management Planning (SNMP) (Resolution R5-2018-0034). The SNMP lays the groundwork for monitoring salts and nitrate throughout the Central Valley. As a result, the City is expected to receive a new WDR in the next few years that will limit effluent nitrate concentrations to 10 milligrams per liter (mg/L) nitrate nitrogen (NO3-N), with an Action Plan required at an effluent nitrate concentration of 7.5 mg/L NO3-N. While the RWRF does remove some nitrogen, performance upgrades are needed to progress towards meeting these anticipated nitrate targets. The City proposes upgrades to the RWRF which include a biological process on the dewatering sidestream that converts ammonia to nitrogen gas, which will reduce the total nitrogen discharged from the plant (Proposed Project).

## 1.2 Project Description

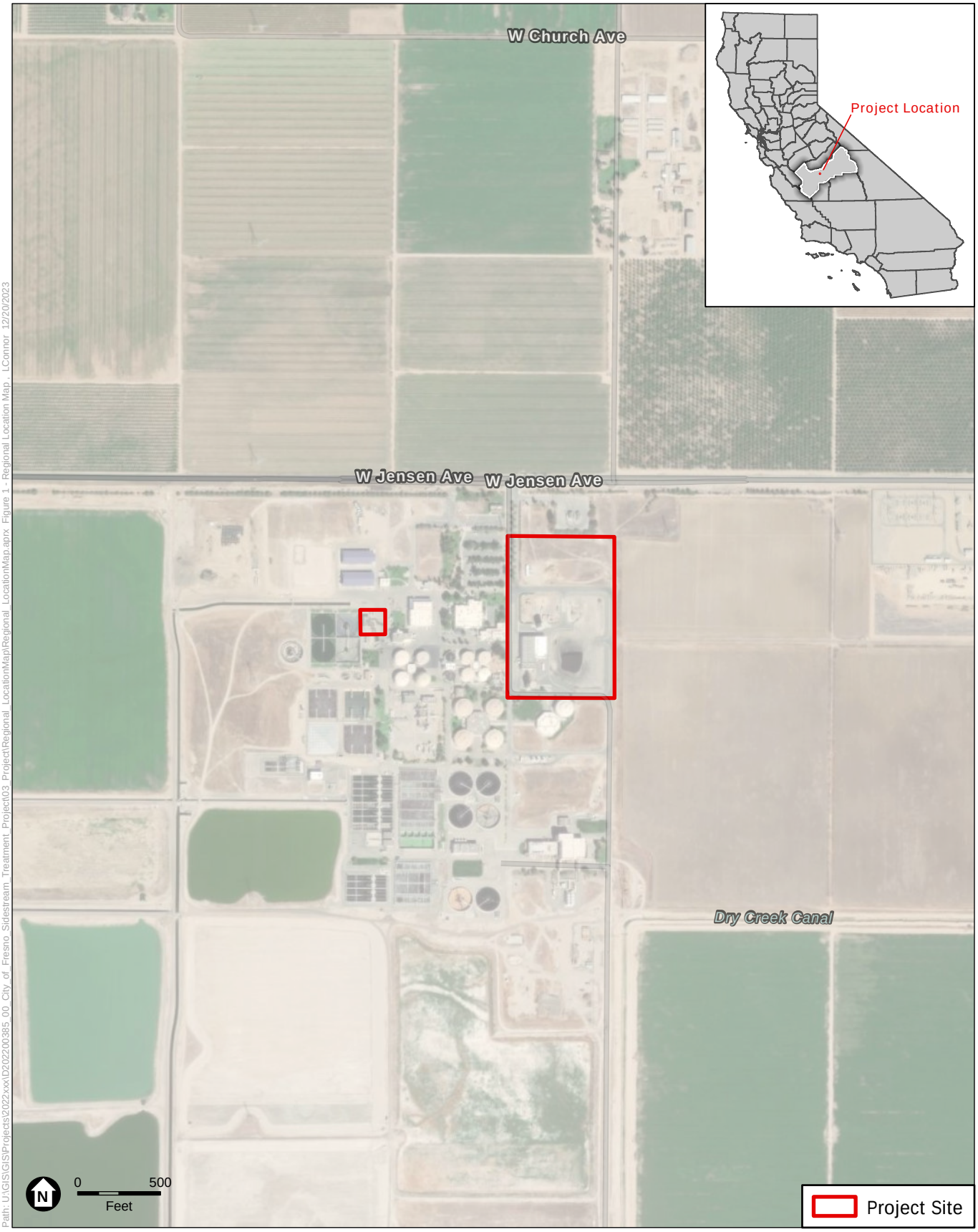
### 1.2.1 Project Location and Existing Facilities

The location of the Proposed Project (referred to in this document as the "Proposed Project site") is within the boundaries of the existing RWRF in southwest Fresno at the intersection of West Jensen Road and South Cornelia Avenue (**Figure 1-1**). The RWRF is approximately 3,300 acres.

The Proposed Project site is zoned public and institutional on land that has been previously disturbed and/or developed for the existing RWRF. The Proposed Project site is currently an asphalt paved area used for equipment lay down for construction projects and miscellaneous work at the plant. New inlet and outlet pipeline alignments would follow along a path that is currently paved.

### 1.2.2 Project Objective

The objective of the Proposed Project is the construction and installation of sidestream treatment infrastructure to reduce effluent nitrate concentrations and meet new nitrate targets.




Path: U:\GIS\GIS\Projects\2022xxx\D202200385_00_City_of_Fresno_Sidestream_Treatment_Project\03_Project\Regional_LocationMap\Regional_LocationMap.aprx, Figure 1 - Regional Location Map , LConnor 12/20/2023

SOURCE: ESA, 2023

City of Fresno Sidestream Treatment Project

**Figure 1-1**
Regional Location Map

ESA

## 1.2.3 Project Description

### Site Preparation

In order to construct the Proposed Project, the asphalt pad within the Proposed Project site would be removed. In addition, The Proposed Project site would be cleared of existing and abandoned utilities to allow for excavation to a depth of approximately 26 feet for the buried equalization basins and treatment reactors (process reactors). See **Figure 1-2** for a plan view of the Proposed Project.

Construction and/or installation of each Proposed Project element would occur as described in the following sections.

### Intercept Existing Drain Line from Dewatering Building Before it Mixes with Site Drainage

The Proposed Project would include intercepting the filtrate and centrate drain lines (collectively referred to as sidestream) from each existing belt filter press and centrifuge in the sludge dewatering facility. A new combined sidestream pipe would be routed in an existing utility trench. The floor slab in the sludge dewatering facility would be sawcut to route the sidestream pipe from the utility trench to the yard via gravity.

### Two Process Reactors and Two Equalization Basins

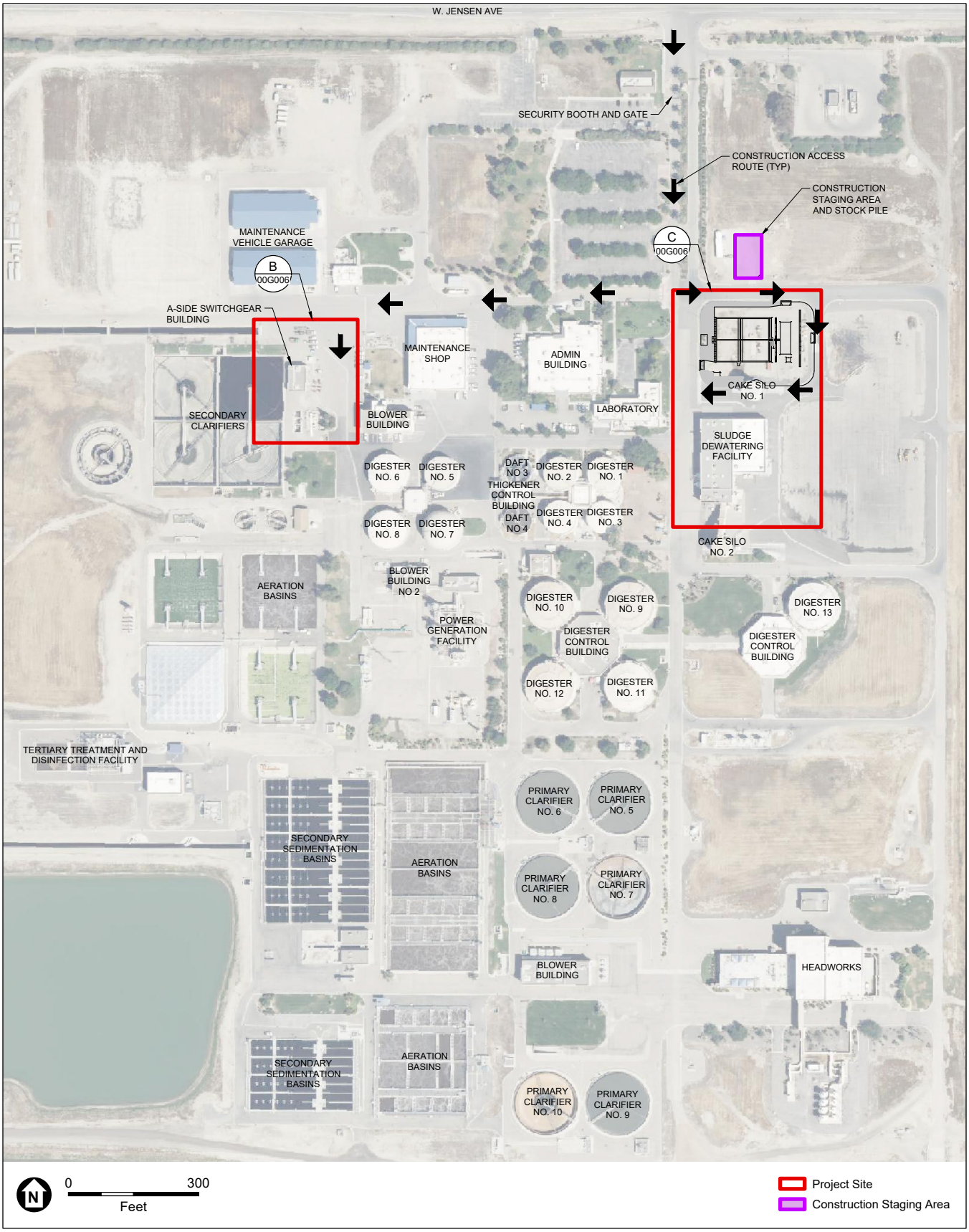
The equalization basins and deammonification reactors and Hydraulic Control Structure would be cast-in-place, water-bearing, concrete structures. The Hydraulic Control Structure would be approximately 150 square feet (sq ft) and the equalization basins and deammonification reactors would be approximately 13,000 sq ft. After laying the utilities and duct banks in the yard, the structures would be backfilled and compacted. Excess soil would be hauled offsite. Cast-in-place concrete slabs would be poured for the Chemical and Compressor Area and the Process Control Building. A metal deck shade structure, approximately 300 sq ft would cover the chemical feed pump skid and compressor skids. Aeration manifolds would be mounted to the equalization basin and treatment reactor floors. Submerged impeller mixers would be mounted on walkways above the treatment reactors.

### Process Control Building to House Blowers and Electrical and Controls Equipment

A concrete masonry unit building would house the blower skids in one room and electrical and controls equipment in another room. Power for new equipment and instrumentation would come from the A Side Switchgear Building and cables would be routed primarily through existing duct banks to a new medium voltage transformer at the Project site. The Process Control Building would be 24 feet by 74 feet or 1,776 sq ft.

### Pump Treated Sidestream to Existing Headworks

The treated sidestream would flow by gravity back into the existing storm drain system, which routes to the plant drain pump station. Then it is sent to the headworks to be treated through the mainstream process.




SOURCE: Carolla, 2024

City of Fresno Sidestream Treatment Project

**Figure 1-2**
Site Location

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### 1.2.4 Construction Equipment and Schedule

Construction activities for the Proposed Project would last approximately 30 months, up to approximately 8 hours per day, Monday through Friday, and are anticipated to begin in late 2024 expected to use the following equipment:

## 1.3 Project Operations and Maintenance

Equipment functional testing and process performance testing will be performed by the contractor as part of the startup and commissioning of the Proposed Project. Instrumentation and controls will be programmed so that they are integrated into the City's existing plant-wide control system. It is anticipated existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF.

### 1.3.1 Responsible Agencies, Permits, and Approvals

**Table 1-1** summarizes the permits and/or approvals that may be required before construction of the Proposed Project.

**TABLE 1-1**
**REGULATORY REQUIREMENTS, PERMITS, AND AUTHORIZATIONS FOR PROJECT FACILITIES**

| Jurisdiction | Agency | Type of Approval |
|---|---|---|
| Federal Agencies | N/A | |
| State Agencies | Central Valley Regional Water Quality Control Board | NPDES General Permit for Stormwater Discharge Associated with Construction |
| | Cal/OSHA | Construction or Excavation Permit |
| Local Agencies | City of Fresno Planning and Development Department | Building Permit and Grading Permit |

NOTES: Cal/OSHA = California Division of Occupational Safety and Health; N/A = not applicable; NPDES = National Pollutant Discharge Elimination System

SOURCE: Data compiled by Environmental Science Associates in 2021

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# CHAPTER 2
# Environmental Checklist

## 2.1 Aesthetics

| Issues (and Supporting Information Sources): | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **I. AESTHETICS —** Except as provided in Public Resources Code Section 21099, would the project: | | | | |
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☐ | ☒ |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☐ | ☒ |
| c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | ☐ | ☐ | ☒ | ☐ |
| d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

### 2.1.1 Environmental Setting

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the public's benefit. It is usually viewed from some distance away. Aesthetic components of a scenic vista include (1) scenic quality; (2) sensitivity level; and (3) view access. A scenic vista can be impacted in two ways: a development project can have visual impacts by either directly diminishing the scenic quality of the vista or by blocking the view corridors or "vista" of the scenic resource. The Fresno General Plan does not identify or designate scenic vistas within the City's current City limits and Sphere of Influence; however, it does identify six locations along the San Joaquin River bluffs as designated vista points from which views should be maintained. (City of Fresno 2014). The Proposed Project is located over 11 miles to the southwest of the San Joaquin River bluffs.

#### Visual Environment

The Proposed Project site is within a developed area of the existing Fresno-Clovis RWRF. The nearest officially-designated State Scenic Highway is located more than 30 miles northeast of the Fresno Planning Area within the county of Madera (Caltrans 2018. According to the Caltrans State Scenic Highway Mapping System, there are no eligible or officially-designated State Scenic Highways within the City of Fresno (Caltrans 2018).

## 2.1.2 Discussion

a) **No Impact.** No designated scenic vistas or notable geographic features have been identified at or near the Proposed Project site (City of Fresno 2014). Implementation of the Proposed Project would not obstruct existing views of the Sierra Nevada. As a result, no impact on a scenic vista would occur.

b) **No Impact.** The Proposed Project site is not within a California State Scenic Highway (Caltrans, 2018). The nearest officially designated State Scenic Highway is located more than 30 miles northeast of the Planning Area within the county of Madera. (Caltrans 2018). There are no eligible or officially-designated State Scenic Highways within or in close proximity to the Proposed Project site, implementation of the Proposed Project would not damage scenic resources within a designated state scenic highway. Therefore, no impact on scenic resources would occur.

c) **Less than Significant.** The Proposed Project site is zoned public and institutional on land that has been previously disturbed and/or developed for the existing RWRF. The construction and installation of the proposed sidestream treatment infrastructure would be consistent with the visual character of the existing water treatment facility. The Proposed Project would not conflict with applicable zoning and other regulations governing scenic quality therefore, this impact would be less than significant.

d) **Less than Significant.** Construction of the Proposed Project would occur during the daytime and would not require nighttime lighting. The Proposed Project would involve minimal exterior lighting for safety purposes, and such lighting would be consistent with the existing RWRF facilities. The Proposed Project does not propose shiny or reflective surfaces that would represent potential sources of glare. The process control building would be constructed of concrete masonry unit (CMU) blocks to match existing plant infrastructure. Other facilities, as part of the Proposed Project, would be industrial in nature and consistent with the existing RWRF facilities. Therefore, impacts related to new sources of light and glare would be less than significant.

## 2.1.3 References

California Department of Transportation (Caltrans). 2018. California State Scenic Highway System Map. Available: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed November 6, 2023.

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.2 Agriculture and Forestry Resources

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **II. AGRICULTURE AND FORESTRY RESOURCES —** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.2.1 Environmental Setting

The Proposed Project is located within the existing RWRF. The Project site is zoned public and institutional (Fresno 2014). The Project site is not under an active Williamson Act contract (Conservation 2024). No existing agricultural or timber-harvest uses are located on, or in the vicinity of the Project site (Fresno 2014).

## 2.2.2 Discussion

a, b) **No Impact.** The Proposed Project would be constructed and operated within the existing RWRF. The Project site is zoned public and institutional and does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. In addition, the Project site is not zoned for agricultural uses and is not under a Williamson Act contract. Therefore, no impact would occur.

c, d) **No Impact.** As described previously, the Proposed Project would be constructed and operated within the existing RWRF and the Project site is zoned public and institutional. The Project site is not forested or used for timber-harvest operations. Therefore, no impact would occur.

d) **No Impact.** The Proposed Project would be constructed and operated entirely within the existing RWRF. New facilities would be added to the existing RWRF to reduce effluent nitrate

concentrations. The Project site does not contain any farmland or forest land and therefore would not result in the conversion of farmland or forest land to non-agricultural use or non-forest use. Therefore, no impact would occur.

## 2.2.3 References

California Department of Conservation (Conservation). 2024. California Williamson Act Enrollment Finder. Available at: DLRP Important Farmland Finder (ca.gov). Accessed January 15, 2024.

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.3 Air Quality

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **III. AIR QUALITY —** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project: | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | ☐ | ☐ | ☒ | ☐ |
| c) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

## 2.3.1 Environmental Setting

The Proposed Project site is located in Fresno County in the southern portion of the San Joaquin Valley Air Basin (SJVAB). The SJVAB is defined by the Sierra Nevada in the east (8,000–14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000–8,000 feet in elevation). The valley is basically flat, with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Strait, where the waters of the Sacramento–San Joaquin Delta empty into San Francisco Bay.

The SJVAB has an inland Mediterranean climate, averaging more than 260 sunny days per year. The valley floor experiences warm, dry summers and cool, wet winters. Summer high temperatures often exceed 100 degrees Fahrenheit (°F), averaging in the low 90s in the northern valley and high 90s in the south. In the entire SJVAB, high daily temperature readings in summer average 95°F. Over the last 30 years, the SJVAB averaged 106 days per year of 90°F or hotter and 40 days per year of 100°F or hotter. The daily summer temperature variation can be as much as 30°F.

In winter, as the cyclonic storm track moves southward, the storm systems moving in from the Pacific Ocean bring a maritime influence to the SJVAB. The high mountains to the east prevent the cold, continental air masses of the interior from influencing the valley. Winters are mild and humid. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily winter low temperature is 45°F.

### Criteria Air Pollutants

Concentrations of criteria air pollutants are used as indicators of ambient air quality conditions. Source types, health effects, and future trends associated with each air pollutant are described below along with the most current attainment area designations and monitoring data for the Project area and vicinity.

### *Ozone*

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen ($NO_X$). ROG and $NO_X$ are known as precursor compounds for ozone.

Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is considered both a secondary and regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and $NO_X$ under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

### *Carbon Monoxide*

Ambient carbon monoxide (CO) concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence CO concentrations. Under inversion conditions, CO concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the blood's oxygen-carrying capacity. This reduces the amount of oxygen that can reach the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, and for fetuses.

CO concentrations have declined dramatically in California as a result of existing controls and programs. Most areas of the state, including the region surrounding the Proposed Project site, have no problem meeting the state and federal standards for CO. Measurements and modeling for CO were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling results have not been a priority in most California air districts, given the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

### *Nitrogen Dioxide*

Nitrogen dioxide ($NO_2$) is a reddish-brown gas that is a byproduct of combustion processes. $NO_2$ may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Vehicle internal combustion engines and industrial operations are the main sources of $NO_2$, which is an air quality concern because it acts a respiratory irritant and is a precursor of ozone. $NO_2$ is a major component of the group of gaseous nitrogen compounds commonly referred to as $NO_X$, which are produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit. Typically, $NO_X$ emitted from fuel combustion are in the form of nitric oxide and $NO_2$. Nitric oxide is often converted to $NO_2$ when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, $NO_2$ emissions from combustion sources are typically evaluated based on the amount of $NO_X$ emitted from the source.

### *Sulfur Dioxide*

Sulfur dioxide ($SO_2$) is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. $SO_2$ is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to the potential atmospheric formation of sulfuric acid that could precipitate downwind as acid rain. The concentration of $SO_2$, rather than the duration of exposure, is an important determinant of respiratory effects. Exposure to high $SO_2$ concentrations may result in edema of the lungs or glottis and respiratory paralysis.

### *Particulate Matter*

$PM_{10}$ and $PM_{2.5}$ are particulate matter measuring 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (A micron is one-millionth of a meter.) $PM_{10}$ and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Large dust particles (those with a diameter greater than 10 microns) settle out rapidly and are easily filtered by the human breathing passages. This large dust is of more concern as a soiling nuisance than as a health hazard. The remaining fraction, $PM_{10}$ and $PM_{2.5}$, are a health concern, particularly when present at levels exceeding the federal and state ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus can penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Diesel particulate is carcinogenic and considered a toxic as discussed below. Recent studies have shown an association between morbidity (suffering from a disease or medical condition) and mortality (premature deaths) and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of $PM_{10}$ and $PM_{2.5}$ because their immune and respiratory systems are still developing.

Mortality studies conducted since the 1990s have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Pope and Dockery 2006). The California Air Resources Board (CARB) has estimated that achieving the ambient air quality standards for $PM_{10}$ could reduce premature mortality rates by 6,500 cases per year (CARB 2002).

### *Lead*

Ambient lead concentrations meet both the federal and state standards in the Proposed Project area. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline products. The phase-out of leaded gasoline in California caused atmospheric lead levels to decrease.

The Proposed Project would not introduce any new sources of lead emissions; consequently, quantification of lead emissions is not required, and such emissions are not evaluated further in this analysis.

## Toxic Air Contaminants

Non-criteria air pollutants, or toxic air contaminants (TACs), are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse effects on human health. TACs include both organic and inorganic chemical substances. They may be emitted by a variety of common sources including gasoline stations, automobiles, diesel engines, dry cleaners, industrial operations, and painting operations. TACs are regulated differently than criteria air pollutants at both the federal and state levels. At the federal level, these airborne substances are referred to as hazardous air pollutants. The state list of TACs identifies 243 substances and the federal list of hazardous air pollutants identifies 189 substances.

CARB identified diesel particulate matter (DPM) as a TAC in 1998, based primarily on evidence demonstrating cancer effects in humans. Exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and DPM concentrations are higher near heavily traveled highways and rail lines with diesel locomotive operations. CARB estimated average California cancer risk from exposure to diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 520 in 1 million as of the year 2012 (CARB 2023). These calculated cancer risk values from ambient air exposure can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in 1 million, according to the National Cancer Institute (NCI 2012).

## Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor and recognition occurs only with an alteration in the intensity.

The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing receptors, and for any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the receptor and the odor source will mitigate odor impacts.

### Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for this greater sensitivity include preexisting health problems, proximity to an emissions source, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory infections and other air quality–related health problems than the general public. Residential areas are also sensitive to poor air quality because people usually stay home for extended periods of time. There are two residences to the east and one residence to the northwest of the Proposed Project site. The closest sensitive receptor to the Proposed Project site is a residence approximately 2,800 feet to the east.

## 2.3.2 Discussion

a) **Less than Significant.** The applicable San Joaquin Valley Air Pollution Control District (SJVAPCD) air quality plans are the *2022 Ozone Plan for 2015 8-hour Ozone Standard* (SJVAPCD 2022) and *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* (SJVAPCD 2018). The current SJVAPCD set of rules prescribes feasible control measures for SJVAPCD sources. SJVAPCD plans to achieve the California and national ambient air quality standards by the earliest practicable date as a result of local emissions reductions. Exceedance of SJVAPCD's current adopted thresholds of significance for criteria pollutant emissions would conflict with or obstruct the implementation of the *2022 Ozone Plan for 2015 8-hour Ozone Standard* and *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards.*

As described below under checklist item b), the Proposed Project's emissions of $NO_X$ (an ozone precursor) would not exceed SJVAPCD's significance threshold during construction activities. Construction of the Proposed Project would be short-term and temporary and the increase in criteria pollutant emissions from off- and on-road equipment exhaust would not conflict with the applicable air quality plans. Because construction emissions are not expected to exceed the SJVAPCD significance thresholds for $NO_X$, this construction impact would be less than significant.

