MAY 2019

Draft

Environmental Impact Report

FOR THE

Fresno Rendering Plant Relocation Project

State Clearinghouse No. 2018111043

City of FRESNO

PREPARED FOR:
City of Fresno
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Fresno, CA 93721
Contact: Jennifer Clark, Director

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LIST OF ABBREVIATIONS

°C	Celsius
°F	Fahrenheit
AB	Assembly Bill
AIA	Air Impact Assessment
ATP	Active Transportation Plan
BAU	Business-as-Usual
BPS	best performance standards
Btu	British thermal unit
CAA	federal Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEQA Guide	*Guide for Assessing and Mitigating Air Quality Impacts*
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalent
CPUC	California Public Utilities Commission
CUP	conditional use permit
CWA	Clean Water Act
dB	decibel
diesel PM	particulate matter exhaust from diesel engines

DOC	California Department of Conservation
DOT	U.S. Department of Transportation
Draft EIR	draft environmental impact report
DWR	California Department of Water Resources
EAP	Energy Action Plan
EIA	U.S. Energy Information Administration
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
ESA	federal Endangered Species Act
FAX	Fresno Area Express
FCRTA	Fresno County Rural Transit Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMFCD	Fresno Metropolitan Flood Control District
FMMP	Farmland Mapping and Monitoring Program
Fresno COG	Fresno Council of Governments
FTA	Federal Transit Administration
GHG	greenhouse gas
GPA	general plan amendment
HAP	hazardous air pollutant
HCM	*Highway Capacity Manual*
HCP	Habitat Conservation Plan
Hz	hertz
IEPR	Integrated Energy Policy Report
IESNA	Illuminating Engineering Society of North America
in/sec	inches per second
IS/MND	Initial Study/Mitigated Negative Declaration
kV	kilovolt
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night level

L_{eq}	equivalent continuous sound level
L_{max}	maximum sound level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MEIR	Master Environmental Impact Report
MMT	million metric tons
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
mPa	micro-Pascals
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MS4	municipal separate storm sewer system
$MTCO_2e$/year	metric tons of carbon dioxide equivalent per year
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
NAAQS	national ambient air quality standards
NFIP	National Flood Insurance Program
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
North Kings GSA	North Kings Groundwater Sustainability Agency
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OPR	California Governor's Office of Planning and Research
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	particulate matter with aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
project	Fresno Rendering Plant Relocation and Expansion Project
RMS	root-mean-square
ROG	reactive organic gases
RPS	renewable portfolio standard

RWQCB	regional water quality control board
RWRF	Fresno-Clovis Regional Wastewater Reclamation Facility
RWRF	Regional Wastewater Reclamation Facility
SAF Plan	State Alternative Fuels Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SGMA	Sustainable Groundwater Management Act of 2014
SIP	State implementation plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SOI	sphere of influence
SO_X	sulfur oxides
SPL	sound pressure level
SUV	sport utility vehicle
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDF	travel demand forecasting
TIS	Transportation Impact Study
TPY	tons per year
TRB	Transportation Research Board
US 50	United States Route 50
USFWS	U.S. Fish and Wildlife Service
VdB	vibration decibels
VMT	vehicle miles traveled
WQO	Water Quality Objective
ZEV	zero-emission vehicle

1 INTRODUCTION

This draft environmental impact report (Draft EIR) evaluates the environmental impacts of the proposed Fresno Rendering Plant Relocation Project (project). This Draft EIR has been prepared under the direction of the City of Fresno (City) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq.).

This Draft EIR has been prepared by the City to evaluate potential environmental effects resulting from proposed relocation and expansion of the existing rendering facility located on Belgravia Road between Church Avenue and E Street. The project would relocate the facility from its current location, just southwest of downtown, to a 40-acre parcel near the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) and expand its permitted processing limits from 850,000 pounds per day to 2 million pounds per day or more but would be limited to a permitted maximum of 10 million pounds per week rather than a daily maximum. The project site would occupy 20 acres of the 40-acre property. The project would require a general plan amendment (GPA) to change the General Plan land use designation of the 40-acre parcel from Public Facility to Heavy Industrial, a rezone of the property from Public and Institutional (PI) to Industrial-Heavy (IH), a conditional use permit (CUP) to operate within the IH zone, and a Development Agreement. For further information, see Chapter 3, "Project Description."