The Proposed Project would result in a minor increase in criteria pollutant emissions, generated by employee trips during inspection activities. However, the increase in employee trips is not expected to be substantial. In addition, the pumps used for operation of the Proposed Project would be electrically powered; therefore, no stationary-source emissions would occur at the Proposed Project site. Thus, operation and maintenance of the Proposed Project would not conflict with or obstruct implementation of the *2022 Ozone Plan for 2015 8-hour Ozone Standard* and *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards.* This operational impact would be less than significant.

b) **Less than Significant.**

**Construction**

Construction activities are short term and typically result in combustion exhaust emissions (e.g., vehicle and equipment tailpipe emissions), including ozone precursors (ROG and NOx), and PM from combustion and in the form of dust (fugitive dust). Emissions of ozone precursors

and PM are primarily a result of the combustion of fuel from on-road vehicles and off-road equipment.

Pollutant emissions associated with construction of the Proposed Project would be generated from the following general construction activities: (1) ground disturbance from grading, excavation, etc.; (2) vehicle trips from workers traveling to and from the construction areas; (3) trips associated with delivery of construction supplies to, and hauling debris from, the construction areas; and (4) fuel combustion by on-site construction equipment. These construction activities would temporarily generate air pollutant emissions, including dust and fumes. The amount of emissions that would be generated on a daily basis would vary, depending on the intensity and types of construction activities that would occur simultaneously. Overall, construction activities associated with the Project components would occur over a period of approximately 30 months, starting in the late summer of 2024.

Project construction emissions were estimated using CalEEMod version 2022.1.1.20 and are presented in **Table 2.3-1**. The table shows total construction emissions, which occur within a year, and compares them to the SJVAPCD significance thresholds for construction.

**TABLE 2.3-1**
**UNMITIGATED PROJECT CONSTRUCTION EMISSIONS**

| Project Construction Activities | Estimated Construction Emissions (tons/year) | | | | | |
|---|---|---|---|---|---|---|
| | CO | NOx | ROG | SOx | $PM_{10}$ | $PM_{2.5}$ |
| 2024 | 0.45 | 0.34 | 0.05 | <0.005 | 0.04 | 0.02 |
| 2025 | 1.12 | 0.82 | 0.13 | <0.005 | 0.14 | 0.05 |
| 2026 | 1.18 | 0.74 | 0.11 | <0.005 | 0.09 | 0.04 |
| 2027 | 0.06 | 0.03 | 0.04 | <0.005 | 0.01 | <0.005 |
| SJVAPCD Significance Threshold | 100 | 10 | 10 | 27 | 15 | 15 |
| Exceed Threshold? | No | No | No | No | No | No |

SOURCE: Appendix A (ESA 2023)

As shown in Table 2.2-1, the annual construction emissions of CO, NOx, ROG, SOx, PM10, and PM2.5 would not exceed the SJVAPCD significance thresholds for construction. Therefore, impacts from construction-related emissions would be less than significant.

### Operations

It is anticipated existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF and would result in negligible increases in emissions. Therefore, operational emissions would not result in a cumulatively considerable net increase in criteria pollutants. This impact would be less than significant.

c) **Less than Significant**.

**Construction**

Short-term project construction activities would generate DPM. The majority of DPM exhaust emissions that would be generated during construction would be from the use of diesel off-road equipment with a smaller amount generated by the use of heavy-duty trucks to deliver building material and equipment to the site. The closest sensitive receptor is a resident located 2,800 feet to the east of the Proposed Project site. The zone of influence for health risk to sensitive receptors is a 1,000-foot radius from the fence line of the source of emissions (SJVAPCD 2015). The closest sensitive receptor lies outside of the zone of influence.

DPM emissions would be generated at the Proposed Project site over a period of 30 months. Table 2.3-1 shows that the maximum $PM_{10}$ emissions ($PM_{10}$ is considered the surrogate for DPM to ensure conservative modeling assumptions) from construction at the Proposed Project site would be anywhere from 0.01 to 0.14 tons per year. Considering that the nearest sensitive receptor is outside of the zone of influence for health risk to sensitive receptors, Project impacts would not be considered substantial and would not result in a significant incremental cancer risk (SJVAPCD 2015). Impacts related to exposure of sensitive receptors would be less than significant.

**Operations**

It is anticipated existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF. The employee trips required for periodic facility inspection would not be significantly more than existing employee trips, and they would not be a source of TACs. As a result, the impact related to exposure of sensitive receptors to substantial TAC emissions from the Proposed Project operations would be less than significant.

d) **Less than Significant.** Construction of the Proposed Project would last for approximately 30 months total, up to approximately 8 hours per day, Monday through Friday. The SJVAPCD's *Final Draft: Guidance for Assessing and Mitigating Quality Impacts* recommends wastewater treatment facilities having a 2-mile distance from receptors. However, the RWRF is an existing facility. The use of on-site diesel-powered equipment can produce odorous exhaust; however, equipment use at the Proposed Project site would be temporary, and potential odors would not affect a substantial number of people in the vicinity, given the rural nature of the Project site. Therefore, construction of the Proposed Project would not create objectionable odors that would affect a substantial number of people, and odor impacts would be less than significant.

As a general matter, the types of land use development that pose potential odor problems include wastewater treatment plants, refineries, landfills, composting facilities, and transfer stations. The Proposed Project is for the construction and installation of sidestream treatment infrastructure to reduce effluent nitrate concentrations at an existing wastewater treatment plant. Odors from existing wastewater treatment activities are already part of current background conditions. Because the Proposed Project supports existing activities at the wastewater treatment plant and does not expand the treatment capacity, operation of the Proposed Project would not create new

objectionable odors that would affect a substantial number of people. This impact would be less than significant.

## 2.3.3 References

California Air Resources Board (CARB). 2002. *Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates*. May 3, 2002.

———. 2023. Summary: Diesel Particulate Matter Health Impacts. Available: https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts. Accessed November 14, 2023

National Cancer Institute (NCI). 2012. "Lifetime Risk (Percent) of Being Diagnosed with Cancer by Site and Race/Ethnicity, Both Sexes: 18 SEER Areas, 2007–2009." Table 1.14 in *SEER Cancer Statistics Review 1975–2009*. Available: https://seer.cancer.gov/archive/csr/1975_2009_pops09/results_merged/topic_lifetime_risk_diagnosis.pdf. Accessed January 21, 2021.

Office of Environmental Health Hazards Assessments (OEHHA*). Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*. Adopted February 2015.

Pope, C. A. III, and D. W. Dockery. 2006. Health Effects of Fine Particulate Air Pollution: Lines that Connect. *Journal of the Air & Waste Management Association* 56(6):709–742.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. *Guidance for Assessing and Mitigation Air Quality Impacts*. Adopted March 19, 2015.

———. 2018. *2018 Plan for the 1997, 2006, and 2012 PM 2.5 Standards.* November 15, 2018.

———. 2022. *2022 Ozone Plan for 2015 8-Hour Ozone Standard*. Adopted December 15, 2022.

# 2.4 Biological Resources

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **IV. BIOLOGICAL RESOURCES —** Would the project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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? | ☐ | ☐ | ☐ | ☒ |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.4.1 Environmental Setting

### Data Sources/Methodology

Biological resources within the Proposed Project site were assessed and identified by an Environmental Science Associates (ESA) biologist through field reconnaissance on November 8, 2023. Before the survey, the biologist reviewed pertinent literature and conducted database queries for the Proposed Project site and surrounding area. The survey was conducted on foot and existing habitat types, plants, and wildlife species within and adjacent to the Proposed Project site were recorded. The biological resources survey focused on identifying habitat for special-status plant and wildlife species, although general habitat conditions were noted, and incidental species observations were recorded. The survey included a floristic inventory of all vascular plants observed.

Habitats present on the Proposed Project site were compared to the habitat requirements of the regionally occurring special-status species and used to determine which of these species have the potential to occur on or adjacent to the site. Plant nomenclature follows *The Jepson Manual: Vascular Plants of California (Second Edition)* (Baldwin et al. 2012), as revised by *Jepson eFlora* (Jepson Flora Project 2023). Common names of plant species are derived from *The Jepson Manual* or Calflora (2023).

The following primary data sources were referenced for this section:

- California Natural Diversity Database, Rarefind 5 computer program (v5.3.0) (CDFW 2023) (see **Appendix B**).
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (v9.5) (CNPS 2023) (see **Appendix B**).
- CDFW Special Animals List (CDFW 2023).
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) list (Project code: 2023-0098003) (see **Appendix B**).

## Regional Setting

The Proposed Project site is located in southwest Fresno. The surrounding area is characterized by mixed agricultural land.

## Project Site Setting

The topography of the Proposed Project site is flat, with an elevation of approximately 250 feet.

Habitat types within the Proposed Project site consist of annual grassland and developed areas (**Figure 2-1**).

### Annual Grassland

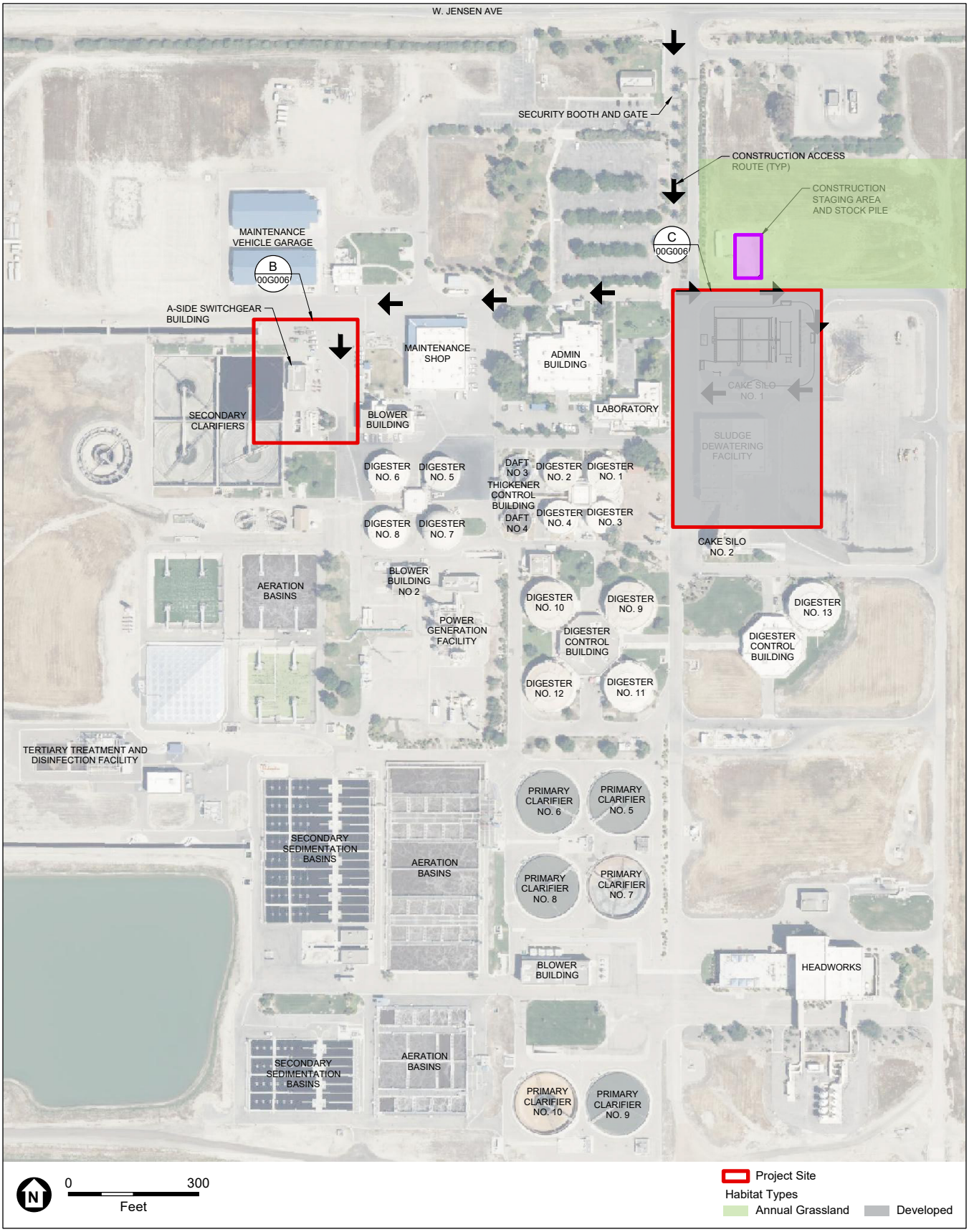
The northeast portion of the project consists of annual grassland. Mowed annual grasses and forbs were present during the November 8, 2023, biological resources survey. Herbaceous vegetation on the northeastern portion of the project area includes common spikeweed (*Centromadia pungens*), prickly lettuce (*Lactuca serriola*), red brome (*Bromus rubens*), sacred datura (*Dactura wrightii*), and seaside heliotrope (*Heliotropium curassavicum*).

### Developed

Developed areas consist of a public facility that treats wastewater. The Proposed Project site comprises of paved roads, paved pads and man-made infrastructure. The developed areas mostly lack vegetation. Where vegetated, these areas support ornamentals and weedy species adapted to recurring disturbances such as cheeseweed (*Malva parviflora*) and prickly lettuce (*Lactuca serriola*).

## Sensitive Natural Communities including Waters of the United States and Waters of the State

Sensitive natural communities are vegetation communities of limited distribution statewide or within a county or region and are often vulnerable to the environmental impacts of projects. Sensitive natural communities include those that are of special concern to resource agencies, such as CDFW, the U.S. Army Corps of Engineers (USACE), or USFWS, or are afforded specific consideration through the California Environmental Quality Act (CEQA), Section 1602 of the California Fish and Game Code, Section 404 of the federal Clean Water Act, and the Porter-Cologne Water Quality Control Act.




SOURCE: Carolla, 2024

City of Fresno Sidestream Treatment Project

**Figure 2-1**
Habitat Types

ESA

The man-made, wastewater treatment ponds to the west of the Proposed Project site are not likely considered waters of the United States because they are hydrologically disconnected from downstream rivers, streams, or lakes and lack emergent vegetation and a riparian corridor. No wetlands are located with the Proposed Project site.

## Wildlife Movement Corridors

Wildlife movement corridors are considered an important ecological resource by various agencies (CDFW and USFWS) and under CEQA. Movement corridors may provide favorable locations for wildlife to travel between different habitat areas such as foraging sites, breeding sites, cover areas, and preferred summer and winter range locations. They may also function as dispersal corridors, allowing animals to move between various locations within their range.

The Proposed Project site does not serve as a major wildlife movement corridor because it is surrounded on all sides by agricultural land and developed land; however, some species can occasionally occur as transients. Additionally, the Proposed Project site is within the existing RWRF which Proposed Project site is surrounded by a chain link fence, restricting access for larger species.

## Special-Status Species

Special-status species are regulated under the federal and California Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified under the following categories:

(1) Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (Code of Federal Regulations Title 50, Section 17.12 [listed plants] and Section 17.11 [listed animals], and various notices in the *Federal Register* [proposed species]).

(2) Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (*Federal Register* Title 61, Number 40, February 28, 1996).

(3) Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (California Code of Regulations Title 14, Section 670.5).

(4) Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.).

(5) Animal species of special concern to CDFW.

(6) Animals fully protected under the California Fish and Game Code (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

(7) Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (State CEQA Guidelines, Section 15380).

(8) Plants considered by CNPS and CDFW to be "rare, threatened or endangered in California" (California Rare Plant Rank 1A, 1B, and 2 in CNPS 2020).

A list of regionally occurring special-status species in the vicinity of the Proposed Project site was compiled based on data identified in the California Natural Diversity Database (CDFW 2023) and the

USFWS (2023) and CNPS (2023) databases. A table documenting special-status species, identifying their general habitat requirements, and assessing their potential to occur at the Proposed Project site is provided in **Appendix B**.

The "Potential to Occur" categories are defined as follows:

- **Unlikely**: The Proposed Project site does not support suitable habitat for a particular species and/or the site is outside of the species' known range.
- **Low Potential**: The Proposed Project site only provides limited and/or low-quality habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate Project site.
- **Moderate Potential**: The Proposed Project site and/or immediate vicinity provides suitable habitat for a particular species.
- **High Potential**: The Proposed Project site and/or immediate Project area provide ideal habitat conditions for a particular species and/or known populations occur within or in the vicinity of the Project site.
- **Present**: The species was observed during the biological resources survey within the Proposed Project site.

Conclusions regarding habitat suitability and species occurrence are based on the analysis of existing literature and databases described previously and known habitats occurring within the Proposed Project site and regionally. Species considered unlikely or with low potential are not discussed further. As described in Appendix B, no special-status plants have the potential to occur within the Proposed Project site because it lacks suitable habitat. Several wildlife species and nesting birds regulated by the federal Migratory Bird Treaty Act (MBTA) or California Fish and Game Code have the potential to occur within the Proposed Project site. San Joaquin kit fox (SJKF), American badger, pallid bat and western mastiff bat have a low potential to occur within the Proposed Project site.

### *Critical Habitat*

Critical habitat is defined in Section 3(5)A of the federal Endangered Species Act as the specific portions of the geographic area occupied by the species in which physical or biological features essential to the conservation of the species are found, and that may require special management considerations or protection. Specific areas outside of the geographic area occupied by the species may also be included in critical habitat designations upon a determination that such areas are essential for the conservation of the species.

The Proposed Project site does not occur within designated critical habitat for any federally listed species.

### *Pacific Gas and Electric Company San Joaquin Valley Operation and Maintenance Habitat Conservation Plan*

The Pacific Gas and Electric Company (PG&E) San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (O&M HCP) protects 23 wildlife and 42 plant species within nine counties of the San Joaquin Valley. This HCP covers routine operations and maintenance activities, as well as minor new construction, on any PG&E gas and electrical transmission and distribution facilities, easements, private

access routes, or lands owned by PG&E (PG&E 2006). The HCP covers the Project area for PG&E activities but is not applicable to the Proposed Project.

## 2.4.2 Discussion

a) **Less than Significant with Mitigation Incorporated.** Special-status wildlife and nesting birds regulated by the MBTA and the California Fish and Game Code may be affected either directly or indirectly by implementation of the Proposed Project.

**Special-Status Wildlife: Nesting Songbirds and Raptors**

Under the MBTA, most bird species and their nests and eggs are protected from injury or death. California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds and their nests and eggs.

Portions of the Proposed Project site and the immediate vicinity have the potential to support nesting birds. Direct impacts on nesting birds or their habitat could occur during initial Project activities such as equipment and materials noise. Nesting birds could be adversely affected if active nesting, roosting, or foraging sites are either removed or exposed to a substantial increase in noise or human presence during Proposed Project activities. The impact would be less than significant if construction activities were to occur during the non-breeding season (i.e., from September 1 through January 31). However, construction activities conducted during the breeding season between February 1 and August 31 could adversely affect nesting birds. Therefore, this impact would be potentially significant. Implementation of **Mitigation Measure Biological Resources-1** would reduce the impact to a less-than-significant level.

**Nesting and Wintering Western Burrowing Owl**

On October 10, 2024, the California Fish and Game Commission listed the western burrowing owl (*Athene cunicularia*) as a candidate species for protection under the California Endangered Species Act. The western burrowing owl often occupies and nests in California ground squirrel (*Otospermophilus beecheyi*) burrows or other alternative "burrow" habitats such as culvert pipes, riprap piles, and other crevices that go underground or inside a debris pile. There is no suitable burrow habitat for burrowing owls at the Project site; however, a burrowing owl can pass by the Project site as a transient because burrowing owls often occur in and around agricultural areas. Although the Proposed Project would not adversely affect any nesting individuals due to the lack of suitable nesting habitat, any burrowing owls that are passing through may be adversely affected by ongoing construction activities from an equipment or a vehicle strike. Implementation of **Mitigation Measure Biological Resources-1** would reduce the impact to a less-than-significant level.

**Special-Status Wildlife: Terrestrial Wildlife**

It is unlikely that San Joaquin kit fox (SJKF) or American badger would reside within the Proposed Project area. No suitable habitat for American badger is present and minimal habitat is present for SJKF. In addition, the Proposed Project site is fenced which reduces access to the Proposed Project site. However, it is possible that these species could use the nearby agricultural

fields as a movement corridor to more suitable habitat outside of the Proposed Project area. If the species are present during construction, disturbance associated with these activities could temporarily result in elimination of areas essential for seasonal movement as well as harm to individuals if they were present during construction activities. Additionally, minimal habitat for the pallid bat and western mastiff bat is present, which construction would not alter. Implementation of **Mitigation Measure Biological Resources-2**, **Mitigation Measure Biological Resources-3**, and **Mitigation Measure Biological Resources-4** would reduce potential impacts to SJKF, American badger, and special-status bats to a less than significant level by implementing preconstruction surveys, buffer zones around dens, worker education, and other measures as specified therein.

Crotch's bumble bee is currently under review for state protection under the California Endangered Species Act, and many projects where they have potential to occur implement mitigation measures to protect them. However, the Project site and surrounding vicinity do not have sufficient flowering plants to provide foraging habitat for the species. Thus, they are unlikely to occur at the Project site and are unlikely to be adversely affected by construction activities.

**Mitigation Measure Biological Resources-1: Protect Special-Status Birds and Nesting Birds Regulated by the MBTA and California Fish and Game Code.** For construction activities occurring during the nesting season (February 1 to August 31), a qualified biologist shall conduct a preconstruction pedestrian-level survey for active nests within 500 feet of the Project site and a 0.5 mile buffer windshield survey for SWHA. The survey shall be conducted using binoculars, from within the Project site, no more than seven days before the start of construction.

If no active nests are identified during the preconstruction survey, the biologist shall submit a letter report to the City for its records, and no further mitigation is necessary. If construction activities are to begin before February 1, it is assumed that no birds will nest on the Project site during active construction activities and no preconstruction surveys are required. If construction stops for a period of one week or longer at any time during the nesting season, preconstruction surveys shall be conducted before construction resumes.

If active nests are found within 500 feet, or the 0.5 mile buffer for SWHA, of the Project site, the City shall wait until the nests are not active to start construction; or, if construction must occur while the nest is active, a qualified biologist shall prepare a plan for avoidance of impacts on active nests. The plan shall identify measures to avoid disturbance of the active nests. Depending on the conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned. Appropriate measures may include restricting construction activities, establishing appropriate buffers based on the species nesting, or having a qualified biologist with stop-work authority monitor the nest for evidence that parental behavior has changed during construction. The biologist would have the authority to stop work in the event that the birds are exhibiting unusual nesting behavior based on the construction activities. If construction activities are halted because of adverse effects on breeding efforts, construction shall not resume until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

For construction occurring throughout the year, a qualified biologist will conduct a preconstruction pedestrian-level survey for burrowing owls within 500 feet of the Project site. If any burrowing owls are observed, then the individual will be monitored until it leaves the premises on its own volition. During the nesting season from February 1 to August 31, a qualified biologist will conduct a preconstruction survey within 500 feet of the Project site to identify any potential burrow habitat for the species. Any burrows with a burrowing owl observed occupying it will have a 500-foot avoidance buffer established around it.

**Mitigation Measure Biological Resources-2: Pre-Construction Surveys and Occurrence.** Ensure that active dens and burrows of special-status mammal species such as the San Joaquin kit fox and American badger are not disturbed during construction- or decommissioning-related activities. The following measures, derived from the USFWS (2011) *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or during Ground Disturbance* (USFWS 2011), shall be implemented to avoid impacts on active burrows and dens:

- Within 30 days of initiation of construction- or decommissioning-related activities, a qualified wildlife biologist shall conduct a preconstruction survey to assess the status of mammal burrows identified within 250 feet of the construction site where access is available.
- If occupied dens or burrows are found during the preconstruction survey, a non-disturbance buffer shall be created around the occupied den or burrow until it is determined that they are no longer occupied. Excavation of any potential SJKF dens shall be prohibited during breeding and pup-rearing season. Typical buffers include 250 feet from the den or burrow. The size of these buffer zones and types of construction-related activities restricted in these areas could be further modified during construction in coordination with CDFW and USFWS and shall be based on the existing level of noise and human disturbance on the Project site.
- If the preconstruction survey indicates that burrows are unoccupied during the construction- or decommissioning-related period, no further action is required. Burrows within the construction- or decommissioning-related footprint determined to be unoccupied by special-status burrowing wildlife, or that are outside the no-disturbance buffer for occupied dens or burrows, may be excavated.
- If a special-status burrowing mammal chooses to occupy a burrow next to an active construction- or decommissioning-related site, then it is generally considered acclimated to construction-related activities and the no disturbance buffer can be reduced.
- These provisions shall be implemented prior to (i) initial ground-disturbing activities in any area; (ii) restarting ground-disturbing activities in areas where no work has been occurring for 30 days or more; (iii) prior to ground-disturbing O&M activities; and (iv) starting (or restarting) decommissioning activities by walking transects appropriately spaced to obtain 100 percent visual coverage to identify potential dens, scat, tracks, other sign or individuals.

**Mitigation Measure Biological Resources-3: Worker Environmental Awareness Program.**

Prior to the issuance of grading or building permits and for the duration of construction related activities, all new construction-related workers at the Project site shall attend a

Construction Worker Environmental Awareness Program, developed and presented by an approved qualified biologist.

The program shall include information on the life history of the San Joaquin kit fox and describe other special-status wildlife species that may occur on-site, including burrowing owl and Swainson's hawk. The program shall also discuss each species' legal protection status, the definition or "take" under the federal and state Endangered Species Acts, measures the site operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the federal or state Endangered Species Act. An acknowledgement form signed by each worker indicating that environmental training has been completed would be kept on record. Construction- or decommissioning-related workers shall not be permitted to operate equipment within the construction- or decommissioning-related areas unless they have attended the training and are wearing hard hats with the required sticker. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the City.

**Mitigation Measure BIO-4: Preconstruction survey for special-status bats.**

Pre-construction field surveys for special status bat species during the breeding season (April 1st to August 31st) shall be conducted by a qualified biologist to determine whether active roosts are present on site, or within 100 feet of the project boundaries. Areas off the Proposed Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. Field surveys shall be conducted early in the breeding season before any construction activities begin, when bats are establishing maternity roosts but before pregnant females give birth (April through early May). Surveys shall be conducted no more than seven days prior to the onset of construction. If no roosting bats are found, then no further mitigation is required. If suitable habitat and/or bat signs are detected, a biologist shall conduct evening visual emergence surveys from one-half hour prior to sunset to one to two hours after sunset for a minimum of two nights. If roosting bats are found, the disturbance of the maternity roosts shall be avoided by halting construction until the end of the breeding season, or a qualified bat biologist excludes the roosting bats in consultation with the California Department of Fish and Wildlife. If construction activities begin prior to April 1, no pre-construction surveys are required. If at any time during the roosting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming. The City shall be provided a copy of the results of any survey conducted and evidence that any required mitigation measures have been implemented prior to initiation of construction or grading activities.

b) **Less than Significant**. The Proposed Project would alter 1 acre of previously disturbed and/or developed for the existing RWRF. Currently a concrete pad sits on the Proposed Project site and the inlet and outlet pipeline alignments would follow along a path that is currently paved. The surrounding wastewater treatment ponds are not likely considered a sensitive natural community or waters of the United States. Therefore, this impact would be less than significant.

c) **No Impact.** The Proposed Project site does not contain state or federally protected wetlands. Therefore, no impact on wetlands would occur.

d) **No Impact.** The Proposed Project would not interfere with the movement of wildlife or fish and would not result in any barriers to the movement of upland wildlife. As discussed, the Proposed Project site does not serve as a major wildlife movement corridor because it is surrounded on all sides by agricultural land and developed land. Additionally, the Proposed Project site is within the existing RWRF which is housed surrounded by a chain link fence, restricting access for larger species. Therefore, no impact on wildlife movement would occur.

e) **No Impact.** The Proposed Project is not expected to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance because potential impacts to biological resources would be mitigated and no trees would be removed as part of the Proposed Project. As a result, no impact would occur.

f) **No Impact.** The PG&E San Joaquin Valley Operation & Maintenance Habitat Conservation Plan (PG&E 2006) covers specific PG&E activities throughout nine counties in the San Joaquin Valley, including Fresno County. It outlines steps on minimizing, avoiding, and compensating for possible direct, indirect, and cumulative adverse effects on threatened and endangered species and critical habitat that could result from PG&E operation and maintenance activities in the San Joaquin Valley. The Proposed Project lies within the PG&E O&M HCP boundaries, but implementation of the Proposed Project is not a covered activity under the PG&E O&M HCP, which is applicable only to PG&E facilities. Therefore, implementation of the Proposed Project would not conflict with implementation of this HCP. No impact would occur.

## 2.4.3 References

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# 2.5 Cultural Resources

| Issues (and Supporting Information Sources): | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **V.** | **CULTURAL RESOURCES —** Would the project: | | | | |
| 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 dedicated cemeteries? | ☐ | ☒ | ☐ | ☐ |

## 2.5.1 Environmental Setting

The San Joaquin Valley has been shaped by human occupation since the arrival of the earliest peoples over 11,000 years ago. At the time of Euro-American contact, the Project area consisted of the southernmost territory occupied by the Northern Valley Yokuts. The Northern Valley Yokuts historically lived in California along the San Joaquin River as far north as where it bends north between the Calaveras and the Mokelumne rivers, as far south as Fresno, to the west to the Diablo Range, and as far east as the foothills of the Sierra Nevada. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills about 500 years ago.

State legislation in 1856 organized Fresno County from portions of Mariposa, Merced and Tulare counties. The development of the Central Pacific Railroad (predecessor of the Southern Pacific Railroad) in 1872 resulted in the creation of the town of Fresno, originally called “Fresno Station.” Prior to the 1870s, “dry farming” dominated Fresno County between the San Joaquin and Kings rivers. Dry farming relied on spring rains; however, the 1860s experienced extensive drought years, causing residents to explore alternative means for providing water for crops. Settlers dug ditches along major drainages, such as the Kings River, with the earliest ditches supplying water to the community of Centerville via the Centerville Ditch. The modern canal system operated by the Fresno, Consolidated, and Alta irrigation districts were begun during the 1870s and 1880s, with a variety of private parties taking the lead.

After the incorporation of the City of Fresno in 1885, the city’s trustees and local community leaders were presented with the pressing issue of financing and developing a sewer system robust enough to support the new city’s growing population. Like many communities in the San Joaquin Valley, Fresnans had spent much of the late 19th century struggling to expand water access through ditch and, later, pump, irrigation. The region’s nascent infrastructure, however, was consistently outpaced by population growth (Shallat, 1978). In 1888, the voters of Fresno overwhelmingly approved a $175,000 bond, $100,000 of which was earmarked for new municipal sanitary sewers. By 1889, city workers began laying pipes for a new sewer system (Fresno Bee, 10/27/1960). In 1891, the City began the lease of a 40-acre private farm for sewage disposal but ended the lease in 1909 due to ongoing problems with the landowner (Page, 1912; Fresno Bee, 03/13/1999). The City decided to manage the farm themselves and purchased the 812-acre site in 1909 for $30,800. By 1922, the City’s sewage disposal program had been determined inadequate, and a commission was established to remedy the sewage crisis.

The Fresno Municipal Farm underwent major modifications during the 1940s. In June 1947, the City began construction of its first wastewater treatment plant to provide primary treatment for sewage, although the site has been used for wastewater disposal since 1907 (Brown and Caldwell, 2006; Fresno Bee, 06/27/47). The new plant was built by DeLucca & Son on five acres of land at the Fresno Municipal Farm (Fresno Bee, 08/24/1947). The City continued to periodically expand the plant's capacity for the remainder of the 20th century.

## 2.5.2 Discussion

a) **No Impact.** A significant impact would occur if the Proposed Project would cause a substantial adverse change to a historical resource through physical demolition, destruction, relocation, or alteration of the resource. As used in this analysis, *historical resources* refer to historic-era architectural resources or the built environment, including buildings, structures, and objects.

ESA received the results of a records search at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System on November 15, 2023 (File No. 23-467). The review included the Proposed Project site and a 0.5-mile radius. Previous surveys, studies, and site records were accessed. Records were also reviewed in the Built Environment Resources Directory for Fresno County, which contains information on places of recognized historical significance, including those evaluated for listing in the National Register of Historic Places, the California Register of Historical Resources, the California Inventory of Historical Resources, California Historical Landmarks, and California Points of Historical Interest. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within the proposed project vicinity; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The SSJVIC records search indicated that two cultural resources investigations have been completed in the Project vicinity (Flint, 1996 and Baloian, 2010). No previously recorded built resources were identified in the records search. Field survey by ESA architectural historian Katherine Cleveland did not identify any historic-age buildings or structures within the Proposed Project site.

The Proposed Project site is undeveloped, without any buildings or structures that could be considered historical resources as defined by CEQA Section 15064.5. Because no historical resources are located on or adjacent to the Project site, no impact on historical resources of the built environment would occur.

b) **Less than Significant with Mitigation Incorporated.** Archaeological resources can be considered both historical resources, according to State CEQA Guidelines Section 15064.5, and unique archaeological resources, as defined in Public Resources Code (PRC) Section 21083.2(g). A significant impact could occur if the Proposed Project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

The SSJVIC records search indicated that no cultural resources have been recorded on the Proposed Project site. Six cultural resources have been previously recorded within 0.5 miles of the Proposed Project site; these six resources will not be impacted by the Proposed Project. Pedestrian survey by ESA archaeologist Andy Ramirez included all unpaved areas of the Proposed Project site. No archaeological resources were identified as a result of this survey (ESA, 2024).

Geologic maps show that the majority of the Proposed Project site is mapped as Pleistocene nonmarine with the northern and western edges in Holocene Great Valley fan deposits (Matthews and Burnett, 1965). Soils in the sidestream treatment facilities and switchgear building components of the Proposed Project site (5.98 acres or 97.5%) are Atwater loamy sand which are Eolian-age deposits derived from granite. Soil in the construction staging area of the Proposed Project site (0.15 acres or 2.5%) is Pachappa loam which is formed from alluvial fans (USDA, 2024). Meyer and Brandy (2019) have found that the Proposed Project site has a low sensitivity for both surficial and buried archaeological resources. Additionally, given the previous ground disturbance from agricultural activities and construction of the RWRF, the likelihood of unknown intact archaeological resources is very low.

Despite this low potential, the discovery of archaeological materials during ground-disturbing activities cannot be entirely discounted. Project development could result in potentially significant impacts to unknown resources that are located below the ground surface. The impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure Cultural Resources-1** and **Mitigation Measure Cultural Resources-2**, because all construction personnel involved in ground-disturbance would be required to be trained in archaeological resource identification and develops avoidance measures or appropriate treatment of archaeological resources, if any such resources are discovered during Project construction.

**Mitigation Measures Cultural Resources-1: Cultural Resources Awareness Training.** Before any ground-disturbing and/or construction activities, the City shall require an archaeologist meeting or under the supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in project-related ground disturbance prior to such personnel conducting any on-site activities. If a Native American tribe has expressed interest in the project via tribal consultation, they shall be invited to participate in the training program. The training shall outline the general archaeological sensitivity of the area and the procedures to follow if an archaeological resource and/or human remains are inadvertently discovered during project-related activities.

**Mitigation Measure Cultural Resources-2: Inadvertent Discovery of Archaeological Resources.** If pre-contact or historic-era archaeological resources are encountered during project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist, defined as an archaeologist meeting Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology, shall inspect the find within 24 hours of discovery and notify the City of their initial assessment. Pre-contact archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools (e.g., hammerstones, pitted stones). Historic-era

materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.

If the City determines, based on recommendations from the archaeologist and, if the resource is indigenous and a Native American tribe has expressed interest, a Native American tribe, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5) and/or a tribal cultural resource (as defined in PRC Section 21080.3), the resource shall be avoided, if feasible. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If avoidance is not feasible, the City shall consult with appropriate Native American tribes (if the resource is pre-contact), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).

c) **Less than Significant with Mitigation Incorporated.** There is no indication from archival research that any part of the Proposed Project site has been used for human burial purposes in the recent or distant past. Therefore, it is unlikely that human remains would be encountered during construction of the Proposed Project. Despite this low potential, the possibility of inadvertent discovery cannot be entirely discounted. Therefore, this impact would be potentially significant. The impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure Cultural Resources -3** because the measure requires avoidance or appropriate treatment of human remains, if any are accidentally discovered during Project construction.

**Mitigation Measure Cultural Resources -3: Inadvertent Discovery of Human Remains.** In the event of discovery or recognition of any human remains during construction activities, all such activities within 100 feet of the find shall cease until the Fresno County Coroner has been contacted to determine that no investigation of the cause of death is required. The NAHC shall be contacted within 24 hours if the Coroner determines that the remains are Native American. The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to USACE for the appropriate means of treating the human remains and any grave goods.

## 2.5.3 References

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# 2.6 Energy

| *Issues (and Supporting Information Sources):* | | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|---|
| **VI.** | **ENERGY —** Would the project: | | | | |
| a) | Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | ☐ | ☐ | ☒ | ☐ |
| b) | Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | ☐ | ☐ | ☒ | ☐ |

## 2.6.1 Discussion

Consistent with Public Resources Code Section 21100(b)(3), this impact analysis evaluates the potential for construction, operation, and maintenance of the Proposed Project to result in a substantial increase in energy demand and wasteful use of energy. The impact analysis is informed by Appendix G of the State CEQA Guidelines. The potential impacts are analyzed based on an evaluation of whether construction energy use estimates for the Proposed Project would be considered excessive, wasteful, or inefficient.

a) **Less than Significant.** During construction of the Proposed Project, fuel consumption would result from the use of construction tools and equipment, truck trips to haul material, and construction workers' commutes to and from the Proposed Project site. Construction of the Proposed Project is anticipated to last for 30 months.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a long-term condition of the Proposed Project. The Proposed Project would be required to comply with applicable state regulations requiring the use of energy efficient modern building materials and construction practices as well as applicable General Plan policies requiring energy efficiency. In addition, the Proposed Project has no unusual characteristics that would require using construction equipment or haul vehicles that would be less energy efficient than equipment and vehicles used at similar construction sites elsewhere in California. In conclusion, construction-related fuel consumption by the Proposed Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region. This impact would be less than significant.

Once construction is complete, operational emissions would be minimal and related to periodic facility inspection. Because the Proposed Project's operational impacts on energy resources would be driven primarily by limited maintenance activities, energy use would be negligible. The Proposed Project would be required to comply with applicable state regulations requiring the use of energy efficient modern building materials and use new modern appliances and equipment when available as well as applicable General Plan policies requiring energy efficiency This impact would be less than significant.

b) **Less than Significant.** The transportation sector is a major end user of energy in California, accounting for approximately 42 percent of the state's total energy consumption in 2021 (U.S. Energy Information Administration 2023). Energy is also consumed in connection with

construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. In 2022, approximately 13.6 billion gallons of gasoline and more than 2.9 billion gallons of diesel were sold, making California the second largest consumer of gasoline in the world (CEC 2023).

Existing standards for transportation energy are promulgated through the regulation of fuel refineries and products, such as the Low Carbon Fuel Standard, which mandated a 10 percent reduction in the non-biogenic carbon content of vehicle fuels by 2020. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. Additional amendments were adopted in 2020 that included regulations for carbon credits and reporting for fuel reward programs. Other regulatory programs with emissions and fuel efficiency standards have been established by the U.S. Environmental Protection Agency and the California Air Resources Board (CARB), such as Pavley II/Low Emission Vehicle III from California's Advanced Clean Cars Program and the Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation. Further, construction sites need to comply with state requirements designed to minimize idling and associated emissions, which also minimizes fuel use. Specifically, idling of commercial vehicles and off-road equipment is limited to five minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation (California Code of Regulations Title 13, Section 2485). In addition, the Proposed Project would be required to comply with CALGreen Code (CCR Title 24, Part 11) for mandatory green building standards and the California Energy Code (CCR Title 24, Part 6) which contains energy conservation standards applicable to all residential and non-residential buildings throughout California.

The City has not implemented energy action plans. The Proposed Project is consistent with the state goals and would not impede progress toward achieving these goals.

The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency or impede progress toward achieving any goals and targets. This impact would be less than significant.

## 2.6.2 References

California Air Resources Board (CARB). 2021. *2020 Mobile Source Strategy*. Available: https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf. Accessed December 2023.

California Energy Commission (CEC). 2023. Retail Fuel Sales by County. Available: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.energy.ca.gov%2Fsites%2Fdefault%2Ffiles%2F2023-08%2F2010-2022%2520CEC-A15%2520Results%2520and%2520Analysis%2520ADA.xlsx&wdOrigin=BROWSELIN. Accessed December 2023.

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# 2.7 Geology and Soils

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **VII. GEOLOGY AND SOILS —** Would the project: | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☐ | ☒ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☐ | ☒ |
| iv) Landslides? | ☐ | ☐ | ☐ | ☒ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☐ | ☒ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | ☐ | ☐ | ☐ | ☒ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative 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? | ☐ | ☒ | ☐ | ☐ |

## 2.7.1 Environmental Setting

The Proposed Project site is located within the Great Valley Geomorphic province. The province includes the area known as the Great Central Valley of California, which extends approximately 400 miles north to south and 50 miles east to west. The Great Central Valley is encompassed by the Coast Ranges (metamorphic), the Klamath Ranges (metamorphic), the Cascade Range (volcanic), and the Sierra Nevada (granitic and metamorphic). The majority of rocks and deposits found within the province are sedimentary. According to the U.S. Geological Survey, sedimentary rocks are formed from preexisting rocks or pieces of once-living organisms. They form from deposits that accumulate on the earth's surface. Sedimentary rocks often have distinctive layering or bedding.

### Surface Fault Rupture

There are no known Holocene-active faults or pre-Holocene faults within the Proposed Project site (CGS 2015). The Project site is not within or near an established Alquist-Priolo Earthquake Fault Zone, as mapped by the CGS.

The western San Joaquin Valley region of California is seismically active and moderate to severe ground shaking in the vicinity of the Proposed Project site is expected. The 2014 Working Group on California Earthquake Probabilities concluded that there is a 95 percent probability that a magnitude (MW) 6.7

earthquake or higher will strike somewhere in Northern California by the year 2045 (Field et al. 2015). The nearest faults to the Proposed Project site are the San Joaquin Fault (Great Valley Fault) which is approximately 34 miles west of the site, the Ortigalita Fault which is 55 miles northwest of the Proposed Project site, and the Nunez fault which is approximately 45 miles southwest of the Proposed Project site. The portion of the Great Valley Fault closest to the Proposed Project site has a 1.23 percent chance of a moment magnitude (Mw) 6.7 or greater earthquake over the next 30 years (WGCEP 2015). The portion of the Ortigalita Fault closest to the Proposed Project site has a 1.5 percent chance of a moment magnitude (Mw) 6.7 or greater earthquake over the next 30 years (WGCEP 2015). A designation of "active" means the fault has shown movement in the last 11,700 years (during the Holocene) and is sufficiently well defined. The Proposed Project site is not located within and does not cross a delineated Alquist-Priolo earthquake fault zone (CGS 2015).

Ground shaking occurs due to a seismic event and can cause extensive damage to life and property, and may affect areas hundreds of miles away from the earthquake's epicenter. The extent of the damage varies by event and is determined by several factors, including (but not limited to) magnitude and depth of the earthquake, distance from epicenter, duration and intensity of the shaking, underlying soil and rock types, and integrity of structures.

The City would be exposed to ground shaking from seismic events on local and regional faults. However, the Fresno area has historically experienced a low to moderate degree of seismicity. Most of Fresno County, from approximately Interstate 5 (I-5) east and including the City, is located in Seismic Zone 3, as defined by the most recent California Uniform Building Code, which indicates a 0.3g peak (where *g* equals the acceleration speed of gravity) horizontal ground acceleration (Fresno County 2000).

The soil on the Proposed Project site is composed of Hesperia fine sandy loam, Atwater loamy sand, and Pachappa loam. All three soil types are alluvial, well drained, low to negligible runoff, a deep water table (>80 inches). The Atwater loamy sand has a high wind erodibility, whereas the Pachappa loam and the Hesperia fine sandy loam has a low to moderate risk of wind erosion (NRCS 2023). The Pachappa loam is also moderately corrosive to concrete structures. The Hesperia fine sandy loam has a high risk of flooding.

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered by either static forces (i.e., gravity) or dynamic forces (i.e., earthquakes). Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. There is no risk of large landslides in the valley area of the County due to its relatively flat topography. There is, however, the potential for small slides and slumping along the steep banks or river or creeks in the valley. Avalanche potential is greatest at the higher elevations of the Sierra Nevada in eastern Fresno County.

Liquefaction is the process in which the soil is transformed to a fluid form during intense and prolonged ground shaking. The areas most prone to liquefaction are those that are water saturated and consist of relatively uniform sands that are of loose to medium density and are areas that are water saturated. The potential for soil liquefaction within the City ranges is considered fairly minor (Fresno 2014). The potential for soil liquefaction within the Proposed Project site is considered to be low given to the variable density of the subsurface soils and the depth of groundwater.

Expansive soils can undergo significant volume change (shrink and swell) as their soil moisture content varies. Soil moisture content can change as a result of many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. The soils in the Proposed Project site have a minimal shrink-swell potential (NRCS 2023).

Subsidence occurs when a large land area settles as a result of oversaturation or extensive withdrawal of groundwater, oil, or natural gas. While subsidence does occur in Fresno County, the Proposed Project site is located in an area of minimal (-5 to 0 feet) subsidence (California Department of Water Resources 2023).

Paleontological resources are the fossilized remains or impressions of plants and animals, including vertebrates (animals with backbones; mammals, birds, fish, etc.), invertebrates (animals without backbones; starfish, clams, coral, etc.), and microscopic plants and animals (microfossils). They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which the plants or animals became fossilized usually were quite different from the present environments in which the geologic formations now exist.

The Society of Vertebrate Paleontology (SVP) established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources (SVP, 2010). Most practicing paleontologists in the United States adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists. Many federal, state, county, and city agencies have either formally or informally adopted the SVP's standard guidelines for the mitigation of adverse construction-related impacts on paleontological resources. The SVP has helped define the value of paleontological resources and, in particular, indicates that geologic units of high paleontological potential are those from which vertebrate or significant invertebrate or plant fossils have been recovered in the past (i.e., are represented in institutional collections).

Geologic units of low paleontological potential are those that are not known to have produced a substantial body of significant paleontological material. As such, the sensitivity of an area with respect to paleontological resources hinges on its geologic setting and whether significant fossils have been discovered in the area or in similar geologic units.

Paleontological sensitivity is defined as the potential for a geologic formation to produce scientifically important fossils. This is determined by the rock type, the past history of the geologic unit in producing significant fossils, and the fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, the SVP defines four categories of paleontological sensitivity for rock units, reflecting their potential for containing additional significant paleontological resources:

- **High Potential**: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.

- **Low Potential**: Rock units that are poorly represented by fossil specimens in institutional collections, or that based on general scientific consensus only preserve fossils in rare circumstances, with the presence of fossils being the exception, not the rule.
- **Undetermined Potential:** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment.
- **No Potential**: Rock units such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) that will not preserve fossil resources.

The University of California Museum of Paleontology (UCMP) vertebrate paleontology database indicates the entire City consists of Pleistocene nonmarine (Qc, orange areas) and Quaternary nonmarine terrace (Qt, yellow areas) and both are considered to have high potential sensitivity for paleontological resources. However, given that the Proposed Project site has been previously disturbed, the potential for paleontological resources would be reduced to low.

## 2.7.2 Discussion

a.i) **No Impact.** The Proposed Project site is not located within an Alquist-Priolo earthquake fault zone. Therefore, no impact related to rupture of a known earthquake fault would occur.

a.ii) **Less than Significant.** Earthquakes associated with the active faults in the Proposed Project area may cause strong ground shaking at the Proposed Project site. Movement on the Ortigalita Fault could result in a maximum credible earthquake of 7.0 (WGCEP 2015). The region of the Great Valley Fault closest to the Proposed Project site is estimated to have an approximately 1.08 percent chance of a Mw 6.7 or greater earthquake over the next 30 years (WGCEP 2015).

The Proposed Project involves upgrades to the RWRF in order to reduce the total nitrogen discharged from the plant. Elements of the Proposed Project include pipelines that would be buried following construction; two process reactors and two equalization basins; and a process control building to house blowers, electrical and controls equipment. The process control building would be uninhabited. The City of Fresno is located in an area with historically low to moderate level of seismicity. However, strong ground shaking could occur within the project site during seismic events and occurrences have the possibility to result in significant impacts. Major seismic activity along the nearby Great Valley Fault Zone or the Nunez Fault, or other associated faults, could affect the project site through strong seismic ground shaking. Strong seismic ground shaking could potentially cause structural damage to the proposed project. However, due to the distance to the known faults, hazards due to ground shaking would be minimal. In addition, compliance with the California Building Code (Title 24, California Code of Regulations) Fresno Municipal Code and GP Policies NS-2-a through NS-2-d would ensure that the geotechnical design of the proposed project would reduce potential impacts related to seismic ground shaking to less than significant.

a.iii, iv) **No Impact.** As discussed in Section 2.6.1, *Environmental Setting*, the Proposed Project area is not known to be susceptible to landslides or liquefaction. No new habitable structures would be constructed as part of the Proposed Project. In addition, the Proposed Project would be subject to compliance with the California Building Code and American Society of Civil Engineers standards. Therefore, no impact would occur.

b) **Less than Significant.** Soils in the Proposed Project area have low potential for erosion; however, earthmoving and grading activities during construction of the Proposed Project have the potential to cause erosion. Routine Proposed Project operations and maintenance activities are not anticipated to result in substantial soil erosion or loss of topsoil. Construction would be required to adhere to best management practices (BMPs) associated with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Discharges of Stormwater Associated with Construction Activities, also known as the Construction General Permit, to control sediment in stormwater runoff from the Proposed Project area (see checklist item a in Section 2.9, *Hydrology and Water Quality*). In addition, the City Construction Permit which would ensure safety and environmental control measures for construction practices. The Construction Permit sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. All grading activities are required to be permitted by the City's Building Permit Center. Therefore, impacts of Proposed Project construction related to soil erosion would be less than significant.

c, d) **No Impact.** As described previously, the soils in the Proposed Project area are not known to have liquefaction potential, and they have a minimal shrink-swell potential. In addition, no new habitable structures would be constructed as part of the Proposed Project. Therefore, no impact on life or property would occur.

e) **No Impact.** The Proposed Project would not include the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

f) **Less than Significant with Mitigation Incorporated.** Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, and the enormous number of organisms that have lived through time, the preservation of plant or animal remains as fossils is extremely rare. Because of the infrequency of fossil preservation, fossils—particularly vertebrate fossils—are considered nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life.