1.1 PURPOSE AND INTENDED USES OF THIS DRAFT EIR

According to the State CEQA Guidelines Section 15064(f)(1), preparation of an EIR is required whenever a lead agency determines, based on substantial evidence, that a project may result in a significant adverse environmental impact. An EIR is an informational document used to inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

This Draft EIR has been prepared to meet the requirements of a project EIR as defined by Section 15161 of the State CEQA Guidelines. A project EIR focuses on the changes in the physical environment that would result from the implementation of a project, including its planning, construction, and operation. The City's intention in preparing a project EIR is that no further environmental analysis would be required for additional regulatory approvals following approval of the project, absent conditions requiring a subsequent EIR, a supplement to the EIR, or an addendum (State CEQA Guidelines Sections 15162–15164).

1.2 SCOPE OF THIS DRAFT EIR

This Draft EIR includes an evaluation of the following environmental issue areas as well as other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant unavoidable impacts, alternatives):

- Aesthetics,
- Agricultural Resources,
- Air Quality,
- Archaeological, Historical, and Tribal Cultural Resources,
- Biological Resources,
- Greenhouse Gas Emissions and Climate Change,
- Hazards and Hazardous Materials,

- Hydrology and Water Quality,
- Land Use and Planning,
- Noise,
- Transportation/Traffic, and
- Energy.

In accordance with CEQA and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when such effects are not considered potentially significant (PRC Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine which impacts would be potentially significant was derived from review of the project; review of applicable planning documents and CEQA documentation; field work; feedback from public and agency consultation; comments received during a public scoping meeting; and comments received on the notice of preparation (NOP) (see Appendix A).

Accordingly, these resources are not addressed further in this Draft EIR but are identified below with a brief explanation as to why impacts in each of these resource areas would not be significant, as required by CEQA.

- Forestry Resources
- Geology and Soils
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

FORESTRY RESOURCES

There is no forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned for Timberland Production (as defined by Government Code Section 51104[g]) on or near the project site. Thus, there would be no zoning conflicts with forest land, and relocation of the rendering plant would not result in loss or conversion of forest land to non-forest use. Therefore, the project would not result in any impacts related to forestry resources, and this issue is not discussed further in this Draft EIR.

GEOLOGY AND SOILS

There are no active faults located in the region, and the project site is not located within an Alquist-Priolo active fault zone. All buildings would be constructed in compliance with California Building Code (CBC) Title 24, which identifies specific design requirements to reduce damage resulting from strong seismic ground shaking, ground failure, landslide, soil erosion, and expansive soils. The project site is generally flat, and all disturbed areas would be green areas with landscaping consistent with the City code or would be paved to reduce the potential for erosion. Prior to construction, the project applicant would be required to test the site soils to determine the presence of expansive soils in accordance with the CBC Title 24. If expansive soils are suspected or found, the project applicant would be required to provide design and construction solutions in accordance with the CBC to reduce risks associated with unstable and expansive soils. Because existing CBC Title 24 requirements are in place to minimize risks of seismic damage, erosion, and unstable soils, no significant impacts related to geology and soils would occur, and this issue is not discussed further in this Draft EIR. Potential impacts on paleontological resources are discussed in Section 4.5, "Archaeological, Historical, and Tribal Cultural Resources."

MINERAL RESOURCES

The principal area for mineral resources in the city is located in and immediately adjacent to the San Joaquin River Corridor (City of Fresno 2014b:8-1). The project site is located more than 10 miles south from the nearest point of the San Joaquin River. According to the California Department of Conservation Mineral Resource Zone Map, the project

site is not within a mapped mineral resource zone, and there are no mining activities within or near the project site. Therefore, the project would not have any significant impacts related to mineral resources, and this issue is not discussed further in this Draft EIR.