Rock formations that are considered paleontologically sensitive are those rock units that have yielded significant vertebrate or invertebrate fossil remains (SVP 2010). The entirety of the City of Fresno consists of Quaternary alluvium, including the Proposed Project Site. All undisturbed alluvium in the surface and subsurface of the target area have the potential of containing vertebrate fossils; therefore, any excavations of these deposits have the potential of impacting significant paleontological resources. The Proposed Project Site is therefore located in an area that has the potential for paleontological resources. However, the Proposed Project site is located in an area that has already been disturbed and developed.

Given that the Proposed Project site is located at a previously disturbed and developed site, there is a low chance that a paleontological resource would be encountered during construction. Despite this, if any previously unrecorded paleontological resources were encountered during project construction and any were found to be a unique paleontological resource, any impact of the Proposed Project on the resource could be potentially significant. Any such potentially

significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measures GEO-1 and GEO-2.

**Mitigation Measure GEO-1: Train Construction Workers Regarding Paleontological Resources.** A qualified paleontologist, defined as one meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP 2010), shall present a paleontological resources sensitivity training to Project construction workers before the start of ground-disturbing activities (e.g., vegetation removal, pavement removal). The training session shall focus on recognition of the types of paleontological resources that could be encountered within the Project site and the procedures to follow if they are found. The Contractor shall retain documentation demonstrating that construction personnel have attended the training.

**Mitigation Measure GEO-2: Implement Appropriate Treatment Measures in Case of a Potential Fossil Discovery.** If construction or other Project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease within a 50-foot radius of the discovery until the qualified paleontologist has assessed the discovery and recommended the appropriate treatment. If the find is deemed significant, it shall be salvaged following the standards of the SVP (SVP 2010) and curated with a certified repository.

## 2.7.3 References

California Department of Water Resources (DWR). 2023. SGMA Data Viewer. Available: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub. Accessed November 2023.

California Geological Survey (CGS). 2015. 2015 Fault Activity Map of California. Available: https://maps.conservation.ca.gov/cgs/fam/. Accessed November 2023.

Field, E. H., Glenn P. Biasi, Peter Bird, Timothy E. Dawson, Karen R. Felzer, David D. Jackson, Kaj M. Johnson, Thomas H. Jordan, Christopher Madden, Andrew J. Michael, Kevin R. Milner, Morgan T. Page, Tom Parsons, Peter M. Powers, Bruce E. Shaw, Wayne R. Thatcher, Ray J. Weldon II, and Yuehua Zeng (Field et al.), 2015. *Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast* (UCERF3). Bulletin of the Seismological Society of America, Vol. 105, No. 2A. pp. 511-543. April 2015. doi: 10.1785/0120140093.

Society of Vertebrate Paleontology (SVP). 2010. *Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines.* Society of Vertebrate Paleontology News Bulletin, 2010.

U.S. Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Available: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed November 2023.

Working Group on California Earthquake Probabilities (WGCEP). 2015. The Third California Earthquake Rupture Forecast (UCERF3): Output from Google Earth file with fault probabilities.

# 2.8 Greenhouse Gas Emissions

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **VIII. GREENHOUSE GAS EMISSIONS —** Would the project: | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ |

## 2.8.1 Discussion

a, b) **Less than Significant.** The San Joaquin Valley Air Pollution Control District's (SVJAPCD's) greenhouse gas (GHG) guidance is intended to streamline CEQA review by pre-quantifying emissions reductions that would be achieved through the implementation of Best Performance Standards. A project is considered to have a less-than-significant cumulative impact on climate change if it meets any of the following conditions:

(1) Comply with an approved GHG reduction plan.

(2) Achieve a score of at least 29 using any combination of approved operational Best Performance Standards.

(3) Reduce operational GHG emissions by at least 29 percent over business-as-usual (BAU) conditions (demonstrated quantitatively).

In response to AB 32 GHG reduction goals, CARB adopted the Climate Change Scoping Plan, which outlined a framework for achieving the emission reduction goals set in the California Global Warming Solutions Act. The Scoping Plan was most recently updated in 2022 (2022 Scoping Plan; CARB, 2022) to address California's 2030 GHG target and identifies how the State can reach the 2030 climate target established by SB 32 while making substantial advancements to achieve carbon neutrality by 2045 toward the 2050 climate goal established by Executive Order (EO) S-3-05 (2005). The 2022 Scoping Plan Update contains one measure regarding GHG emission from construction that requires 25 percent of energy demand from construction equipment to be electrified by 2030 and 75 percent by 2045, which the Proposed Project would be consistent with as construction would be completed before 2030.

Because SJVAPCD does not provide significance thresholds for construction-related GHG emissions, a project's construction emissions are considered to have a less-than-significant impact as they represent a very small portion of the project's lifetime GHG emissions. Based on the modeling of construction equipment and truck activities, the estimated GHG emissions from combustion activities associated with construction equipment would be approximately 651 MT $CO_2e$ for the entire 30-month construction period. Amortized over an assumed 30-year project lifetime, construction emissions would be 21.7 MT $CO_2e$/year, as shown in **Table 2.8-1**. Construction of the Proposed Project would not result in a cumulatively considerable increase in

GHG emissions and is consistent with applicable state and local plans. Therefore, this impact would be less than significant

**TABLE 2.8-1**
**CONSTRUCTION GHG EMISSIONS**

| Year | GHG Emissions ($MTCO_2e$/year) | Amortized (30 years) |
|---|---|---|
| 2024 | 101 | NA |
| 2025 | 239 | NA |
| 2026 | 296 | NA |
| 2027 | 15.0 | NA |
| **Total** | **651** | **21.7** |

NOTES: $CO_2e$ = carbon dioxide equivalent; GHG = greenhouse gas; MT = metric tons; NA = Not applicable
Sum of emissions during the different construction years may not add up to the total due to rounding.
SOURCE: Data compiled by Environmental Science Associates in 2023.

## 2.8.2 References

Association of Environmental Professionals (AEP). 2016. *Final White Paper Beyond 2020 and Newhall, A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*. October 18, 2016. Page 36.

California Air Resources Board (CARB) 2023. 2022 Scoping Plan Update. Available: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Accessed December 2023.

# 2.9 Hazards and Hazardous Materials

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **IX. HAZARDS AND HAZARDOUS MATERIALS —** Would the project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☐ | ☒ |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | ☐ | ☐ | ☐ | ☒ |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? | ☐ | ☐ | ☒ | ☐ |

## 2.9.1 Environmental Setting

The location of the Proposed Project is within the boundaries of the existing Fresno-Clovis RWRF in southwest Fresno at the intersection of West Jensen Road and South Cornelia Avenue. The RWRF is on a parcel zoned as public facility/wastewater (City of Fresno 2023). No schools are located within two miles of the Proposed Project site.

### Hazardous Materials

Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term *hazardous material* is defined in law as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment (California Health and Safety Code, Section 25501[o]). In some cases, past uses can result in spills or leaks of hazardous materials to the ground, resulting in soil and groundwater contamination. The use, storage, transportation, and disposal of hazardous materials are subject to numerous federal, state, and local laws and regulations.

Information about hazardous materials sites on the Proposed Project site was collected by reviewing the California Environmental Protection Agency's Cortese List data resources and the State Water Resources

Control Board's GeoTracker list. The Cortese List data resources provide information regarding facilities or sites identified as meeting the requirements for inclusion on the Cortese List. The Cortese List is updated at least annually, in compliance with California regulations (California Government Code Section 65964.6[a][4]), and includes federal Superfund sites, state response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites. The GeoTracker is the California State Water Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. GeoTracker contains records for sites that require cleanup, such as Leaking Underground Storage Tank (LUST) Sites, Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including: Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites (SWRCB 2023).

A review of the Department of Toxic Substances Control EnviroStor database and the State Water Resource Control Board GeoTracker database records indicate that the Proposed Project site is not located on a list of hazardous materials site (compiled pursuant to Government Code Section 65962.5, known as the "Cortese List"), nor are there any sites in the vicinity of the Proposed Project site (DTSC 2023; SWRCB 2023).

### Fire Suppression

The Proposed Project site is located within a Local Responsibility Area and is in an Unzoned Fire Hazard Severity Zone (CAL FIRE 2023).

## 2.9.2 Discussion

a, b) **Less than Significant.** The Proposed Project's construction equipment and materials would include fuels, oils and lubricants, cement, and concrete, which are all commonly used in construction. The routine use or an accidental spill of hazardous materials used in construction could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment.

Proposed Project construction activities would be required to comply with numerous regulations (including General Plan Policies NS-4-a, NS-4-e, and NS-4-f) to ensure that construction-related fuels and other hazardous materials are transported, used, stored, and disposed of safely to protect worker safety, and to reduce the potential for such fuels or other hazardous materials to be released into the environment, including stormwater and downstream receiving water bodies. The California Occupational Safety and Health Administration (Cal/OSHA) is responsible for developing and enforcing workplace safety standards, including standards for handling and using hazardous materials during operations. The United States Department of Transportation and the California Department of Transportation (Caltrans) regulate transportation of hazardous materials. Any contractor that would handle hazardous materials during construction must prepare and implement a hazardous materials management plan for review and approval by the local Certified Unified Program Agency, in this case, Fresno County Environmental Health Services. The hazardous materials management plan must identify the hazardous materials to be used, training provided to workers on the proper handling of the materials, and procedures for responding to any spills.

In addition, construction contractors would be required to acquire coverage under the National Pollutant Discharge Elimination System (NPDES) General Stormwater Permit, which requires the preparation and implementation of a storm water pollution prevention plan (SWPPP) for construction activities. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; describe protocols for responding immediately to spills; and describe best management practices (BMPs) for controlling site run-on and runoff. Details regarding BMPs included in the NPDES Permit are discussed in Section 2.9, *Hydrology and Water Quality*.

Therefore, the transport, use, storage, handling, and disposal of hazardous materials for the Proposed Project would be adequately controlled through compliance with existing regulatory requirements and permitting during construction.

For operations, existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF. Periodic facility inspection would include the limited use of equipment that would use fuel. Repairs would be completed as necessary and could require fuels, oils, and/or lubricants. The Proposed Project would be required to comply with the numerous laws and regulations discussed above that govern transportation, use, handling, and disposal of hazardous materials, which would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials. As a result, this impact would be less than significant.

c) **No Impact.** No schools are located within one-quarter mile of the Proposed Project site. Therefore, no impact on schools would occur.

d) **No Impact.** As mentioned above in the Environmental Setting, the Proposed Project site is not located on or near a hazardous materials site. Therefore, no impact related to being located on a listed hazardous materials site would occur.

e) **No Impact.** No public airports or public use airports are located within two miles of the Proposed Project site. Therefore, no impact related to airport safety hazards would occur.

f) **No Impact.** The construction activity and the staging of equipment and materials for the Proposed Project would occur within the existing RWRF, which would not require road closures or lane restrictions. Therefore, no impact on emergency response and evacuation plans would occur.

g) **Less than Significant.** The Proposed Project site is located in a Local Responsibility Area Zone and is not designated as a High Fire Hazard Area or Very High Fire Hazard Area (CAL FIRE, 2023). The Proposed Project site is within the existing RWRF which is on land that has been previously disturbed and/or developed. Therefore, the impact related to wildland fires would be less than significant.

## 2.9.3 References

California Department of Forestry and Fire Protection (CAL FIRE), 2023. State Responsibility Area Fire Hazard Severity Zones Map. Available: https://osfm.fire.ca.gov/media/pe0nk1rp/fhsz_county_sra_11x17_2022_fresno_2.pdf. June 15, 2023.

City of Fresno, 2023. City of Fresno GIS Viewer. Available: https://experience.arcgis.com/experience/2b2f1f8322fb426db97ed50fc1693786/?draft=true. Accessed November 3, 2023.

California Department of Toxic Substances Control (DTSC). 2023. DTSC's Hazardous Waste and Substances Site List—Site Cleanup (Cortese List). Available: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed November 3, 2023.

State Water Resources Control Board (SWRCB), 2023. GeoTracker database. Available: https://geotracker.waterboards.ca.gov/. Accessed November 6, 2023.

# 2.10 Hydrology and Water Quality

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **X. HYDROLOGY AND WATER QUALITY —** Would the project: | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☒ | ☐ |

## 2.10.1 Environmental Setting

The City of Fresno relies on groundwater from the North Kings Subbasin; surface water from Central Valley Project (CVP), through a contract with the USBR; Kings River water, through a contract with FID; and recycled water. Water production in the City of Fresno has consisted of 100% groundwater prior to the commissioning of the City's first surface water treatment facility (SWTF) in 2004. Since 2004, the City of Fresno has invested in expanding its surface water treatment capabilities and now has three SWTFs that provide approximately half of all potable water demands in the service area (City of Fresno 2021).

### Surface Water Hydrology and Water Quality

The San Joaquin River Hydrologic Region is in California's Central Valley, and is generally the northern portion of the San Joaquin Valley, including the Proposed Project site. The region is south of the Sacramento River Hydrologic Region and north of the Tulare Lake Hydrologic Region. The region includes approximately half of the Sacramento–San Joaquin Delta (Delta). The San Joaquin River basin has average annual runoff of approximately 4 million acre-feet (DWR 2014). The San Joaquin River is the principal river in the region, running along the northern border of Fresno County, approximately 9 miles north of the Proposed Project site; all other streams in the area are tributaries to the San Joaquin. The San Joaquin River originates in the Sierra Nevada and flows westerly forming the border between

Fresno and Madera Counties downstream from Mammoth Pool Reservoir. The San Joaquin River and its tributaries eventually drain to the Delta. The San Joaquin River water supply has excellent water quality as it originates from snowmelt from the high Sierras and has not been detrimentally impacted (City of Fresno 2021). The Kings River originates high in the Sierra Nevada near the Inyo County line. It has a large drainage basin including most of Kings Canyon National Park and most of the area between Shaver and Florence Lakes in the north to the Fresno/Tulare County border in the south. The Kings River is connected to the San Joaquin River by the James Bypass, a manmade canal, approximately 14 miles to the southwest of the Proposed Project site.

The water quality of the San Joaquin River is affected by agricultural return flows during the dry season. These return flows frequently transport pesticides, nutrients, and sediment from agricultural areas into the south Delta. In addition, many pesticides are applied during the dormant spray season, typically November to January, and can be transported to water bodies during rainfall events. The San Joaquin River from the Merced River to the Tuolumne River is impaired on the state's 2014/2016 Clean Water Act Section 303(d) list for all of the following: alpha-BHC (benzenehexachloride or alpha-HCH), chloropyrifos, dichlorodiphenyldichloroethylene, dichlorodiphenyltrichloroethane, electrical conductivity (EC), Group A pesticides, mercury, pH), specific conductivity, water temperature, total dissolved solids, and toxicity (California State Water Resources Control Board 2018). The Proposed Project is primarily surrounded by agricultural fields where surface water is comprised of agricultural canals, ponds, and flood control channels and basins.

## Groundwater Hydrology and Water Quality

The San Joaquin River Hydrologic Region has 11 alluvial groundwater basins and subbasins. The Proposed Project site is located within the San Joaquin Valley groundwater basin and the Kings subbasin (City of Fresno 2020).

Groundwater on the west side of the San Joaquin Valley is generally of the sulfate or bicarbonate type, and the upper aquifer, generally, is high in calcium and magnesium sulfate (DWR 2006). Groundwater below 300 feet and above the Corcoran Clay shows a tendency of decreased dissolved solids with increased depth. Most of the groundwater of the lower aquifer is of the sodium sulfate type, and the difference in quality between the upper and lower aquifers is that the confined zone contains less dissolved solids. Groundwater in western Fresno County can have an upper total dissolved solids (TDS) range between 2,000 and 3,000 milligrams per liter. High TDS is one impairment of groundwater in the subbasin, and groundwater at certain locations contains selenium and boron that may limit its use (North Kings Groundwater Sustainability Agency 2022).

The sustainable yield, defined as the amount of groundwater pumping that can occur while maintaining groundwater at sustainable levels and avoiding undesirable results. The sustainable yield for the Kings Subbasin is 1,140,000 AF/year.

Two notable groundwater depressions exist. One is centered in Fresno-Clovis urban area. The other is centered approximately 20 miles southwest of Fresno (DWR 2000) in the Raisin City Water District. Most well water levels indicated a response to the 1976-77 drought. After the 1987-92 drought, wells in the northeast showed water levels from 10 to 40 feet below pre-1976-77 drought water levels. Water levels in the western subbasin experienced declines of 10 to 50 feet during the 1987-92 drought and are in

various stages of recovery to mid-1980s levels (DWR 2008). As of March 2023, the groundwater level in the Proposed Project area was approximately 110 feet below ground surface (bgs) (DWR 2023).

### Flood Control and Flood Management Facilities

The San Joaquin River is not in the vicinity of the Proposed Project site, however, a small area in the northwest portion of the RWRF is at risk for a 100-year flood event; however, the 100-year flood zone is not located on the Proposed Project Site (City of Fresno 2014).

Fresno's precipitation comes in episodic storm events, which may be severe and may cause localized flooding. The Fresno area receives inflows of regional runoff from a large watershed to the east, and is in the path of natural drainage from the valley floor, foothills and Sierra Nevada range. The San Joaquin River, confined between bluffs, comprises the northern boundary of Fresno. The Fresno Metropolitan Flood Control District (FMFCD) is responsible for flood control and storm water planning and management.

The urban storm water drainage program managed by FMFCD provides a system comprised of storm drainage collection, conveyance, detention and retention serving planned urban and rural areas within the Fresno-Clovis environs. The adopted Storm Drainage and Flood Control Master Plan divides the service area into 163 local drainage areas. Collectively, the system has in excess of 600 miles of storm drainage pipeline and 154 local stormwater management basins together with ancillary facilities, such as storm water lift pump stations.

## 2.10.2 Discussion

a, b) **Less than Significant.**

**Construction**

Construction of the Proposed Project would involve the use of heavy equipment, such as excavation, grading, earthmoving, movement of spoils, installation of pipelines, and the construction of process reactors, equalization basins, and process control building. Even though soil erosion potential on the Proposed Project site is generally low, the disturbance of soils from construction activities have the potential to degrade water quality as a result of increased sedimentation and discharge associated with stormwater runoff. In addition, the use of heavy machinery during construction would have the potential to result in an accidental release of fuels, oils, solvents, hydraulic fluid, and other construction-related fluids to the environment.

Routine Project operations and maintenance activities are not anticipated to result in substantial soil erosion or loss of topsoil.

Contractors would be required to obtain a National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Discharges of Stormwater Associated with Construction Activities (Construction General Permit) from the Central Valley Regional Water Quality Control Board before initiating ground-disturbing activities. Among the permit's conditions would be preparation and implementation of a storm water pollution prevention plan (SWPPP) that would identify and require implementation of best management practices (BMPs)

to prevent sediment and other construction-related compounds (e.g., fuel, oil) from entering stormwater runoff. Compliance with the NPDES Construction General Permit, including the implementation of BMPs described in the SWPPP, would ensure that the Proposed Project would avoid and/or minimize the potential impact of soil erosion or the loss of topsoil during construction. Therefore, this impact would be less than significant.

**Operations**

Equipment functional testing and process performance testing will be performed as part of the startup and commissioning of the Proposed Project. Instrumentation and controls will be programmed so that they are integrated into the City's existing plant-wide control system. It is anticipated that existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF. There would be no significant increase in sediment or other potential pollutants discharged into receiving waters. As a result, impacts on water quality from the Proposed Project's operation and maintenance activities would be less than significant.

ci) **Less than Significant.** Construction for the Proposed Project would include temporary impacts that cold temporarily alter the existing drainage pattern of the site or area. The Proposed Project would require earthmoving activities that could alter the existing drainage pattern of the site temporarily during construction. As discussed in Section 2.6, *Geology and* Soils, soils in the Proposed Project area have low potential for erosion; however, earthmoving and grading activities during construction of the Proposed Project have the potential to cause erosion. Routine operations and maintenance activities are not anticipated to result in substantial soil erosion or loss of topsoil.

Construction would be required to adhere to BMPs associated with the NPDES Construction General Permit, to control sediment in stormwater runoff from the Proposed Project. Before obtaining a grading permit, all development projects are required to submit grading plans to the City for review and approval. Developers must submit the following to satisfy the grading plan check process: grading plans stamped and signed by a licensed architect or civil engineer; and proof of coverage under the NPDES Construction General Permit and comply with the requirements of the permit, including developing erosion control site plan. Therefore, this impact would be less than significant.

ci-ii) **Less than Significant.** The Proposed Project would include temporary impacts that could temporarily alter the existing drainage pattern of the site or area and could lead to increased runoff. Following construction, the Proposed Project would include pipelines that would be installed within areas that are currently paved and would be buried following construction and would not represent new impervious surfaces. The Process Control building would be constructed in an area that is currently paved and would be approximately 360 sq ft. The metal deck shade structure would be approximately 500 sq ft. These facilities would introduce impervious surfaces that could permanently alter drainage patterns and increase runoff from the Proposed Project site.

Construction would be required to adhere to BMPs associated with the NPDES Construction General Permit. In addition, compliance with the Stormwater Quality Management Program (SWQMP), would reduce the potential environmental effects of increased surface runoff resulting

from the proposed project, and reduce the potential effects of drainage pattern alteration to runoff capacity or pollution resulting from the Proposed Project. Therefore, this impact would be less than significant.

civ) **Less than Significant.** As discussed in Section 2.10.1, *Environmental Setting*, a small area in the northwest portion of the RWRF is at risk for a 100-year flood event; however, 100-year flood zone is not located on the Proposed Project Site. In addition, although the Proposed Project would alter existing drainage on the site through the addition of impervious surfaces, the Proposed Project is not anticipated to substantially alter existing patterns of the Proposed Project site or vicinity in a manner which would impede or redirect flood flows given their small size and the existing impervious surfaces at the Proposed Project site. Lastly, as discussed previously, all development projects are required to submit grading plans to the City for review and approval. Therefore, impacts related to the alteration of existing drainage patterns such that flood flows would be impeded or redirected would be less than significant.

d) **Less than significant**. While a small area in the northeast portion of the RWRF is at risk for a 100-year flood event, the Proposed Project will not be constructed in an existing Flood Zone as designated by FEMA. As discussed in previously, the Proposed Project would comply with the NPDES Construction General Permit, including the implementation of BMPs described in the SWPPP to prevent water quality pollutants such as silt, sediment, hazardous materials, and construction-related fluids from entering receiving waters. Impacts would be less than significant.

e) **Less than Significant.** As described previously under checklist items a) and b), the Proposed Project would comply with the NPDES Construction General Permit, including the implementation of BMPs described in the SWPPP to prevent water quality pollutants such as silt, sediment, hazardous materials, and construction-related fluids from entering receiving waters. No additional water would be required for the operation of the Proposed Project, and water required for construction would be temporary and minimal compared to the City of Fresno's existing water supply. Implementation of the Proposed Project would reduce the total nitrogen discharged from the plant, meeting the Water Quality Control Plan for the San Joaquin River Basin (Basin Plan) amended in 2018 by the Central Valley Regional Water Quality Control Board (Regional Board) to incorporate a Central Valley-wide Salt and Nutrient Management Planning (SNMP) (Resolution R5-2018-0034). Impacts would be less than significant.

## 2.10.3 References

California Department of Water Resources (DWR). 2008. California's Groundwater Bulletin 118, San Joaquin Valley Groundwater Basin Kings Subbasin.

———. 2014. California Water Plan Update 2013. October 2014.

———. 2023. SGMA Data Viewer. Available: https://sgma.water.ca.gov/webgis/?appid=SGMA DataViewer#gwlevels. Accessed November 2023.

California State Water Resources Control Board. 2023. Surface Water Quality Assessment Program Available: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired. Accessed November 2023.

City of Fresno. July 2021. 2020 Urban Water Management Plan.

Federal Emergency Management Agency (FEMA). 2009. FEMA Flood Map 06019C2085H: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed November 2023.

North Kings Groundwater Sustainability Agency. June 13, 2022. Groundwater Sustainability Plan.

# 2.11 Land Use and Planning

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XI. LAND USE AND PLANNING —** Would the project: | | | | |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.11.1 Environmental Setting

The Proposed Project is located in southwest Fresno within the existing RWRF. The Project site is zoned public and institutional and designated as water and wastewater by the City of Fresno General Plan (Fresno 2014).

## 2.11.2 Discussion

a, b) **No Impact.** The Proposed Project would involves upgrades to the RWRF in order to reduce the total nitrogen discharged from the plant. The Proposed Project is not located in a residential area and would not physically divide an established community. The Proposed Project would be located entirely within the existing RWRF and located on land designated for water and wastewater treatment facilities and would be consistent with existing land uses, plans, policies, and regulations. Therefore, no impact would occur.

## 2.11.3 References

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.12 Mineral Resources

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XII. MINERAL RESOURCES —** Would the project: | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.12.1 Environmental Setting

Mineral resources, such as aggregate material, are necessary to support urban development, as all public and private projects utilize this material for roadway paving, structural elements, and hardscape, including sidewalks, curbing, and gutters. Mineral Resource Zones (MRZs) are categorized by geologic factors into four broad classifications (MRZ-1 through MRZ-4). Zones that are likely to include significant existing or likely mineral deposits are classified as MRZ-2 areas. Mineral resources within the City are concentrated along the San Joaquin River Corridor.

## 2.12.2 Discussion

a, b) **No Impact.** The Proposed Project is located in southwest Fresno and no MRZ-2 zones have been mapped by the CGS in proximity to the Proposed Project site (Fresno County 2023). As there are no known mineral resources underlying the Proposed Project site, no impact to known mineral resources of regional or state-wide value and no impact related to the loss of availability of a locally-important mineral resource recovery site would result from implementation of the Proposed Project.

## 2.12.3 References

Fresno County. 2023. *Fresno County General Plan Background Report*. April 2023.

# 2.13 Noise

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XI. NOISE —** Would the project result in: | | | | |
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.13.1 Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air, while noise is defined as unwanted sound. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing and 120–140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, during assessments of potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hertz[1] and above 5,000 Hertz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as *A-weighting* and is expressed in units of A-weighted decibels (dBA).[2]

### Effects of Noise on People

The effects of noise on people fall into three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in individual thresholds of annoyance; different tolerances to noise tend to develop based on individuals' past experiences with noise.

[1] Hertz is a unit of frequency equivalent to one cycle per second.

[2] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

Thus, an important way to predict a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise levels, the following relationships occur:

- In carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

The human ear perceives sound in a nonlinear fashion; hence, the decibel scale was developed. Because the decibel scale is nonlinear, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

## Noise Attenuation

Stationary "point" sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on environmental conditions (e.g., atmospheric conditions and noise barriers, either vegetative or manufactured). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source (also depending on environmental conditions) (Caltrans 2013). Noise from large construction sites would have characteristics of both point and line sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

## Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration (FTA 2018):

- *Peak particle velocity* (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings.
- The *root mean square* (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal.
- Decibel notation, expressed as *vibration decibels* (VdB), is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

### Existing Ambient Noise Environment

The noise environment in the area surrounding the Proposed Project site is characterized by rural roadways, rural agricultural noise, and scattered residences. It includes low-volume traffic noise from tractors, large trucks, and other farm equipment, and both on- and off-road passenger vehicles. The ambient noise environment in the vicinity of the Proposed Project site was estimated using a relationship between population density and ambient noise that was determined during a research program by the U.S. Environmental Protection Agency. The agency estimated that residents of rural or other non-urban areas are exposed to outdoor ambient noise levels ranging from 35 to 50 dBA $L_{dn}$[3] (EPA 1974). Because the area surrounding the Proposed Project site can be categorized as a rural or other non-urban area, it is assumed that ambient noise levels would range between 35 and 50 dBA $L_{dn}$.

### Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Sensitive receptor land uses in the vicinity of the Proposed Project site include rural residence. The closest sensitive receptor is a residence located approximately 2,200 feet north of the site on S Polk Avenue, and is located within unincorporated Fresno County.

## 2.13.2 Discussion

a) **Less than Significant.** For the assessment of temporary construction noise impacts, project work would be conducted within the City of Freno City limits. Section 15-2506 (H)(6) of the City's Municipal Code exempts construction noise from utility projects undertaken by or under contract to the City. The nearest noise-sensitive receptors are located within unincorporated Fresno County, approximately 2,800 feet to the east of the Proposed Project site. Section 8.40.060 of the Fresno County Code exempts construction noise between the hours of 6 a.m. and 9 p.m. on weekdays, and 7 a.m. and 9 p.m. on weekends. Compliance with this code requirement would limit the Proposed Project's construction noise to a level determined to be acceptable by Fresno County.

On-site construction activities would only occur within Fresno County's construction-exempt hours and would not violate the County's noise standards. In addition, construction activities would occur only during daytime hours, when the existing ambient noise level is at its highest (e.g., traffic noise); no nighttime hours as defined by the Fresno County Code would occur, and the activities would be limited in duration. Therefore, construction of the Proposed Project is not expected to result in any temporary substantial noise increases relative to existing conditions.

[3] Also abbreviated "DNL," $L_{dn}$ is a 24-hour day and night A-weighted noise exposure level that accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

Normal operation of the Proposed Project would consist of equipment functional testing and process performance testing. The Project's instrumentation and controls would be programmed so that they are integrated into the City's existing plant-wide control system, and is anticipated to be operated and maintained by its existing work crews at the RWRF.

The Proposed Project would install new submersible pumps and three blowers that would be additional sources of operational noise. The blowers would be located within the proposed new building which would serve to attenuate noise generated by these sources. The nearest noise sensitive land uses are located over 2,200 feet from the proposed process control building. A typical blower generated a noise level of 90 dBA at 10 feet (MBA, 2008). At a distance of 2,200 feet and assuming 15 dBA of noise reduction from the building structure, blower noise would be reduced to 28 dBA, well below the ambient noise level of the rural area and the City of Fresno exterior nighttime noise standard of 45 dBA, Leq. The noise contribution from the new submersible pumps would be substantially less and would not further contribute to ambient noise levels at the nearest receptors. Consequently, the Proposed Project is not expected to result in any permanent substantial noise increases relative to existing conditions, nor would noise levels generated by Project maintenance activities exceed Fresno County's exterior noise standards at the nearest sensitive receptor.

Therefore, this impact would be less than significant.

b) **Less than Significant.** Construction of the Proposed Project would involve the use of excavators, scrapers, graders, cranes, loaders, and tractors. The use of skid steer loaders would be expected to generate the highest vibration levels during construction. Vibration levels of a skid steer loader (small bulldozer) are typically 0.003 in/sec PPV at 25 feet, which is typical for a wide range of soils. Under typical propagation conditions, vibration levels at 70 feet (the nearest facility) would be approximately 0.0006 in/sec PPV and 40 VdB, which is well below the Federal Transit Administration's threshold of 0.20 in/sec PPV for building damage and 72 VdB for human annoyance.

Operation of the Proposed Project would not include any activities that would generate significant levels of vibration. Therefore, it is not anticipated that Project operation would expose the nearest sensitive receptor or structure to vibration levels that would result in annoyance. For this reason, the following analysis of the Proposed Project's vibration impacts evaluates only the effects of on-site construction activities.

For adverse human reaction, the analysis applies the "strongly perceptible" threshold of 0.9 inch per second (in/sec) PPV for transient sources. For risk of architectural damage to historic buildings and structures, the analysis applies a threshold of 0.3 in/sec PPV to assess damage risk for all standard buildings. There are no historic structures in the vicinity of the Proposed Project site that could be adversely affected by vibration related to Project construction.

Therefore, this impact would be less than significant.

c) **No Impact.** No private airstrips, public airports, or public use airports are located within 2 miles of the Proposed Project site. The nearest airport is the Fresno Chandler Executive Airport,

approximately four miles northeast of the Project site. The Proposed Project site is well outside of the 60 CNEL noise contours for the airport (FCEA, 2021) Therefore, the Proposed Project would not expose people working in the Project area to excessive noise levels, and no impact would occur.

## 2.13.3 References

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual.* September 2018.

Fresno Chandler Executive Airport (FCEA). 2021. *Airport Master Plan Update*. November 2021.

Michael Brandman Associates (MDA). 2008. Expanded Noise Analysis Prepared for the Draft EIR County of San Luis Obispo Los Osos Wastewater Project. November 2008.

U.S. Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974.

# 2.14 Population and Housing

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XIV. POPULATION AND HOUSING —** Would the project: | | | | |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.14.1 Environmental Setting

The City of Fresno General Plan (Fresno 2014) shows that Fresno's population would grow to approximately 771,000 residents by 2035 which would represent the population at the general plan horizon. After the 2035 horizon year, it is anticipated that the city will continue to develop beyond the General Plan Horizon. It will grow into the remaining portions of the SOI that were not developed during the horizon of the General Plan. Full Buildout of this SOI is anticipated to occur well after 2035. General Plan Buildout anticipates an additional 425,000 new residents over the existing population by an unspecified date within the SOI, resulting in a total population of 970,000 (Fresno 2014). These projections were influenced by a variety of factors, including employment opportunities and housing conditions and needs.

## 2.14.2 Discussion

a, b) **No Impact.** The Proposed Project involves upgrades to the RWRF which include a biological process on the dewatering sidestream that converts ammonia to nitrogen gas, which will reduce the total nitrogen discharged from the plant. The Proposed Project would not include new homes. Construction would be short-term and would not require additional workers outside of the existing workforce. Existing RWRF workers would be responsible for the operation of the Proposed Project. The Proposed Project site is located on a parcel zoned for public and institutional and would not displace any housing or people. Therefore, no impacts related to population and housing would occur.

## 2.14.3 References

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.15 Public Services

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XV. PUBLIC SERVICES —** | | | | |
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: | | | | |
| i) Fire protection? | ☐ | ☐ | ☐ | ☒ |
| ii) Police protection? | ☐ | ☐ | ☐ | ☒ |
| iii) Schools? | ☐ | ☐ | ☐ | ☒ |
| iv) Parks? | ☐ | ☐ | ☐ | ☒ |
| v) Other public facilities? | ☐ | ☐ | ☐ | ☒ |

## 2.15.1 Environmental Setting

The Proposed Project site is located in southwestern Fresno and within the City's planning area.

The City of Fresno Fire Department (Fire Department) provides fire suppression, fire prevention, hazardous material mitigation, rescue, and emergency medical services to the City, including the Proposed Project site within the RWRF. The City participates in aid agreements with surrounding emergency response agencies within Fresno county to ensure that the nearest responding fire agency responds to an emergency regardless of jurisdiction within which it is located. The Proposed Project site lies between Fire Station 7 at 2571 S Cherry and Fire Station 16 at 2510 N Polk.

The City of Fresno Police Department (Police Department) provide a full range of police services, including: uniformed patrol response to calls for service, crime prevention, tactical crime enforcement (such as gang/violent crime suppression), as well as traffic enforcement/accident prevention. The Police Department Patrol Division is divided into five policing districts. The Southwest Policing District is located south of McKinley Avenue and West of East Avenue and State Route 99 (SR 99) at 1211 Fresno Street, Fresno, CA 93706.

The Proposed Project site is within the Central Unified School District (CUSD), which serves the northwestern and west area (west of SR 99) as well as a large rural area west of the City. The CUSD is comprised of 24 schools and serves 15,730 students.

## 2.15.2 Discussion

a.i-v) The Proposed Project would not result in the construction of any new facilities or population that would generate a need for new or physically altered government facilities. The Proposed Project would not increase the treatment capacity of the RWRF. Therefore, demand for police and fire

protection and for community amenities such as schools and parks would not change relative to existing conditions, and no impacts would occur.

## 2.15.3 References

Central Unified School District. 2023. *At a Glance*. August 2023.

# 2.16 Recreation

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XVI. RECREATION —** | | | | |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.16.1 Environmental Setting

The Proposed Project site is located entirely within the existing RWRF which is zoned for public and institutional. There are no neighborhood, local, or regional parks or bikeways existing on the Proposed Project site or in the immediate vicinity (Fresno 2014).

## 2.16.2 Discussion

a, b) **No Impact.** The Proposed Project would not increase demand for recreation facilities, as the Proposed Project involves upgrades to the existing RWRF in order to reduce the total nitrogen discharged from the plant. The Proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities. In addition, the Proposed Project would not result in additional wastewater treatment beyond existing service that would support additional population growth that could lead to increased use of existing parks or recreational facilities. Therefore, no impacts on recreation would occur.

## 2.16.3 References

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.17 Transportation

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XII. TRANSPORTATION —** Would the project: | | | | |
| 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? | ☐ | ☐ | ☒ | ☐ |

## 2.17.1 Environmental Setting

### Highways

The Proposed Project site is located approximately 2 miles south of State Route 180, 5.2 miles southwest of State Route 99, and 5.75 miles east of State Route 41.

### County Roadways/Traffic Types

The Proposed Project site is located in the City of Fresno at the intersection of West Jensen Road and South Cornelia Avenue (Figure 1-1). Jenson Road is classified as a Major Collector and South Cornelia Avenue is classified as a Major and Minor Collector. The other largest roadways in the Project area are Marks Avenue (2.6 miles to the east of the Proposed Project site), and West Avenue (approximately 3.6 miles east). West Ave is classified as a Major Collector and Marks Avenue is classified as Minor Arterial by Caltrans (2023).

### Airports

The nearest airport to the Proposed Project site is the Fresno Chandler Executive Airport, approximately four miles to the northeast.

## 2.17.2 Discussion

a) **Less than Significant.** Construction of the Proposed Project would temporarily generate increases in vehicle trips by workers and vehicles on area roadways. There could be a minimal increase in truck trips for construction. It is anticipated existing work crews would operate and maintain the Proposed Project as part of normal operations at the RWRF. Project operation would resume to current conditions once construction is complete and would not result in an increase in vehicle trips. Because the increase in traffic during construction would be minimal, there would be no decreased levels of service. Therefore, this impact would be less than significant.

b) **Less than Significant.** Section 15064.3 of the State CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The State CEQA Guidelines identify vehicle miles traveled (VMT)—the amount and distance of automobile travel attributable

to a project—as the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and nonmotorized travel. Construction of the Proposed Project would last approximately 30 months. Operation of the Proposed Project would resume to current conditions and would not add an increased amount of VMT to the Proposed Project area. Therefore, this impact would be less than significant.

c) **Less than Significant.** Vehicles accessing the Proposed Project site would use local roadways. Based on the low number of anticipated construction trips relative to traffic volumes on local roadways and their limited duration, the Proposed Project would not introduce a substantial amount of construction equipment or vehicles that would present a hazard on local roadways and this impact of Proposed Project construction would be less than significant.

Construction of the Proposed Project would not result in new design features on roads in the area. Further, the Proposed Project would not result in potential traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways, given the intermittent and temporary nature of construction activities. Therefore, this impact would be less than significant.

d) **Less than Significant.** Temporary construction staging would be within the RWRF and would not block or interfere with emergency response vehicles. Increases in traffic volumes on local roadways providing access to the Proposed Project site could cause intermittent and temporary slowdowns in traffic flow during construction, although truck trips associated with Project operation are not expected to cause access on local roadways to deteriorate. For these reasons, the Proposed Project would not result in inadequate emergency access, and this impact would be less than significant.

## 2.17.3 References

Department of Transportation (Caltrans) 2023. California Road System-Functional Classification. Available: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538. Accessed November 6, 2023.

# 2.18 Tribal Cultural Resources

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

## 2.18.1 Environmental Setting

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, before public distribution of the document, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Indian tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Fresno County has a number of Rancherias such as Table Mountain Rancheria, Millerton Rancheria, Big Sandy Rancheria, Cold Springs Rancheria, and Squaw Valley Rancheria. These Rancherias are not located within the city limits.

Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

## 2.18.2 Discussion

a.i, a.ii) **Less than Significant with Mitigation Incorporated**. Tribal cultural resources are:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing in the California Register of Historical Resources, or a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k); or

(2) Resources determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c).

For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). A historical resource as defined in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a non-unique archaeological resource as defined in PRC Section 21083.2(h) may also be a tribal cultural resource.

As determined through background research conducted at the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System and a survey, the Proposed Project would not affect any known archaeological resources that could be considered tribal cultural resources, listed or determined eligible for listing in the California Register of Historical Resources, or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1).

Currently, the Table Mountain Rancheria Tribe and the Dumna Wo Wah Tribe have requested to be notified pursuant to Assembly Bill 52 (AB 52). A certified letter was mailed to the above mentioned tribes on October 24. The 30-day comment period ended on November 24. No tribes have requested consultation.

Based on the results of the tribal outreach efforts, no known tribal cultural resources listed or determined eligible for listing in the California Register, or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be affected by the proposed project.

However, if any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts of the proposed project on the resource could be potentially significant. Any such potentially significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measure Cultural Resources-1: Cultural Resources Awareness Training Mitigation Measure Cultural Resources-2: Inadvertent Discovery of Cultural Resources**, and **Mitigation Measure Cultural Resources-3: Inadvertent Discovery of Human Remains** (see Section 3.5, *Cultural Resources*). These mitigation measures require that all construction personnel involved in ground disturbance receive a training on the identification of cultural resources, that work halt in the vicinity of a find until a qualified archaeologist can make an assessment and provide additional recommendations

if necessary, including contacting Native American Tribes, and for the appropriate treatment of human remains, including those that may be Native American (refer to Section 2.4, *Cultural Resources*).

## 2.18.3 References

Citations for Tribal Cultural Resources are confidential.

# 2.19 Utilities and Service Systems

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XIV. UTILITIES AND SERVICE SYSTEMS —** Would the project: | | | | |
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ |
| 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? | ☐ | ☐ | ☒ | ☐ |

## 2.19.1 Environmental Setting

The City of Fresno Water Division manages and operates the City of Fresno's water system. The City's water system consists of about 1,909 miles of distribution and transmission mains, 270 municipal groundwater wells, three surface water treatment plants, five water storage facilities with pump stations, and three booster pump stations. The water system covers approximately 115 square miles and serves a population of about 550,200.

Fresno meets its demand for domestic water from a combination of groundwater, treated surface water, and reclaimed water sources. Groundwater is accessed from the Kings River Sub-basin of the San Joaquin Valley Groundwater Basin, while surface water from the Central Valley Project on the San Joaquin River and Fresno Irrigation District on the Kings River, which are treated at the Northeast Surface Water Treatment Facility, the Southeast Surface Water Treatment Facility, and T-3 Water Storage and Surface Water Treatment Facility. Surface water is also used to replenish the groundwater aquifer.

The City of Fresno Wastewater Management Division (WMD) is responsible for the collection, conveyance, treatment, and reclamation of wastewater generated in the Fresno-Clovis metropolitan area. Wastewater treatment and disposal is handled through the City-operated Regional Sewer Agency for the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) and North Fresno Wastewater Reclamation Facility (North Facility) via a wastewater collection system that consists of gravity sewer pipes, manholes, lift stations, junction structures, and force mains. The RWRF is a biological, secondary level treatment plant, treating about 68 million gallons per day (mgd) of wastewater. In addition, up to 5 million gallons of wastewater per day is also treated to disinfected tertiary recycled water standards.

Electricity and natural gas are supplied to the Proposed Project Site by Pacific Gas & Electric (PG&E). Electrical facilities include both overhead and underground lines. Residential and commercial garbage service in the City of Fresno is provided by Mid Valley Disposal (City of Fresno). There are two active solid waste disposal facilities or landfills: the American Avenue Landfill and the Fresno Sanitary Landfill. The American Avenue Landfill is class II and III, has a Max Capacity of 32,700,000 tons, and has 29,358,535 tons of remaining capacity.

## 2.19.2 Discussion

a) **No Impact.** The Proposed Project involves upgrades to the RWRF which include a biological process on the dewatering sidestream that converts ammonia to nitrogen gas, which will reduce the total nitrogen discharged from the plant. New facilities, but no relocation of existing facilities, would be added to the existing RWRF to reduce effluent nitrate concentrations. As such, the Proposed Project would result in the construction of new wastewater facilities, but would not increase treatment capacity of the RWRF. The performance upgrades as part of the Proposed Project are needed to progress towards meeting these anticipated nitrate targets. Power for new equipment and instrumentation would come from the A Side Switchgear Building and cables would be routed primarily through existing duct banks to a new medium voltage transformer. No new natural gas or telecommunication facilities will be required for the Proposed Project. This Initial Study evaluates and addresses potential impacts associated with the Proposed Project. Therefore, no impact would occur.

b,c) **No Impact.** The Proposed Project involves upgrades to the RWRF which include a biological process on the dewatering sidestream that converts ammonia to nitrogen gas, which will reduce the total nitrogen discharged from the plant. The Proposed Project would not result in additional water service or wastewater treatment beyond existing service. No new or expanded water supply would be required and no increase in wastewater treatment capacity would be required as a result of the Proposed Project. Therefore, no impact would occur.

d,e) **Less than Significant.** Proposed Project construction activities would generate small amounts of solid waste. The quantity of solid waste is expected to be minimal and is not anticipated to affect the capacity of the local landfill. The construction contractor is responsible for contracting with a solid waste provider. As of November 2023, the American Avenue Disposal site has a remaining capacity of 29,358,535 tons. Due to the temporary nature of construction and small amount of construction waste anticipated to require disposal, the Proposed Project would not generate quantities of solid waste that would exceed the maximum permitted throughput of the American Avenue Disposal site. Operation of the Proposed Project would not be anticipated to generate solid waste over existing conditions.

The Proposed Project would comply with applicable federal, state, and local management and reduction statuses and regulations related to solid waste. Solid waste collection for the Proposed Project would be subject to Chapter 1, Subchapter 1, Parts 239 through 259 of Title 40 of the Code of Federal Regulations (CFR), which include regulations pertaining to solid waste. The Proposed Project would also be subject to applicable policies for solid waste management within the 2014 General Plan. The Proposed Project would also comply with implementation programs

for state and local solid waste reduction goals; as such, the impact of the Proposed Project on solid waste management regulations and reduction statuses would be less than significant.

## 2.19.3 References

California Department of Resources Recycling and Recovery (CalRecycle). 2023. SWIS Facility/Site Activity Details: American Avenue Disposal Site (10-AA-0009). Available: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4535?siteID=352. Accessed November 2023.

City of Fresno. 2014. *Fresno General Plan*. Adopted December 18, 2014.

# 2.20 Wildfire

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XV. WILDFIRE —** If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: | | | | |
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☐ | ☒ |

## 2.20.1 Environmental Setting

The Project site is located within a Local Responsibility Area and the Fresno Fire Department is responsible for fire suppression in the Project area. The Proposed Project site is located in an Unzoned Fire Hazard Severity Zone (CAL FIRE 2023).

## 2.20.2 Discussion

a) **Less than Significant.** The Proposed Project site is adjacent to lands occupied by intense agriculture. The vegetation and land use types have a low potential for wildland fires and the Proposed Project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Proposed Project activities would be contained within the boundaries of the Project area and would not impair emergency response access on roadways or to areas within or adjacent to the Project area. Therefore, this impact would be less than significant.

b) **Less than Significant.** The location of the Proposed Project is within the boundaries of the existing RWRF. Currently a concrete pad sits on the Proposed Project site and the inlet and outlet pipeline alignments would follow along a path that is currently paved. The area is not at a high risk for wildfire, and as stated in Section 2.15.1, and would not exacerbate existing wildfire risks with the introduction fuel, alteration of slope, etc. Impacts would be less than significant.

c) **Less than Significant.** The Proposed Project would include the construction of cables from the A Side Switchgear Building through existing duct banks to a new medium voltage transformer. Given the low wildfire potential because of the intense agricultural lands surrounding the Project site and that the new electrical components will be constructed in existing infrastructure, the Proposed Project is not expected to result in temporary or ongoing impacts to the environment

from the installation or maintenance of infrastructure that would exacerbate wildfire risks. This impact would be less than significant.

d) **No Impact.** The Proposed Project is not placed in an area at risk for flooding as discussed in Section 2.9 and is also in an Unzoned Fire Hazard Severity Zone. Fire hazards on site will be managed by the BMP and any flooding on site will be managed by the NPDES and SWPPP permits. Therefore, the Proposed Project would not expose people or structures to risks of downstream flooding or landslide, and no impact would occur.

## 2.20.3 References

California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zones in SRA, Fresno County. June 2023.

# 2.21 Mandatory Findings of Significance

| *Issues (and Supporting Information Sources):* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| **XVI. MANDATORY FINDINGS OF SIGNIFICANCE —** | | | | |
| 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? | ☐ | ☒ | ☐ | ☐ |

## 2.21.1 Discussion

a) **Less than Significant with Mitigation Incorporated.** As described in the preceding impact discussions, the impacts related to the potential of the Proposed Project to substantially degrade the environment would be less than significant with incorporated mitigation measures. As described in this initial study, the Proposed Project has the potential for impacts related to biological resources, cultural resources, geology and soils, greenhouse gas emissions and tribal cultural resources. However, these impacts would be avoided or reduced to a less-than-significant level with the incorporation of avoidance and mitigation measures discussed in each section.

b) **Less than Significant with Mitigation Incorporated.** This section provides a description of other actions in the area and a discussion of the cumulative impacts of those projects, in combination with the previously identified effects of the Proposed Project. State CEQA Guidelines Section 15355 states that "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts":

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The past, present, and reasonably foreseeable future conditions of the Proposed Project site and vicinity were considered for the cumulative analysis.