POPULATION AND HOUSING

The project would not remove any existing housing and would not displace any people or housing. The project site is currently designated as Public Facility and would be redesignated to Heavy Industrial to accommodate the proposed relocated rendering facility. The project does not include residential uses, nor does it include elements that would directly or indirectly affect population or housing (e.g., expand service infrastructure). Therefore, the project would not result in direct population growth or any substantial indirect population growth. Construction would be short-term and would not result in construction employees relocating to the project vicinity due to this short duration and small scale. The project would provide approximately 23 new employment positions in addition to the current employees, bringing the total to 70 employees. Data shows that after the year 2000, the number of employees residing in Fresno County exceeded the number of jobs available. Therefore, employees who lived in Fresno County tended to travel outside the County to their place of employment. New employees would most likely reside locally (within the city or county). For these reasons, the project would not have significant impacts related to population and housing, and the issue is not discussed further in this Draft EIR.

PUBLIC SERVICES

All site plans and building designs would be reviewed by the City Fire Department to verify that the project would comply with City fire code and other standards; therefore, the project would include appropriately designed fire suppression facilities (i.e., sprinklers, extinguishers, fire hydrants) and adequate emergency access. In compliance with Section 12-4.901 of the Fresno Municipal Code, development impact fees are collected from new development for the construction of capital fire facilities. The project would be required to deposit a Fire Service Fee with the City prior to occupancy of the facility. Payment of the required fees would provide funding to supplement fire protection staff and equipment to improve response times and would minimize impacts to fire protection services.

Similarly, in accordance with Section 12-4.801 of the Fresno Municipal Code, the project would be required to deposit a Police Service Fee with the City prior to occupancy of the facility. Payment of the required fees would provide funding to supplement police staff and equipment and reduce impacts to police protection services.

The project includes moving an existing industrial use to a part of the city that includes fewer sensitive uses. The project would not include any additional housing and, although the project includes an expansion of the facility's operation, the addition of 23 employees would not result in population growth that would substantially increase demand for public services, such as schools and parks. For these reasons, the project would not have significant impacts to public services, and these issues are not discussed further in this Draft EIR.

RECREATION

The project would not include any additional housing and, although the project includes an expansion of the facility's operation, the addition of 23 employees would likely be drawn from the local population and would not result in population growth that would increase demand for parks. Because the project is non-residential, it is not required to provide recreation facilities. Due to the project's location, regular use of city and county parks by Darling employees is not expected. Therefore, the project would not substantially increase demand for or use of existing parks and would not result in significant recreation impacts. This issue is not discussed further.

UTILITIES AND SERVICE SYSTEMS

Wastewater

In compliance with the Regional Water Quality Control Board's Waste Discharge Requirement Order for the Regional Facility, Order No 5-01-254 established via Resolution No. R5-2002-0254-A01, all wastewater generated at the rendering facility (a portion of which would be stormwater) would pass through a primary treatment system before being discharged to the City's wastewater collection and treatment system. This type of pretreatment is capable of removing gross solids and organic matter, in addition to fat, oil, and grease. Certain levels of nutrients and soluble organic matter would be discharged to the City's wastewater collection and treatment system and would typically contain ammonia and BOD_5; however, the discharge would be compliant with the City's sewer ordinance. Treated non-potable water from the RWRF would be used for irrigation. The project would generate up to 350,000 gallons/day (0.35 million gallons per day [MGD]) wastewater flow, which is up to twice the current level of wastewater generation of the existing rendering facility. According to the General Plan Master Environmental Impact Report (MEIR), the RWRF has a rated wastewater treatment capacity of 80 MGD and a permitted dry weather flow capacity of 94 MGD. The RWRF currently has an average dry weather flow of 68 MGD (City of Fresno 2014b:5.5-18). Therefore, the RWRF operates below capacity and currently has capacity to treat the project's 0.35 MGD. It should be noted that the wastewater generated by growth projected in the General Plan would substantially exceed the RWRF's wastewater treatment capacity by 2025. The General Plan includes policies and the MEIR includes mitigation measures that require increase in wastewater treatment capacity prior to approving development after year 2025. The MEIR concludes that implementation of these policies and mitigation measures would reduce the impact (both individually and cumulatively) to a less-than-significant level.