**Aesthetics**. Completion of the Proposed Project would result in some permanent visual changes to the Proposed Project site from the construction and installation of the proposed sidestream treatment infrastructure; however, this infrastructure would be consistent with the visual character of the existing water treatment facility. Further, these changes would be constructed and installed within the RWRF and would not be easily visible from the adjacent area. Therefore, cumulative impacts on aesthetics would be less than significant.

**Agriculture and Forestry Resources**. The Proposed Project site is within a developed area of the RWRF in the City of Fresno. The site is zoned public and institutional. The Proposed Project is located within an existing facility and would be consistent with existing land uses, plans, policies, and regulations. The Proposed Project would have no impact on forestry resources and thus would not contribute to cumulative impacts.

**Air Quality and Greenhouse Gas Emissions**. A number of individual projects in the vicinity of the Proposed Project may be under construction simultaneously with the Proposed Project. Depending on construction schedules and actual implementation of projects in and around Fresno County, generation of fugitive dust and pollutant emissions during construction may result in short-term air pollutants, which would contribute to short-term cumulative impacts on air quality. However, each individual project would be subject to SJVAPCD rules, regulations, and other mitigation requirements during construction. For cumulative impacts on air quality and greenhouse gas emissions, see Section 2.2, *Air Quality*, and Section 2.7, *Greenhouse Gas Emissions*, above. The thresholds used consider the contributions of other projects in the air basin. Additionally, greenhouse gas emissions are considered cumulative in nature because it is unlikely that a single project would contribute significantly to climate change.

**Biological Resources, Cultural Resources, Tribal Cultural Resources, Geology and Soils, and Hazards and Hazardous Materials**. The Proposed Project's impacts for these environmental issues would be limited to the Proposed Project site, and any significant impacts would be reduced to a less-than-significant level by implementing proposed mitigation measures. Thus, the Proposed Project would not contribute to cumulative impacts for these topics.

**Energy.** Construction of the Proposed Project would result in fuel consumption from the use of construction tools and equipment, truck trips to haul materials, and vehicle trips by construction workers commuting to and from the Proposed Project site. This impact would be temporary and localized. Once construction is complete, operational emissions would be minimal. Construction-related fuel consumption by the Proposed Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region.

**Hydrology and Water Quality**. Implementing the Proposed Project would involve the use of heavy equipment, such as excavation, grading, earthmoving, movement of spoils, installation of pipelines, and the construction of process reactors, equalization basins, and process control building. Even though soil erosion potential on the Proposed Project site is generally low, the disturbance of soils from construction activities have the potential to degrade water quality as a result of increased sedimentation and discharge associated with stormwater runoff; however, construction contractors would be required to acquire coverage under the NPDES Construction

General Permit, which requires the preparation and implementation of a SWPPP for construction activities. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; describe protocols for responding immediately to spills; and describe best management practices for controlling site run-on and runoff. Therefore, cumulative impacts would be less than significant.

**Land Use and Land Use Planning**. The Proposed Project would have no impact on land use and land use planning; therefore, it would not contribute to cumulative land use issues.

**Mineral Resources**. The Proposed Project would have no impact on mineral resources and thus would not contribute to cumulative impacts.

**Noise**. The Proposed Project's noise impacts are anticipated to be minor and the Proposed Project would comply with the noise standards in the Noise Element of the Fresno County General Plan. The Proposed Project is not expected to result in any permanent substantial noise increases relative to existing conditions, nor would noise levels generated by Proposed Project maintenance activities exceed Fresno County's exterior noise standards at the nearest sensitive receptor. Thus, cumulative noise impacts would be less than significant.

**Population and Housing**. The Proposed Project would have no impact on population growth in the area because it would not include any new residential or commercial development. The Proposed Project also would not result in temporary employment during construction and would not result in the permanent creation of a significant number of new jobs that would induce substantial population growth. Therefore, cumulative population and housing impacts would be less than significant.

**Public Services.** No commercial or residential development is proposed as part of the Proposed Project; therefore, the Proposed Project would not increase demands on fire protection or police services, nor would it affect the response time of these services. Therefore, cumulative public services impacts would be less than significant.

**Recreation**. The Proposed Project would have no impact on recreation and thus would not contribute to cumulative impacts.

**Transportation**. For cumulative impacts, see Section 2.12, *Transportation*.

**Utilities and Service Systems**. The Proposed Project does not include and would not require the relocation or construction of new or expanded wastewater treatment or stormwater drainage, natural gas, or telecommunications facilities. The Proposed Project would include the construction and installation of sidestream treatment infrastructure to reduce effluent nitrate concentrations and would not increase treatment capacity of the RWRF. The Proposed Project also would not require stormwater treatment. Therefore, cumulative impacts related to utilities and service systems would be less than significant.

The analyses in this draft initial study/mitigated negative declaration found that the Proposed Project and associated activities would have the potential to result in impacts on the environment in the areas of biological resources, cultural resources, geology and soils, greenhouse gas emissions, and tribal cultural resources. However, these potential impacts would be reduced to a less-than-significant level with implementation of the mitigation measures included in this document, and most impacts would be temporary (i.e., would occur only during construction). Other future projects proposed in the region and vicinity may increase the impacts identified herein, or the Proposed Project may contribute to other impacts. However, the Proposed Project is not anticipated to contribute substantially to any one impact, and the Proposed Project's impacts are not anticipated to be cumulatively considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of future projects. Thus, this impact would be less than significant with mitigation incorporated.

c) **Less than Significant with Mitigation Incorporated.** The Proposed Project would not result in any substantial adverse effects on human beings, either directly or indirectly, because each potentially significant impact can be reduced to a less-than-significant level with the implementation of the mitigation measures provided in this document. No other substantial adverse effects on human beings are anticipated as a result of the Proposed Project, resulting in a less-than-significant impact with mitigation incorporated.

# Appendix A
## Air Quality

# Fresno sidestream 2 Detailed Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Fresno sidestream 2 |
| Construction Start Date | 9/1/2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.70 |
| Precipitation (days) | 22.6 |
| Location | 36.704069939547395, -119.89501607174792 |
| County | Fresno |
| City | Fresno |
| Air District | San Joaquin Valley APCD |
| Air Basin | San Joaquin Valley |
| TAZ | 2491 |
| EDFZ | 5 |
| Electric Utility | Pacific Gas & Electric Company |
| Gas Utility | Pacific Gas & Electric |
| App Version | 2022.1.1.20 |

## 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 |
|---|---|---|---|---|---|---|---|---|
| General Light Industry | 2.50 | 1000sqft | 0.06 | 2,500 | 0.00 | — | — | buildings and structures |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| User Defined Industrial | 1.00 | User Defined Unit | 0.00 | 13,000 | 0.00 | — | — | EQ basins and deammonification reactors |

### 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. | 2.68 | 2.31 | 16.6 | 19.3 | 0.04 | 0.60 | 2.68 | 3.28 | 0.55 | 0.43 | 0.99 | — | 5,285 | 5,285 | 0.19 | 0.19 | 5.67 | 5,351 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.85 | 2.82 | 20.0 | 19.8 | 0.04 | 0.73 | 2.69 | 3.43 | 0.68 | 0.45 | 1.12 | — | 5,437 | 5,437 | 0.20 | 0.29 | 0.17 | 5,530 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.80 | 0.69 | 4.48 | 6.48 | 0.01 | 0.14 | 0.62 | 0.76 | 0.13 | 0.13 | 0.26 | — | 1,763 | 1,763 | 0.07 | 0.08 | 1.02 | 1,787 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.15 | 0.13 | 0.82 | 1.18 | < 0.005 | 0.03 | 0.11 | 0.14 | 0.02 | 0.02 | 0.05 | — | 292 | 292 | 0.01 | 0.01 | 0.17 | 296 |

### 2.2. 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.97 | 0.83 | 5.42 | 7.82 | 0.01 | 0.16 | 0.37 | 0.53 | 0.15 | 0.09 | 0.24 | — | 1,408 | 1,408 | 0.06 | 0.07 | 2.01 | 1,433 |
| 2025 | 2.68 | 2.31 | 16.6 | 18.1 | 0.03 | 0.60 | 2.68 | 3.28 | 0.55 | 0.43 | 0.99 | — | 4,470 | 4,470 | 0.16 | 0.19 | 5.67 | 4,536 |
| 2026 | 2.05 | 1.76 | 11.6 | 19.3 | 0.04 | 0.37 | 1.00 | 1.37 | 0.34 | 0.24 | 0.58 | — | 5,285 | 5,285 | 0.19 | 0.19 | 4.85 | 5,351 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 2.30 | 1.94 | 14.0 | 18.8 | 0.03 | 0.49 | 1.03 | 1.52 | 0.45 | 0.26 | 0.71 | — | 4,201 | 4,201 | 0.15 | 0.29 | 0.17 | 4,291 |
| 2025 | 2.85 | 2.41 | 20.0 | 19.8 | 0.04 | 0.73 | 2.69 | 3.43 | 0.68 | 0.45 | 1.12 | — | 5,437 | 5,437 | 0.20 | 0.29 | 0.17 | 5,530 |
| 2026 | 1.03 | 0.88 | 6.96 | 10.4 | 0.03 | 0.25 | 0.65 | 0.77 | 0.23 | 0.16 | 0.31 | — | 3,490 | 3,490 | 0.14 | 0.11 | 0.08 | 3,519 |
| 2027 | 1.31 | 2.82 | 8.00 | 12.8 | 0.03 | 0.25 | 0.70 | 0.95 | 0.23 | 0.17 | 0.40 | — | 4,175 | 4,175 | 0.16 | 0.15 | 0.08 | 4,223 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.30 | 0.26 | 1.86 | 2.49 | < 0.005 | 0.07 | 0.14 | 0.21 | 0.06 | 0.04 | 0.10 | — | 594 | 594 | 0.02 | 0.04 | 0.40 | 608 |
| 2025 | 0.80 | 0.69 | 4.48 | 6.16 | 0.01 | 0.14 | 0.62 | 0.76 | 0.13 | 0.13 | 0.26 | — | 1,417 | 1,417 | 0.05 | 0.08 | 1.02 | 1,443 |
| 2026 | 0.71 | 0.61 | 4.03 | 6.48 | 0.01 | 0.12 | 0.37 | 0.49 | 0.12 | 0.09 | 0.20 | — | 1,763 | 1,763 | 0.07 | 0.07 | 0.78 | 1,787 |
| 2027 | 0.04 | 0.23 | 0.17 | 0.31 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 88.3 | 88.3 | < 0.005 | 0.01 | 0.08 | 90.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.05 | 0.05 | 0.34 | 0.45 | < 0.005 | 0.01 | 0.03 | 0.04 | 0.01 | 0.01 | 0.02 | — | 98.4 | 98.4 | < 0.005 | 0.01 | 0.07 | 101 |
| 2025 | 0.15 | 0.13 | 0.82 | 1.12 | < 0.005 | 0.03 | 0.11 | 0.14 | 0.02 | 0.02 | 0.05 | — | 235 | 235 | 0.01 | 0.01 | 0.17 | 239 |
| 2026 | 0.13 | 0.11 | 0.74 | 1.18 | < 0.005 | 0.02 | 0.07 | 0.09 | 0.02 | 0.02 | 0.04 | — | 292 | 292 | 0.01 | 0.01 | 0.13 | 296 |
| 2027 | 0.01 | 0.04 | 0.03 | 0.06 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 14.6 | 14.6 | < 0.005 | < 0.005 | 0.01 | 15.0 |

# 3. Construction Emissions Details

## 3.1. Demolition (2024) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.72 | 0.60 | 4.87 | 5.75 | 0.01 | 0.16 | — | 0.16 | 0.14 | — | 0.14 | — | 772 | 772 | 0.03 | 0.01 | — | 775 |
| Demolition | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.72 | 0.60 | 4.87 | 5.75 | 0.01 | 0.16 | — | 0.16 | 0.14 | — | 0.14 | — | 772 | 772 | 0.03 | 0.01 | — | 775 |
| Demolition | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.29 | 0.35 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 46.5 | 46.5 | < 0.005 | < 0.005 | — | 46.7 |
| Demolition | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.05 | 0.06 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 7.70 | 7.70 | < 0.005 | < 0.005 | — | 7.73 |
| Demolition | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.23 | 0.22 | 0.12 | 1.95 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 297 | 297 | 0.02 | 0.01 | 1.19 | 303 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 53.6 | 53.6 | < 0.005 | 0.01 | 0.14 | 56.1 |
| Hauling | 0.01 | 0.01 | 0.35 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 285 | 285 | 0.01 | 0.05 | 0.69 | 300 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.21 | 0.19 | 0.15 | 1.58 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 264 | 264 | 0.01 | 0.01 | 0.03 | 268 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 53.7 | 53.7 | < 0.005 | 0.01 | < 0.005 | 56.0 |
| Hauling | 0.01 | 0.01 | 0.37 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 285 | 285 | 0.01 | 0.05 | 0.02 | 299 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.10 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 16.5 | 16.5 | < 0.005 | < 0.005 | 0.03 | 16.8 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.23 | 3.23 | < 0.005 | < 0.005 | < 0.005 | 3.38 |
| Hauling | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 17.2 | 17.2 | < 0.005 | < 0.005 | 0.02 | 18.0 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 2.73 | 2.73 | < 0.005 | < 0.005 | 0.01 | 2.77 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.54 | 0.54 | < 0.005 | < 0.005 | < 0.005 | 0.56 |
| Hauling | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.85 | 2.85 | < 0.005 | < 0.005 | < 0.005 | 2.99 |

## 3.3. Site Preparation (2024) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.02 | 0.86 | 6.79 | 8.83 | 0.01 | 0.30 | — | 0.30 | 0.28 | — | 0.28 | — | 1,279 | 1,279 | 0.05 | 0.01 | — | 1,284 |
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.18 | 0.15 | 1.22 | 1.59 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 230 | 230 | 0.01 | < 0.005 | — | 231 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.22 | 0.29 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 38.1 | 38.1 | < 0.005 | < 0.005 | — | 38.3 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.27 | 0.25 | 0.20 | 2.10 | 0.00 | 0.00 | 0.35 | 0.35 | 0.00 | 0.08 | 0.08 | — | 352 | 352 | 0.02 | 0.02 | 0.04 | 357 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 53.7 | 53.7 | < 0.005 | 0.01 | < 0.005 | 56.0 |
| Hauling | 0.05 | 0.03 | 1.47 | 0.34 | 0.01 | 0.02 | 0.30 | 0.32 | 0.02 | 0.08 | 0.10 | — | 1,142 | 1,142 | 0.02 | 0.18 | 0.07 | 1,196 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.05 | 0.03 | 0.38 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 65.6 | 65.6 | < 0.005 | < 0.005 | 0.12 | 66.7 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 9.65 | 9.65 | < 0.005 | < 0.005 | 0.01 | 10.1 |
| Hauling | 0.01 | < 0.005 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 205 | 205 | < 0.005 | 0.03 | 0.21 | 216 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 10.9 | 10.9 | < 0.005 | < 0.005 | 0.02 | 11.0 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.60 | 1.60 | < 0.005 | < 0.005 | < 0.005 | 1.67 |
| Hauling | < 0.005 | < 0.005 | 0.05 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 34.0 | 34.0 | < 0.005 | 0.01 | 0.04 | 35.7 |

## 3.5. Site Preparation (2025) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.94 | 0.79 | 6.44 | 8.75 | 0.01 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,279 | 1,279 | 0.05 | 0.01 | — | 1,283 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.40 | 0.55 | < 0.005 | 0.02 | — | 0.02 | 0.01 | — | 0.01 | — | 80.1 | 80.1 | < 0.005 | < 0.005 | — | 80.4 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.07 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 13.3 | 13.3 | < 0.005 | < 0.005 | — | 13.3 |
| Dust From Material Movement | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.26 | 0.24 | 0.18 | 1.93 | 0.00 | 0.00 | 0.35 | 0.35 | 0.00 | 0.08 | 0.08 | — | 344 | 344 | 0.02 | 0.02 | 0.04 | 350 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 52.7 | 52.7 | < 0.005 | 0.01 | < 0.005 | 55.1 |
| Hauling | 0.04 | 0.02 | 1.43 | 0.33 | 0.01 | 0.02 | 0.30 | 0.32 | 0.02 | 0.08 | 0.10 | — | 1,120 | 1,120 | 0.02 | 0.17 | 0.07 | 1,172 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.01 | 0.12 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.01 | — | 22.3 | 22.3 | < 0.005 | < 0.005 | 0.04 | 22.7 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.30 | 3.30 | < 0.005 | < 0.005 | < 0.005 | 3.45 |
| Hauling | < 0.005 | < 0.005 | 0.09 | 0.02 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 70.1 | 70.1 | < 0.005 | 0.01 | 0.07 | 73.4 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 3.70 | 3.70 | < 0.005 | < 0.005 | 0.01 | 3.76 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.55 | 0.55 | < 0.005 | < 0.005 | < 0.005 | 0.57 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 11.6 | 11.6 | < 0.005 | < 0.005 | 0.01 | 12.2 |

## 3.7. Grading (2025) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.32 | 1.11 | 11.2 | 6.65 | 0.02 | 0.46 | — | 0.46 | 0.42 | — | 0.42 | — | 1,965 | 1,965 | 0.08 | 0.02 | — | 1,972 |
| Dust From Material Movement | — | — | — | — | — | — | 1.59 | 1.59 | — | 0.17 | 0.17 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.32 | 1.11 | 11.2 | 6.65 | 0.02 | 0.46 | — | 0.46 | 0.42 | — | 0.42 | — | 1,965 | 1,965 | 0.08 | 0.02 | — | 1,972 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 1.59 | 1.59 | — | 0.17 | 0.17 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.13 | 1.29 | 0.76 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 226 | 226 | 0.01 | < 0.005 | — | 227 |
| Dust From Material Movement | — | — | — | — | — | — | 0.18 | 0.18 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.24 | 0.14 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.4 | 37.4 | < 0.005 | < 0.005 | — | 37.6 |
| Dust From Material Movement | — | — | — | — | — | — | 0.03 | 0.03 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.29 | 0.27 | 0.15 | 2.38 | 0.00 | 0.00 | 0.35 | 0.35 | 0.00 | 0.08 | 0.08 | — | 388 | 388 | 0.01 | 0.02 | 1.45 | 395 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 52.6 | 52.6 | < 0.005 | 0.01 | 0.14 | 55.1 |
| Hauling | 0.01 | < 0.005 | 0.33 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 280 | 280 | 0.01 | 0.04 | 0.68 | 294 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.26 | 0.24 | 0.18 | 1.93 | 0.00 | 0.00 | 0.35 | 0.35 | 0.00 | 0.08 | 0.08 | — | 344 | 344 | 0.02 | 0.02 | 0.04 | 350 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 52.7 | 52.7 | < 0.005 | 0.01 | < 0.005 | 55.1 |
| Hauling | 0.01 | < 0.005 | 0.36 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 280 | 280 | 0.01 | 0.04 | 0.02 | 293 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.23 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 41.0 | 41.0 | < 0.005 | < 0.005 | 0.07 | 41.7 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.06 | 6.06 | < 0.005 | < 0.005 | 0.01 | 6.34 |
| Hauling | < 0.005 | < 0.005 | 0.04 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 32.2 | 32.2 | < 0.005 | 0.01 | 0.03 | 33.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.80 | 6.80 | < 0.005 | < 0.005 | 0.01 | 6.91 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 1.00 | 1.00 | < 0.005 | < 0.005 | < 0.005 | 1.05 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.33 | 5.33 | < 0.005 | < 0.005 | 0.01 | 5.59 |

## 3.9. Building Construction (2025) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.59 | 0.49 | 3.91 | 5.12 | 0.01 | 0.13 | — | 0.13 | 0.12 | — | 0.12 | — | 713 | 713 | 0.03 | 0.01 | — | 715 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.59 | 0.49 | 3.91 | 5.12 | 0.01 | 0.13 | — | 0.13 | 0.12 | — | 0.12 | — | 713 | 713 | 0.03 | 0.01 | — | 715 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.32 | 0.26 | 2.11 | 2.75 | < 0.005 | 0.07 | — | 0.07 | 0.06 | — | 0.06 | — | 384 | 384 | 0.02 | < 0.005 | — | 385 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.38 | 0.50 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 63.5 | 63.5 | < 0.005 | < 0.005 | — | 63.7 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.44 | 0.41 | 0.22 | 3.57 | 0.00 | 0.00 | 0.52 | 0.52 | 0.00 | 0.12 | 0.12 | — | 582 | 582 | 0.02 | 0.02 | 2.18 | 592 |
| Vendor | 0.02 | 0.01 | 0.34 | 0.15 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 210 | 210 | 0.01 | 0.03 | 0.55 | 220 |
| Hauling | 0.01 | < 0.005 | 0.33 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 280 | 280 | 0.01 | 0.04 | 0.68 | 294 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.39 | 0.36 | 0.26 | 2.90 | 0.00 | 0.00 | 0.52 | 0.52 | 0.00 | 0.12 | 0.12 | — | 517 | 517 | 0.02 | 0.02 | 0.06 | 525 |
| Vendor | 0.02 | 0.01 | 0.36 | 0.16 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 211 | 211 | < 0.005 | 0.03 | 0.01 | 220 |
| Hauling | 0.01 | < 0.005 | 0.36 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 280 | 280 | 0.01 | 0.04 | 0.02 | 293 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.21 | 0.20 | 0.13 | 1.58 | 0.00 | 0.00 | 0.28 | 0.28 | 0.00 | 0.06 | 0.06 | — | 288 | 288 | 0.01 | 0.01 | 0.51 | 293 |
| Vendor | 0.01 | 0.01 | 0.19 | 0.08 | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 113 | 113 | < 0.005 | 0.02 | 0.13 | 119 |
| Hauling | 0.01 | < 0.005 | 0.19 | 0.04 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 151 | 151 | < 0.005 | 0.02 | 0.16 | 158 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.04 | 0.04 | 0.02 | 0.29 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 47.7 | 47.7 | < 0.005 | < 0.005 | 0.08 | 48.5 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 18.8 | 18.8 | < 0.005 | < 0.005 | 0.02 | 19.6 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 24.9 | 24.9 | < 0.005 | < 0.005 | 0.03 | 26.1 |

## 3.11. Building Construction (2026) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.56 | 0.46 | 3.80 | 5.09 | 0.01 | 0.11 | — | 0.11 | 0.10 | — | 0.10 | — | 713 | 713 | 0.03 | 0.01 | — | 715 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.56 | 0.46 | 3.80 | 5.09 | 0.01 | 0.11 | — | 0.11 | 0.10 | — | 0.10 | — | 713 | 713 | 0.03 | 0.01 | — | 715 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.23 | 0.19 | 1.58 | 2.12 | < 0.005 | 0.05 | — | 0.05 | 0.04 | — | 0.04 | — | 297 | 297 | 0.01 | < 0.005 | — | 298 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.04 | 0.29 | 0.39 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 49.2 | 49.2 | < 0.005 | < 0.005 | — | 49.4 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.41 | 0.38 | 0.20 | 3.29 | 0.00 | 0.00 | 0.52 | 0.52 | 0.00 | 0.12 | 0.12 | — | 570 | 570 | 0.02 | 0.02 | 1.98 | 580 |
| Vendor | 0.02 | 0.01 | 0.33 | 0.15 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 207 | 207 | < 0.005 | 0.03 | 0.48 | 216 |
| Hauling | 0.01 | < 0.005 | 0.33 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 274 | 274 | 0.01 | 0.04 | 0.64 | 288 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.35 | 0.34 | 0.24 | 2.66 | 0.00 | 0.00 | 0.52 | 0.52 | 0.00 | 0.12 | 0.12 | — | 506 | 506 | 0.02 | 0.02 | 0.05 | 514 |
| Vendor | 0.02 | 0.01 | 0.35 | 0.15 | < 0.005 | < 0.005 | 0.05 | 0.06 | < 0.005 | 0.01 | 0.02 | — | 207 | 207 | < 0.005 | 0.03 | 0.01 | 216 |
| Hauling | 0.01 | < 0.005 | 0.35 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 274 | 274 | 0.01 | 0.04 | 0.02 | 287 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.15 | 0.14 | 0.09 | 1.13 | 0.00 | 0.00 | 0.21 | 0.21 | 0.00 | 0.05 | 0.05 | — | 218 | 218 | 0.01 | 0.01 | 0.36 | 222 |
| Vendor | 0.01 | < 0.005 | 0.14 | 0.06 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 86.1 | 86.1 | < 0.005 | 0.01 | 0.09 | 90.1 |
| Hauling | < 0.005 | < 0.005 | 0.14 | 0.03 | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 114 | 114 | < 0.005 | 0.02 | 0.12 | 120 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.21 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 36.2 | 36.2 | < 0.005 | < 0.005 | 0.06 | 36.8 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 14.3 | 14.3 | < 0.005 | < 0.005 | 0.01 | 14.9 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 18.9 | 18.9 | < 0.005 | < 0.005 | 0.02 | 19.8 |

## 3.13. Paving (2026) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.84 | 0.71 | 6.40 | 8.98 | 0.03 | 0.24 | — | 0.24 | 0.22 | — | 0.22 | — | 2,911 | 2,911 | 0.12 | 0.02 | — | 2,921 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.84 | 0.71 | 6.40 | 8.98 | 0.03 | 0.24 | — | 0.24 | 0.22 | — | 0.22 | — | 2,911 | 2,911 | 0.12 | 0.02 | — | 2,921 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.25 | 0.21 | 1.92 | 2.69 | 0.01 | 0.07 | — | 0.07 | 0.07 | — | 0.07 | — | 871 | 871 | 0.04 | 0.01 | — | 874 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.35 | 0.49 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 144 | 144 | 0.01 | < 0.005 | — | 145 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.20 | 0.19 | 0.10 | 1.64 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 285 | 285 | 0.01 | 0.01 | 0.99 | 290 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 51.6 | 51.6 | < 0.005 | 0.01 | 0.12 | 54.1 |
| Hauling | 0.01 | < 0.005 | 0.33 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 274 | 274 | 0.01 | 0.04 | 0.64 | 288 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.18 | 0.17 | 0.12 | 1.33 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 253 | 253 | 0.01 | 0.01 | 0.03 | 257 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 51.7 | 51.7 | < 0.005 | 0.01 | < 0.005 | 54.1 |
| Hauling | 0.01 | < 0.005 | 0.35 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 274 | 274 | 0.01 | 0.04 | 0.02 | 287 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.03 | 0.41 | 0.00 | 0.00 | 0.08 | 0.08 | 0.00 | 0.02 | 0.02 | — | 78.5 | 78.5 | < 0.005 | < 0.005 | 0.13 | 79.8 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 15.5 | 15.5 | < 0.005 | < 0.005 | 0.02 | 16.2 |
| Hauling | < 0.005 | < 0.005 | 0.10 | 0.02 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 82.1 | 82.1 | < 0.005 | 0.01 | 0.08 | 86.1 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 13.0 | 13.0 | < 0.005 | < 0.005 | 0.02 | 13.2 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.56 | 2.56 | < 0.005 | < 0.005 | < 0.005 | 2.68 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 13.6 | 13.6 | < 0.005 | < 0.005 | 0.01 | 14.2 |

## 3.15. Paving (2027) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.81 | 0.68 | 6.10 | 8.98 | 0.03 | 0.22 | — | 0.22 | 0.20 | — | 0.20 | — | 2,909 | 2,909 | 0.12 | 0.02 | — | 2,919 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.69 | 5.69 | < 0.005 | < 0.005 | — | 5.71 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.94 | 0.94 | < 0.005 | < 0.005 | — | 0.95 |
| Paving | — | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.16 | 0.15 | 0.11 | 1.23 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 248 | 248 | 0.01 | 0.01 | 0.02 | 252 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 50.6 | 50.6 | < 0.005 | 0.01 | < 0.005 | 52.9 |
| Hauling | 0.01 | < 0.005 | 0.34 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 268 | 268 | < 0.005 | 0.04 | 0.02 | 280 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.50 | 0.50 | < 0.005 | < 0.005 | < 0.005 | 0.51 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.10 | 0.10 | < 0.005 | < 0.005 | < 0.005 | 0.10 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.52 | 0.52 | < 0.005 | < 0.005 | < 0.005 | 0.55 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.08 | 0.08 | < 0.005 | < 0.005 | < 0.005 | 0.08 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | 0.02 |
| Hauling | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.09 | 0.09 | < 0.005 | < 0.005 | < 0.005 | 0.09 |

## 3.17. Architectural Coating (2027) - 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.14 | 0.11 | 0.83 | 1.13 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | — | 1.71 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.01 | 0.10 | 0.13 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 15.4 | 15.4 | < 0.005 | < 0.005 | — | 15.4 |
| Architectural Coatings | — | 0.20 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.54 | 2.54 | < 0.005 | < 0.005 | — | 2.55 |
| Architectural Coatings | — | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.16 | 0.15 | 0.11 | 1.23 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 248 | 248 | 0.01 | 0.01 | 0.02 | 252 |
| Vendor | < 0.005 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 50.6 | 50.6 | < 0.005 | 0.01 | < 0.005 | 52.9 |
| Hauling | 0.01 | < 0.005 | 0.34 | 0.08 | < 0.005 | 0.01 | 0.07 | 0.08 | 0.01 | 0.02 | 0.03 | — | 268 | 268 | < 0.005 | 0.04 | 0.02 | 280 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 29.5 | 29.5 | < 0.005 | < 0.005 | 0.04 | 30.0 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.82 | 5.82 | < 0.005 | < 0.005 | 0.01 | 6.08 |
| Hauling | < 0.005 | < 0.005 | 0.04 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 30.8 | 30.8 | < 0.005 | < 0.005 | 0.03 | 32.3 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 4.89 | 4.89 | < 0.005 | < 0.005 | 0.01 | 4.97 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.96 | 0.96 | < 0.005 | < 0.005 | < 0.005 | 1.01 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.10 | 5.10 | < 0.005 | < 0.005 | < 0.005 | 5.34 |

# 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sequest | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 |
|---|---|---|---|---|---|---|
| Demolition | Demolition | 9/1/2024 | 10/1/2024 | 5.00 | 22.0 | — |
| Site Preparation | Site Preparation | 10/1/2024 | 2/1/2025 | 5.00 | 89.0 | — |
| Grading | Grading | 2/1/2025 | 4/1/2025 | 5.00 | 42.0 | — |
| Building Construction | Building Construction | 4/1/2025 | 8/1/2026 | 5.00 | 349 | — |
| Paving | Paving | 8/1/2026 | 1/1/2027 | 5.00 | 110 | — |
| Architectural Coating | Architectural Coating | 1/1/2027 | 3/1/2027 | 5.00 | 42.0 | — |

## 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 |
|---|---|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | Diesel | Average | 2.00 | 8.00 | 33.0 | 0.73 |
| Demolition | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel | Average | 2.00 | 8.00 | 84.0 | 0.37 |
| Site Preparation | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Site Preparation | Trenchers | Diesel | Average | 2.00 | 8.00 | 40.0 | 0.50 |
| Grading | Scrapers | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Grading | Graders | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| Grading | Plate Compactors | Diesel | Average | 1.00 | 8.00 | 8.00 | 0.43 |
| Building Construction | Cranes | Diesel | Average | 1.00 | 0.23 | 367 | 0.29 |
| Building Construction | Cement and Mortar Mixers | Diesel | Average | 3.00 | 2.29 | 10.0 | 0.56 |
| Building Construction | Welders | Diesel | Average | 3.00 | 2.29 | 46.0 | 0.45 |
| Building Construction | Forklifts | Diesel | Average | 2.00 | 1.15 | 82.0 | 0.20 |
| Building Construction | Air Compressors | Diesel | Average | 4.00 | 2.29 | 37.0 | 0.48 |
| Building Construction | Skid Steer Loaders | Diesel | Average | 3.00 | 2.29 | 71.0 | 0.37 |
| Paving | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| Paving | Surfacing Equipment | Diesel | Average | 2.00 | 8.00 | 399 | 0.30 |
| Paving | Sweepers/Scrubbers | Diesel | Average | 1.00 | 4.00 | 36.0 | 0.46 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 48.0 | 7.70 | LDA,LDT1,LDT2 |
| Demolition | Vendor | 4.00 | 4.00 | HHDT,MHDT |
| Demolition | Hauling | 4.00 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 64.0 | 7.70 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | 4.00 | 4.00 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Site Preparation | Hauling | 16.0 | 20.0 | HHDT |
| Site Preparation | Onsite truck | — | — | HHDT |
| Grading | — | — | — | — |
| Grading | Worker | 64.0 | 7.70 | LDA,LDT1,LDT2 |
| Grading | Vendor | 4.00 | 4.00 | HHDT,MHDT |
| Grading | Hauling | 4.00 | 20.0 | HHDT |
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 96.0 | 7.70 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 16.0 | 4.00 | HHDT,MHDT |
| Building Construction | Hauling | 4.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 48.0 | 7.70 | LDA,LDT1,LDT2 |
| Paving | Vendor | 4.00 | 4.00 | HHDT,MHDT |
| Paving | Hauling | 4.00 | 20.0 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 48.0 | 7.70 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | 4.00 | 4.00 | HHDT,MHDT |
| Architectural Coating | Hauling | 4.00 | 20.0 | HHDT |
| Architectural Coating | 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

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|
| Architectural Coating | 0.00 | 0.00 | 23,250 | 7,750 | — |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (Building Square Footage) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Demolition | 0.00 | 0.00 | 0.00 | 400 | — |
| Site Preparation | 0.00 | 12,000 | 0.00 | 0.00 | — |
| Grading | 0.00 | 0.00 | 63.0 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| General Light Industry | 0.00 | 0% |
| User Defined Industrial | 0.00 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2024 | 0.00 | 204 | 0.03 | < 0.005 |

| | | | | |
|---|---|---|---|---|
| 2025 | 0.00 | 204 | 0.03 | < 0.005 |
| 2026 | 0.00 | 204 | 0.03 | < 0.005 |
| 2027 | 0.00 | 204 | 0.03 | < 0.005 |

## 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 | 27.1 | annual days of extreme heat |

| | | |
|---|---|---|
| Extreme Precipitation | 1.80 | annual days with precipitation above 20 mm |
| Sea Level Rise | — | meters of inundation depth |
| Wildfire | 0.00 | 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 | 3 | 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 | 3 | 1 | 1 | 3 |
| 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 | 78.2 |
| AQ-PM | 92.8 |
| AQ-DPM | 20.8 |
| Drinking Water | 98.1 |
| Lead Risk Housing | 73.8 |
| Pesticides | 92.6 |

| | |
|---|---|
| Toxic Releases | 66.3 |
| Traffic | 6.80 |
| Effect Indicators | — |
| CleanUp Sites | 46.8 |
| Groundwater | 25.2 |
| Haz Waste Facilities/Generators | 22.0 |
| Impaired Water Bodies | 0.00 |
| Solid Waste | 75.7 |
| Sensitive Population | — |
| Asthma | 97.3 |
| Cardio-vascular | 91.9 |
| Low Birth Weights | 90.8 |
| Socioeconomic Factor Indicators | — |
| Education | 82.5 |
| Housing | 49.0 |
| Linguistic | 74.1 |
| Poverty | 79.1 |
| Unemployment | 96.5 |

## 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 | 21.99409727 |
| Employed | 19.97946875 |
| Median HI | 35.82702425 |
| Education | — |

| | |
|---|---|
| Bachelor's or higher | 21.19851148 |
| High school enrollment | 100 |
| Preschool enrollment | 18.51661748 |
| Transportation | — |
| Auto Access | 52.9449506 |
| Active commuting | 43.96253048 |
| Social | — |
| 2-parent households | 57.141024 |
| Voting | 22.46888233 |
| Neighborhood | — |
| Alcohol availability | 70.30668549 |
| Park access | 5.10714744 |
| Retail density | 9.341716925 |
| Supermarket access | 5.966893366 |
| Tree canopy | 0.834081868 |
| Housing | — |
| Homeownership | 65.25086616 |
| Housing habitability | 73.96381368 |
| Low-inc homeowner severe housing cost burden | 83.80597973 |
| Low-inc renter severe housing cost burden | 73.93814962 |
| Uncrowded housing | 32.59335301 |
| Health Outcomes | — |
| Insured adults | 31.25882202 |
| Arthritis | 51.7 |
| Asthma ER Admissions | 2.0 |
| High Blood Pressure | 47.4 |
| Cancer (excluding skin) | 71.8 |

| | |
|---|---|
| Asthma | 27.9 |
| Coronary Heart Disease | 61.0 |
| Chronic Obstructive Pulmonary Disease | 27.0 |
| Diagnosed Diabetes | 43.0 |
| Life Expectancy at Birth | 11.6 |
| Cognitively Disabled | 46.5 |
| Physically  Disabled | 15.4 |
| Heart Attack ER Admissions | 2.9 |
| Mental Health Not Good | 26.2 |
| Chronic Kidney Disease | 64.9 |
| Obesity | 33.9 |
| Pedestrian Injuries | 19.6 |
| Physical Health Not Good | 34.4 |
| Stroke | 51.7 |
| Health Risk Behaviors | — |
| Binge Drinking | 38.6 |
| Current Smoker | 28.8 |
| No Leisure Time for Physical Activity | 26.6 |
| Climate Change Exposures | — |
| Wildfire Risk | 0.0 |
| SLR Inundation Area | 0.0 |
| Children | 71.1 |
| Elderly | 30.9 |
| English Speaking | 51.4 |
| Foreign-born | 39.2 |
| Outdoor Workers | 23.0 |
| Climate Change Adaptive Capacity | — |

| | |
|---|---|
| Impervious Surface Cover | 95.6 |
| Traffic Density | 2.6 |
| Traffic Access | 0.0 |
| Other Indices | — |
| Hardship | 74.7 |
| Other Decision Support | — |
| 2016 Voting | 20.3 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 95.0 |
| Healthy Places Index Score for Project Location (b) | 22.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| 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

| Screen | Justification |
|---|---|

| | |
|---|---|
| Land Use | Project information |
| Construction: Construction Phases | Project information |
| Construction: Off-Road Equipment | Project information |
| Construction: Trips and VMT | Project information |

# Appendix B
## **Species Lists**

# United States Department of the Interior

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

In Reply Refer To:
Project Code: 2024-0027236
Project Name: City of Fresno Sidestream Project

December 15, 2023

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

To Whom It May Concern:

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

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

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

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

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

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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

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

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

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

Attachment(s):

- Official Species List

# OFFICIAL SPECIES LIST

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

This species list is provided by:

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

# PROJECT SUMMARY

Project Code: 2024-0027236
Project Name: City of Fresno Sidestream Project
Project Type: Wastewater Facility - Maintenance / Modification
Project Description: The Proposed Project site is zoned public and institutional on land that has been previously disturbed and/or developed for the existing RWRF. Currently a concrete pad sits on the Proposed Project site and the inlet and outlet pipeline alignments would follow along a path that is currently paved.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.70409265,-119.89067988814367,14z

Counties: Fresno County, California

# ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

## MAMMALS

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

## REPTILES

| NAME | STATUS |
|---|---|
| Blunt-nosed Leopard Lizard *Gambelia silus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/625 | Endangered |
| Northwestern Pond Turtle *Actinemys marmorata*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/1111 | Proposed Threatened |

## AMPHIBIANS

| NAME | STATUS |
|---|---|
| California Tiger Salamander *Ambystoma californiense* | Threatened |

Population: U.S.A. (Central CA DPS)
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2076

## INSECTS

| NAME | STATUS |
|---|---|
| Monarch Butterfly *Danaus plexippus* | Candidate |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

## CRUSTACEANS

| NAME | STATUS |
|---|---|
| Vernal Pool Fairy Shrimp *Branchinecta lynchi* | Threatened |

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

## CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

# IPAC USER CONTACT INFORMATION

Agency: Fresno city
Name: Angelica Oregel
Address: 2600 Capitol Ave #200
City: Sacramento
State: CA
Zip: 95816
Email aoregel@esassoc.com
Phone: 7146104325

Common Species Observed in Proposed Project

| Type | Common Name | Scientific Name |
|---|---|---|
| Flora | Red brome | *Bromus rubens* |
| Flora | Common Spikeweed | *Centromadia pungens* |
| Flora | Sacred datura | *Datura wrightii* |
| Flora | Matted sandmat | *Euphorbia serpens Kunth* |
| Flora | Seaside Heliotrope | *Heliotropium curassavicum* |
| Flora | Prickly lettuce | Lactuca serriola |
| Flora | Cheeseweed | *Malva parviflora* |
| Flora | Ornamental rose | *Rosa spp.* |
| Flora | Cleveland sage | *Salvia clevelandii* |
| Fauna | Great egret | *Ardea alba* |
| Fauna | Killdeer | *Charadrius vociferus* |
| Fauna | Common raven | *Corvus corax* |
| Fauna | Northern Mockingbird | *Mimus polyglottos* |
| Fauna | House sparrow | *Passer domesticus* |
| Fauna | Great tailed grackle | *Quiscalus mexicanus* |
| Fauna | Black Phoebe | *Sayornis nigricans* |
| Fauna | European starling | *Sturnus vulgaris* |
| Fauna | Mourning dove | *Zenaida macroura* |
| Fauna | White-crowned sparrow | *Zonotrichia leucophrys* |

NOTES:
Plant nomenclature follows The Jepson Manual: Vascular Plants of California (Second Edition) (Baldwin et al. 2012), as revised by Jepson eFlora (Jepson Flora Project 2024). Common names of plant species are derived from The Jepson Manual or Calflora (2024).

CALIFORNIA NATIVE PLANT SOCIETY

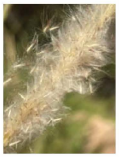
CNPS Rare Plant Inventory

## Search Results

19 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [3611968:3612061:3612071:3611978:3611977:3611967:3611957:3611958:3612051]

| ▲ 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Atriplex cordulata* var. *cordulata* | heartscale | Chenopodiaceae | annual herb | Apr-Oct | None | None | G3T2 | S2 | 1B.2 | Yes | 1988-01-01 |  © 1994 Robert E. Preston, Ph.D. |
| *Atriplex depressa* | brittlescale | Chenopodiaceae | annual herb | Apr-Oct | None | None | G2 | S2 | 1B.2 | Yes | 1994-01-01 |  © 2009 Zoya Akulova |
| *Atriplex minuscula* | lesser saltscale | Chenopodiaceae | annual herb | May-Oct | None | None | G2 | S2 | 1B.1 | Yes | 1994-01-01 |  © 2000 Robert E. Preston, Ph.D. |
| *Atriplex subtilis* | subtle orache | Chenopodiaceae | annual herb | (Apr)Jun-Sep(Oct) | None | None | G1 | S1 | 1B.2 | Yes | 1994-01-01 |  © 2000 Robert E. Preston, Ph.D. |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *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 |
| *Chloropyron palmatum* | palmate-bracted bird's-beak | Orobanchaceae | annual herb (hemiparasitic) | May-Oct | FE | CE | G1 | S1 | 1B.1 | Yes | 1974-01-01 | No Photo Available |
| *Delphinium recurvatum* | recurved larkspur | Ranunculaceae | perennial herb | Mar-Jun | None | None | G2? | S2? | 1B.2 | Yes | 1988-01-01 | No Photo Available |
| *Eriastrum hooveri* | Hoover's eriastrum | Polemoniaceae | annual herb | Mar-Jul | FD | None | G3 | S3 | 4.2 | Yes | 1974-01-01 |  © 2011 Chris Winchell |
| *Goodmania luteola* | golden goodmania | Polygonaceae | annual herb | Apr-Aug | None | None | G3 | S3 | 4.2 | | 1994-01-01 |  © 2007 Steve Matson |
| *Imperata brevifolia* | California satintail | Poaceae | perennial rhizomatous herb | Sep-May | None | None | G3 | S3 | 2B.1 | | 2006-12-26 |  © 2020 Matt C. Berger |
| *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 |
| *Lasthenia ferrisiae* | Ferris' goldfields | Asteraceae | annual herb | Feb-May | None | None | G3 | S3 | 4.2 | Yes | 2001-01-01 |  © 2009 Zoya Akulova |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *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 |
| *Orcuttia pilosa* | hairy Orcutt grass | Poaceae | annual herb | May-Sep | FE | CE | G1 | S1 | 1B.1 | Yes | 1980-01-01 |  © 2003 George W. Hartwell |
| *Puccinellia simplex* | California alkali grass | Poaceae | annual herb | Mar-May | None | None | G2 | S2 | 1B.2 | | 2015-10-15 | 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 |
| *Trichostema ovatum* | San Joaquin bluecurls | Lamiaceae | annual herb | (Apr-Jun)Jul-Oct | None | None | G3 | S3 | 4.2 | Yes | 1974-01-01 | No Photo Available |

Showing 1 to 19 of 19 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 8 November 2023].

# Selected Elements by Common Name

## California Department of Fish and Wildlife

## California Natural Diversity Database

**Query Criteria:** Quad IS (Raisin (3611958) OR Kearney Park (3611968) OR Kerman (3612061) OR Biola (3612071) OR Herndon (3611978) OR Fresno North (3611977) OR Fresno South (3611967) OR Caruthers (3611957) OR Helm (3612051))

City of Fresno Sidestream Treatment Project

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| **alkali-sink goldfields**<br>*Lasthenia chrysantha* | PDAST5L030 | None | None | G2 | S2 | 1B.1 |
| **American badger**<br>*Taxidea taxus* | AMAJF04010 | None | None | G5 | S3 | SSC |
| **American bumble bee**<br>*Bombus pensylvanicus* | IIHYM24260 | None | None | G3G4 | S2 | |
| **Antioch efferian robberfly**<br>*Efferia antiochi* | IIDIP07010 | None | None | G1G2 | S1S2 | |
| **black-crowned night heron**<br>*Nycticorax nycticorax* | ABNGA11010 | None | None | G5 | S4 | |
| **brittlescale**<br>*Atriplex depressa* | PDCHE042L0 | None | None | G2 | S2 | 1B.2 |
| **burrowing owl**<br>*Athene cunicularia* | ABNSB10010 | None | None | G4 | S2 | SSC |
| **California alkali grass**<br>*Puccinellia simplex* | PMPOA53110 | None | None | G2 | S2 | 1B.2 |
| **California glossy snake**<br>*Arizona elegans occidentalis* | ARADB01017 | None | None | G5T2 | S2 | SSC |
| **California jewelflower**<br>*Caulanthus californicus* | PDBRA31010 | Endangered | Endangered | G1 | S1 | 1B.1 |
| **California satintail**<br>*Imperata brevifolia* | PMPOA3D020 | None | None | G3 | S3 | 2B.1 |
| **California tiger salamander - central California DPS**<br>*Ambystoma californiense pop. 1* | AAAAA01181 | Threatened | Threatened | G2G3T3 | S3 | WL |
| **coast horned lizard**<br>*Phrynosoma blainvillii* | ARACF12100 | None | None | G4 | S4 | SSC |
| **Crotch bumble bee**<br>*Bombus crotchii* | IIHYM24480 | None | Candidate Endangered | G2 | S2 | |
| **Fresno kangaroo rat**<br>*Dipodomys nitratoides exilis* | AMAFD03151 | Endangered | Endangered | G3TH | SH | |
| **giant gartersnake**<br>*Thamnophis gigas* | ARADB36150 | Threatened | Threatened | G2 | S2 | |
| **great egret**<br>*Ardea alba* | ABNGA04040 | None | None | G5 | S4 | |
| **hairy Orcutt grass**<br>*Orcuttia pilosa* | PMPOA4G040 | Endangered | Endangered | G1 | S1 | 1B.1 |
| **heartscale**<br>*Atriplex cordulata var. cordulata* | PDCHE040B0 | None | None | G3T2 | S2 | 1B.2 |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| **hoary bat**<br>*Lasiurus cinereus* | AMACC05032 | None | None | G3G4 | S4 | |
| **Hoover's eriastrum**<br>*Eriastrum hooveri* | PDPLM03070 | Delisted | None | G3 | S3 | 4.2 |
| **Hurd's metapogon robberfly**<br>*Metapogon hurdi* | IIDIP08010 | None | None | G1G2 | S1S2 | |
| **lesser saltscale**<br>*Atriplex minuscula* | PDCHE042M0 | None | None | G2 | S2 | 1B.1 |
| **Madera leptosiphon**<br>*Leptosiphon serrulatus* | PDPLM09130 | None | None | G3 | S3 | 1B.2 |
| **molestan blister beetle**<br>*Lytta molesta* | IICOL4C030 | None | None | G2 | S2 | |
| **Northern California legless lizard**<br>*Anniella pulchra* | ARACC01020 | None | None | G3 | S2S3 | SSC |
| **Northern Claypan Vernal Pool**<br>*Northern Claypan Vernal Pool* | CTT44120CA | None | None | G1 | S1.1 | |
| **pallid bat**<br>*Antrozous pallidus* | AMACC10010 | None | None | G4 | S3 | SSC |
| **palmate-bracted bird's-beak**<br>*Chloropyron palmatum* | PDSCR0J0J0 | Endangered | Endangered | G1 | S1 | 1B.1 |
| **recurved larkspur**<br>*Delphinium recurvatum* | PDRAN0B1J0 | None | None | G2? | S2? | 1B.2 |
| **San Joaquin kit fox**<br>*Vulpes macrotis mutica* | AMAJA03041 | Endangered | Threatened | G4T2 | S3 | |
| **San Joaquin pocket mouse**<br>*Perognathus inornatus* | AMAFD01060 | None | None | G2G3 | S2S3 | |
| **San Joaquin Valley Orcutt grass**<br>*Orcuttia inaequalis* | PMPOA4G060 | Threatened | Endangered | G1 | S1 | 1B.1 |
| **Sanford's arrowhead**<br>*Sagittaria sanfordii* | PMALI040Q0 | None | None | G3 | S3 | 1B.2 |
| **snowy egret**<br>*Egretta thula* | ABNGA06030 | None | None | G5 | S4 | |
| **subtle orache**<br>*Atriplex subtilis* | PDCHE042T0 | None | None | G1 | S1 | 1B.2 |
| **succulent owl's-clover**<br>*Castilleja campestris var. succulenta* | PDSCR0D3Z1 | Threatened | Endangered | G4?T2T3 | S2S3 | 1B.2 |
| **Swainson's hawk**<br>*Buteo swainsoni* | ABNKC19070 | None | Threatened | G5 | S4 | |
| **tricolored blackbird**<br>*Agelaius tricolor* | ABPBXB0020 | None | Threatened | G1G2 | S2 | SSC |
| **valley elderberry longhorn beetle**<br>*Desmocerus californicus dimorphus* | IICOL48011 | Threatened | None | G3T3 | S3 | |

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|---|---|---|---|---|---|
| **western mastiff bat** | AMACD02011 | None | None | G4G5T4 | S3S4 | SSC |
| *Eumops perotis californicus* | | | | | | |
| **western spadefoot** | AAABF02020 | None | None | G2G3 | S3S4 | SSC |
| *Spea hammondii* | | | | | | |

**Record Count: 42**

**TABLE B-1**
**SPECIAL-STATUS SPECIES CONSIDERED IN THE PROJECT AREA**

| Common Name<br>*Scientific Name* | Federal Status | State Status | CRPR Status | Habitat Requirements | Identification/ Survey Period | Potential to Occur |
|---|---|---|---|---|---|---|
| **Plants** | | | | | | |
| | | | | | | |
| Heartscale<br>*Atriplex cordulata* var. *cordulata* | NL | NL | 1B.2 | Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy); sometimes saline; 0 to 1,835 feet. | April–October | **Unlikely.** Non-sandy soils grasslands present; no suitable habitat. Last CNDDB record observation from 2009 is extirpated. |
| Brittlescale<br>*Atriplex depressa* | NL | NL | 1B.2 | Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools; 5 to 1,050 feet. | April–October | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| lesser saltscale<br>*Atriplex minuscula* | NL | NL | 1B.1 | Chenopod scrub, Playas, Valley and foothill grassland; 50 to 655 feet. | May–October | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| subtle orache<br>*Atriplex subtilis* | NL | NL | 1B.2 | Valley and foothill grassland; 130 to 330 feet. | (April) June–September (October) | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| succulent owl's-clover<br>*Castilleja campestris* var. *succulenta* | FT | CE | 1B.2 | Vernal pools (often acidic); 165 to 2,460 feet. | (March) April–May | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| California Jewelflower<br>*Caulanthus californicus* | FE | CE | 1B.1 | Chenopod scrub, Pinyon and juniper woodland, Valley and foothill grassland; 200 to 3,280 feet. | February–May | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| palmate-bracted bird's-beak<br>*Chloropyron palmatum* | NL | NL | 1B.1 | Chenopod scrub, Valley and foothill grassland; 15 to 510 feet. | May–October | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| recurved larkspur<br>*Delphinium recurvatum* | NL | NL | 1B.2 | Chenopod scrub, Cismontane woodland, Valley and foothill grassland; 10 to 2,590 feet. | March–June | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| Hoover's eriastrum<br>*Eriastrum hooveri* | FD | NL | 4.2 | Chenopod scrub, Pinyon and juniper woodland, Valley and foothill grassland; 165 to 3,000 feet. | March–July | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |

| Common Name<br>*Scientific Name* | Federal Status | State Status | CRPR Status | Habitat Requirements | Identification/ Survey Period | Potential to Occur |
|---|---|---|---|---|---|---|
| golden goodmania<br>*Goodmania luteola* | NL | NL | 4.2 | Meadows and seeps, Mojavean desert scrub, Playas, Valley and foothill grassland; 65 to 7,220. | April–August | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| California Satintail<br>*Imperata brevifolia* | NL | NL | 2B.1 | Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub; 0 to 3,985 | September–May | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| alkali-sink goldfields<br>*Lasthenia chrysantha* | NL | NL | 1B.1 | Vernal pools; 0 to 655 feet | February–April | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| Ferris' goldfields<br>*Lasthenia ferrisiae* | NL | NL | 4.2 | Vernal pools (alkaline, clay); 65 to 2,295 feet | February–May | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| Madera Leptosiphon<br>*Leptosiphon serrulatus* | NL | NL | 1B.2 | Cismontane woodland, Lower montane coniferous forest; 985 to 4,265 feet. | April–May | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| San Joaquin Valley Orcutt grass<br>*Orcuttia inaequalis* | FT | CE | 1B.1 | Vernal pools; 35 to 2,475 feet. | April–September | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| hairy Orcutt grass<br>*Orcuttia pilosa* | FE | CE | 1B.1 | Vernal pools; 150 to 655 feet. | May–September | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| California alkali grass<br>*Puccinellia simplex* | NL | NL | 1B.2 | Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; sinks; 5 to 3,050 feet. | March–May | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |
| Sanford's arrowhead<br>*Sagittaria sanfordii* | NL | NL | 1B.2 | Marshes and swamps (shallow freshwater); 0 to 2,135 feet. | March–October (November) | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| San Joaquin bluecurls<br>*Trichostema ovatum* | NL | NL | 4.2 | Chenopod scrub, Valley and foothill grassland; 215 to 1,050 feet. | (April–June) July–October | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. |

| Common Name<br>*Scientific Name* | Federal Status | State Status | CRPR Status | Habitat Requirements | Identification/ Survey Period | Potential to Occur |
|---|---|---|---|---|---|---|
| **Wildlife** | | | | | | |
| | | | | | | |
| Crotch bumble bee<br>*Bombus crotchii* | NL | CCE | NL | Occurs almost exclusively in California, in association with grasslands, upland scrub; where habitat elements are present such as small mammal burrows, brush piles, bird nests, dead/hollow trees, perennial bunch grasses, and/or thatched annual grass. | Adults emerge between February through June. Peak emergence is in March. | **Unlikely.** Minimal habitat present. No recorded occurrences within the proposed project site and construction will not impact vegetated areas. The last collection was observed in 1899 but presumed extant. Avoidable with mitigation measures. |
| American bumble bee<br>*Bombus pensylvanicus* | NL | NL | NL | Coastal prairie, Great Basin grassland, Valley & foothill grassland | Fourth week of May to first week of October | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. Last observation was in 1957 in the City of Fresno. |
| valley elderberry longhorn beetle<br>*Desmocerus californicus dimorphus* | FT | NL | NL | Riparian scrub. Only found on elderberry (*Sambucus* spp.); endemic to the Central Valley of California. | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| **Amphibians** | | | | | | |
| California tiger salamander - central California DPS<br>*Ambystoma californiense pop. 1* | FT | CT | NL | Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. Local observations are considered extirpated. |
| Western spadefoot<br>*Spea hammondii* | PT | CSC | NL | Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland in moist soil | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| **Reptiles** | | | | | | |
| Northern California legless lizard<br>*Anniella pulchra* | NL | CSC | NL | Chaparral, Coastal dunes, Coastal scrub | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| California glossy snake<br>*Arizona elegans occidentalis* | NL | CSC | NL | Grasslands, chaparral, rocky washes, arid scrub; loose soil and open areas | February-November | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |
| coast horned lizard<br>*Phrynosoma blainvillii* | NL | CSC | NL | Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland | Year-round | **Unlikely.** Minimal habitat present. Last observation was prior to 1906 in the City of Fresno approximately 8 miles from the proposed project site and is possibly extirpated. |
| Giant garter snake<br>*Thamnophis gigas* | FT | CT | NL | Highly aquatic snake; Marsh & swamp, Riparian scrub, Wetland | Active from mid-March through October | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. |

| Common Name<br>*Scientific Name* | Federal Status | State Status | CRPR Status | Habitat Requirements | Identification/ Survey Period | Potential to Occur |
|---|---|---|---|---|---|---|
| **Birds** | | | | | | |
| tricolored blackbird<br>*Agelaius tricolor* | NL | CT | NL | Freshwater marsh, Marsh & swamp, Swamp, Wetland | Year-round | **Unlikely.** Minimal habitat present. Last observed population is extirpated in the City of Fresno. |
| burrowing owl<br>*Athene cunicularia* | NL | CSC | NL | Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland | Year-round | **Low.** No suitable burrows located within the proposed project site. Nocturnal foraging as a transient possible but avoidable with mitigation measures. |
| great egret<br>*Ardea alba* | NL | NL | NL | Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. Presence restricted to treatment ponds and flyovers. |
| Swainson's hawk<br>*Buteo swainsoni* | NL | CT | NL | Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland | March–October | **Low.** Suitable nesting trees within 0.5 miles. No habitat present within proposed project site. Avoidable with mitigation measures. |
| snowy egret<br>*Egretta thula* | NL | NL | NL | Marsh & swamp, Meadow & seep, Riparian forest, Riparian woodland, Wetland | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. Presence restricted to treatment ponds and flyovers. |
| black-crowned night heron<br>*Nycticorax nycticorax* | NL | NL | NL | Marshes, rivers, streams, lakes, ponds, canals, reservoirs, and wet agricultural fields. Migrate south in southern and coastal portions of their breeding range. | Year-round | **Unlikely.** No habitat present. No recorded occurrences within the proposed project site. Presence restricted to treatment ponds and flyovers. |
| **Mammals** | | | | | | |
| pallid bat<br>*Antrozous pallidus* | NL | CSC | NL | Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland | Year-round | **Low.** Minimal habitat is present and will not be impacted by construction. Avoidable with mitigation measures. |
| American badger<br>*Bombus pensylvanicus* | NL | CSC | NL | Alkali marsh, Alkali playa, Broadleaved upland forest, Chaparral, Chenopod scrub, Freshwater marsh, Meadow & seep, Pavement plain, Salt marsh, Valley & foothill grassland | Year-round | **Low.** No suitable habitat present. No recorded occurrences within the proposed project site. Low likelihood of wildlife corridor but species may appear as a transient species. |

| Common Name<br>*Scientific Name* | Federal Status | State Status | CRPR Status | Habitat Requirements | Identification/ Survey Period | Potential to Occur |
|---|---|---|---|---|---|---|
| Fresno kangaroo rat<br>*Dipodomys nitratoides exilis* | FE | CE | NL | Chenopod scrub | Year-round | **Unlikely.** Minimal habitat present that will not be impacted by construction. Last observed in 1974 more than 5 miles away but presumed extirpated. |
| San Joaquin kit fox<br>*Vulpes macrotis mutica* | FT | CT | NL | Deserts and grasslands in the San Joaquin Valley; Chenopod scrub, Valley & foothill grassland. | Year-round | **Low.** Minimal habitat present. No potential dens observed on the proposed project area. The surrounding facility is fenced, reducing access but may appear as a transient species. Avoidable with mitigation measures. |
| San Joaquin pocket mouse<br>*Perognathus inornatus* | NL | NL | NL | Cismontane woodland, Mojavean desert scrub, Valley & foothill grassland; 1100 and 2000 feet. | Year-round | **Unlikely.** Minimal habitat is present and minimal foraging available. Areas will not be impacted by construction. |
| western mastiff bat<br>*Eumops perotis californicus* | NL | CSC | NL | Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland | Year-round | **Low.** Minimal habitat is present and will not be impacted by construction. Avoidable with mitigation measures. |

KEY TO STATUS CODES:

**Federal**

FE = federal endangered
FT = federal threatened
FC = candidate
PT = proposed threatened
FPD = proposed for delisting
FD = delisted
FSC = federal species of concern (USFWS or NMFS)
FU = Under Review for Listing
EFH = Essential Fish Habitat
NL = not listed

**California**

CE = California State endangered
CT = California State threatened
CR = California State rare
CSC = California species of special concern
CCT = California State threatened candidate
CCE = California State endangered candidate
CFP = California fully protected
NL = not listed

**CNPS**

**Rank Categories:**

1A = Plants presumed extirpated in California and either rare or extinct elsewhere
1B = Plants Rare, Threatened, or Endangered in California and elsewhere
2A = Plants presumed extirpated in California, but more common elsewhere
2B = Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Plants about which more information is needed - A Review List
4 = Plants of limited distribution - A Watch List

**Code Extensions:**

.1 = Seriously endangered in California (over 80% of occurrences threatened/ high degree and immediacy of threat)
.2 = Fairly endangered in California (20–80% occurrences threatened)
.3 = Not very endangered in California (less than 20% of occurrences threatened or no current threats known)

SOURCES: CNPS 2023; USFWS 2023; CDFW 2023

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# Appendix C

## Cultural Resources Memorandum (Confidential)

# Appendix D

## Mitigation Monitoring and Reporting Program

# APPENDIX D

# Mitigation Monitoring and Reporting Program for the City of Fresno Sidestream Treatment Project

## D.1 Requirement

CEQA states that when mitigation measures are required to reduce or avoid a potentially significant impact, a program for monitoring or reporting those measures shall be adopted by the Lead Agency (CEQA Guidelines 15097). The purpose of the mitigation monitoring and reporting program (MMRP) is to ensure timely compliance with required mitigation measures.

## D.2 Mitigation Monitoring and Reporting Program

This MMRP lists all mitigation measures from the City of Fresno (Fresno) Sidestream Treatment Project Initial Study/Mitigated Negative Declaration (IS/MND) found to be necessary to reduce the project's environmental impacts to less than significant levels. The mitigation measures are discussed and listed in the IS/MND; they are duplicated in this MMRP for compliance and monitoring purposes.

**Table D-1** outlines the MMRP for the City of Fresno Sidestream Treatment Project. The table lists all mitigation measures, the agency (s) responsible for monitoring compliance, and when monitoring will occur. The table may be signed and dated by the designated monitor when compliance has been verified.

**TABLE D-1**
**MITIGATION MONITORING AND REPORTING PROGRAM**

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
|---|---|---|---|---|---|
| **Biological Resources** | | | | | |
| 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? | **Mitigation Measure Biological Resources-1: Protect Special-Status Birds and Nesting Birds Regulated by the MBTA and California Fish and Game Code.** For construction activities occurring during the nesting season (February 1 to August 31), a qualified biologist shall conduct a preconstruction pedestrian-level survey for active nests within 500 feet of the Project site and a 0.5 mile buffer windshield survey for SWHA. The survey shall be conducted using binoculars, from within the Project site, no more than seven days before the start of construction.<br>If no active nests are identified during the preconstruction survey, the biologist shall submit a letter report to the City for its records, and no further mitigation is necessary. If construction activities are to begin before February 1, it is assumed that no birds will nest on the Project site during active construction activities and no preconstruction surveys are required. If construction stops for a period of one week or longer at any time during the nesting season, preconstruction surveys shall be conducted before construction resumes.<br>If active nests are found within 500 feet, or the 0.5 mile buffer for SWHA, of the Project site, the City shall wait until the nests are not active to start construction; or, if construction must occur while the nest is active, a qualified biologist shall prepare a plan for avoidance of impacts on active nests. The plan shall identify measures to avoid disturbance of the active nests. Depending on the conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned. Appropriate measures may include restricting construction activities, establishing appropriate buffers based on the species nesting, or having a qualified biologist with stop-work authority monitor the nest for evidence that parental behavior has changed during construction. The biologist would have the authority | City; qualified biologist; and/or construction contractor | City | Prior to project construction | |

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
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| | to stop work in the event that the birds are exhibiting unusual nesting behavior based on the construction activities. If construction activities are halted because of adverse effects on breeding efforts, construction shall not resume until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. | | | | |
| | **Mitigation Measure Biological Resources-2: Pre-Construction Surveys and Occurrence.** Ensure that active dens and burrows of special-status mammal species such as the San Joaquin kit fox and American badger are not disturbed during construction- or decommissioning-related activities. The following measures, derived from the USFWS (2011) *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or during Ground Disturbance*,2 shall be implemented to avoid impacts on active burrows and dens:<br>• Within 30 days of initiation of construction- or decommissioning-related activities, a qualified wildlife biologist shall conduct a preconstruction survey to assess the status of mammal burrows identified within 250 feet of the construction site where access is available.<br>• If occupied dens or burrows are found during the preconstruction survey, a non-disturbance buffer shall be created around the occupied den or burrow until it is determined that they are no longer occupied. Excavation of any potential SJKF dens shall be prohibited during breeding and pup-rearing season. Typical buffers include 250 feet from the den or burrow. The size of these buffer zones and types of construction-related activities restricted in these areas could be further modified during construction in coordination with CDFW and USFWS and shall be based on the existing level of noise and human disturbance on the Project site. | City; qualified biologist; and/or construction contractor | City | Prior to project construction | |

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
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| | • If the preconstruction survey indicates that burrows are unoccupied during the construction- or decommissioning-related period, no further action is required. Burrows within the construction- or decommissioning-related footprint determined to be unoccupied by special-status burrowing wildlife, or that are outside the no-disturbance buffer for occupied dens or burrows, may be excavated.<br>• If a special-status burrowing mammal chooses to occupy a burrow next to an active construction- or decommissioning-related site, then it is generally considered acclimated to construction-related activities and the no disturbance buffer can be reduced.<br>• These provisions shall be implemented prior to (i) initial ground-disturbing activities in any area; (ii) restarting ground-disturbing activities in areas where no work has been occurring for 30 days or more; (iii) prior to ground-disturbing O&M activities; and (iv) starting (or restarting) decommissioning activities by walking transects appropriately spaced to obtain 100 percent visual coverage to identify potential dens, scat, tracks, other sign or individuals. | | | | |
| | **Mitigation Measure Biological Resources-3: Worker Environmental Awareness Program.**<br>Prior to the issuance of grading or building permits and for the duration of construction related activities, all new construction-related workers at the Project site shall attend a Construction Worker Environmental Awareness Program, developed and presented by an approved qualified biologist.<br>The program shall include information on the life history of the San Joaquin kit fox and describe other special-status wildlife species that may occur on-site, including burrowing owl and Swainson's hawk. The program shall also discuss each species' legal protection status, the definition or "take" under the federal and state Endangered Species Acts, measures the site operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of | City; qualified biologist; and/or construction contractor | City | Prior to project construction | |

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
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| | the federal or state Endangered Species Act. An acknowledgement form signed by each worker indicating that environmental training has been completed would be kept on record. Construction- or decommissioning-related workers shall not be permitted to operate equipment within the construction- or decommissioning-related areas unless they have attended the training and are wearing hard hats with the required sticker. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be submitted to the City. | | | | |
| | **Mitigation Measure Biological Resources-4: Preconstruction survey for special-status bats.**<br>Pre-construction field surveys for special status bat species during the breeding season (April 1st to August 31st) shall be conducted by a qualified biologist to determine whether active roosts are present on site, or within 100 feet of the project boundaries. Areas off the Proposed Project site that are inaccessible due to private property restrictions shall be surveyed using binoculars from the nearest vantage point. Field surveys shall be conducted early in the breeding season before any construction activities begin, when bats are establishing maternity roosts but before pregnant females give birth (April through early May). Surveys shall be conducted no more than seven days prior to the onset of construction. If no roosting bats are found, then no further mitigation is required. If suitable habitat and/or bat signs are detected, a biologist shall conduct evening visual emergence surveys from one-half hour prior to sunset to one to two hours after sunset for a minimum of two nights. If roosting bats are found, the disturbance of the maternity roosts shall be avoided by halting construction until the end of the breeding season, or a qualified bat biologist excludes the roosting bats in consultation with the California Department of Fish and Wildlife. If construction activities begin prior to April 1, no pre-construction surveys are required. If at any time during the roosting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction | | | | |

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
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| | resuming. The City shall be provided a copy of the results of any survey conducted and evidence that any required mitigation measures have been implemented prior to initiation of construction or grading activities. | | | | |
| **Cultural Resources** | | | | | |
| Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | **Mitigation Measures Cultural Resources-1: Cultural Resources Awareness Training.** Before any ground-disturbing and/or construction activities, the City shall require an archaeologist meeting or under the supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in project-related ground disturbance prior to such personnel conducting any on-site activities. If a Native American tribe has expressed interest in the project via tribal consultation, they shall be invited to participate in the training program. The training shall outline the general archaeological sensitivity of the area and the procedures to follow if an archaeological resource and/or human remains are inadvertently discovered during project-related activities. | City; qualified archaeologist resource specialist; and/or construction contractor | City | Prior to project construction | |
| | **Mitigation Measure Cultural Resources-2: Inadvertent Discovery of Archaeological Resources.** If pre-contact or historic-era archaeological resources are encountered during project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist, defined as an archaeologist meeting Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology, shall inspect the find within 24 hours of discovery and notify the City of their initial assessment. Pre-contact archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools (e.g., hammerstones, pitted stones). Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. | City; qualified archaeologist resource specialist; and/or construction contractor | City | During project construction | |

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| | If the City determines, based on recommendations from the archaeologist and, if the resource is indigenous and a Native American tribe has expressed interest, a Native American tribe, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5) and/or a tribal cultural resource (as defined in PRC Section 21080.3), the resource shall be avoided, if feasible. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.<br>If avoidance is not feasible, the City shall consult with appropriate Native American tribes (if the resource is pre-contact), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3). | | | | |
| Disturb any human remains, including those interred outside of dedicated cemeteries? | **Mitigation Measure Cultural Resources-3: Inadvertent Discovery of Human Remains.** In the event of discovery or recognition of any human remains during construction activities, all such activities within 100 feet of the find shall cease until the Fresno County Coroner has been contacted to determine that no investigation of the cause of death is required. The NAHC shall be contacted within 24 hours if the Coroner determines that the remains are Native American. The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to USACE for the appropriate means of treating the human remains and any grave goods. | City; qualified cultural resource specialist; and/or construction contractor | City | During project construction | |

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| **Geology and Soils** | | | | | |
| Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | **Mitigation Measure Geology and Soils-1: Train Construction Workers Regarding Paleontological Resources.** A qualified paleontologist, defined as one meeting the Society of Vertebrate Paleontology (SVP) Standards (SVP 2010), shall present a paleontological resources sensitivity training to Project construction workers before the start of ground-disturbing activities (e.g., vegetation removal, pavement removal). The training session shall focus on recognition of the types of paleontological resources that could be encountered within the Project site and the procedures to follow if they are found. The Contractor shall retain documentation demonstrating that construction personnel have attended the training. | City; qualified paleontologist; and/or construction contractor | City | Prior to project construction/ during project construction | |
| | **Mitigation Measure Geology and Soils-2: Implement Appropriate Treatment Measures in Case of a Potential Fossil Discovery.** If construction or other Project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease within a 50-foot radius of the discovery until the qualified paleontologist has assessed the discovery and recommended the appropriate treatment. If the find is deemed significant, it shall be salvaged following the standards of the SVP (SVP 2010) and curated with a certified repository. | City; qualified paleontologist; and/or construction contractor | City | During project construction | |

| Impact | Mitigation Measure | Implementing Responsibility | Monitoring Responsibility | Timing | Monitoring Sign-Off |
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| **Tribal Cultural Resources** | | | | | |
| 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:<br>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) | **Mitigation Measure Cultural Resources-1: Cultural Resources Awareness Training Mitigation Measures.**<br>See Mitigation Measure Cultural Resources-1 | City; qualified archaeologist resource specialist; and/or construction contractor | City | Prior to project construction | |
| | **Mitigation Measure Cultural Resources-2: Inadvertent Discovery of Cultural Resources.**<br>See Mitigation Measure Cultural Resources-2 | City; qualified archaeologist resource specialist; and/or construction contractor | City | During project construction | |
| | **Mitigation Measure Cultural Resources -3: Inadvertent Discovery of Human Remains.**<br>See Mitigation Measure Cultural Resources-3 | City; qualified cultural resource specialist; and/or construction contractor | City | During project construction | |
| 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:<br>A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | **Mitigation Measure Cultural Resources-1: Cultural Resources Awareness Training Mitigation Measures.**<br>See Mitigation Measure Cultural Resources-1 | City; qualified archaeologist resource specialist; and/or construction contractor | City | Prior to project construction | |
| | **Mitigation Measure Cultural Resources-2: Inadvertent Discovery of Cultural Resources.**<br>See Mitigation Measure Cultural Resources-2 | City; qualified archaeologist resource specialist; and/or construction contractor | City | During project construction | |
| | **Mitigation Measure Cultural Resources-3: Inadvertent Discovery of Human Remains.**<br>See Mitigation Measure Cultural Resources-3 | City; qualified cultural resource specialist; and/or construction contractor | City | During project construction | |

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