Stormwater Drainage

The proposed rendering plant would manage stormwater quality through a stormwater pollution prevention plan in accordance with the requirements of Section B of the National Pollutant Discharge Elimination System General Permit No. CAS000001 for the discharge of stormwater associated with industrial activities, excluding construction activities. The project would add approximately 10 acres of impervious surface to the site. Stormwater from these areas would flow into on-site detention basins, which would function as bio filters to remove sediment from stormwater. The project would not drain into a formal municipal drainage system; therefore, the project would have no impact on existing storm drainage facilities.

Water Supply

The estimated demand for potable water would be 75,000 gallons per day, which would be supplied by a proposed off-site well located just west of the project site. The City would conduct groundwater quality testing during drilling and, if any regulated groundwater constituents exceed maximum contaminant levels, would install well-head treatment and establish a regular monitoring program. The project would also use recycled water from the RWRF for appropriate uses, as needed. The project would result in a small increase (6.5 percent) in water demand; however, the existing rendering plant is served by municipal water, which is 75 percent groundwater. The relocated rendering plant would not use municipal water and, therefore, would decrease the demand on the City's municipal water supply.

Solid Waste

The project would be required to comply with all federal, State, and local management and reduction regulations related to the disposal of solid waste. Waste from the project site would be disposed at American Avenue Landfill, which is projected to have adequate capacity through the year 2031 (City of Fresno 2019). Relocation of the rendering facility and a modest increase in solid waste generation would not cause daily or annual capacity of the landfill to be exceeded, nor would the volume be substantial as compared to remaining capacity. Although the rendering plant involves operational expansion, it would not generate substantial solid waste above current solid waste generation levels because, while there may be a slight increase in solid waste, the increased efficiency and new technology being incorporated into the facility allows for new uses for product residuals. Therefore, the project would not generate solid waste in excess of State or local standards, the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

For these reasons, the project would not have any significant impacts related to utilities and service systems, and these issues are not discussed further in this Draft EIR.

WILDFIRE

The project site is not in or near the State Responsibility Area designated by California Department of Forestry and Fire Protection. In addition, the City of Fresno does not contain any land classified as a "Very High Fire Hazard Severity Zone." Therefore, wildfire issues associated with lands under these designations are not discussed further in this Draft EIR. The potential for the project to expose people or structures to a significant risk of loss, injury, or death involving wildland fires is discussed in Section 4.8, "Hazards and Hazardous Materials."

1.3 AGENCY ROLES AND RESPONSIBILITIES

1.3.1 LEAD AGENCY

The City of Fresno is the lead agency responsible for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. After the EIR public review process is complete, the City will determine whether to certify the EIR (see State CEQA Guidelines Section 15090) and approve the project.

1.3.2 RESPONSIBLE AND TRUSTEE AGENCIES

Responsible agencies are public agencies, other than the lead agency, that have discretionary-approval responsibility for reviewing, carrying out, or approving elements of a project. Responsible agencies should participate in the lead agency's CEQA process, review the lead agency's CEQA document, and use the document when making a decision on project elements. For example, the County of Fresno will use this EIR for discretionary actions such as roadway encroachment permits. Agencies that may have responsibility for, or jurisdiction over, the implementation of elements of the project include the following:

- California State Water Resources Control Board (SWRCB),
- Central Valley Regional Water Quality Control Board (RWQCB),
- San Joaquin Valley Air Pollution Control District (SJVAPCD), and
- County of Fresno.

A trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The only trustee agency that has jurisdiction over resources potentially affected by the project is:

- California Department of Fish and Wildlife (CDFW).

1.3.3 REQUIRED PERMITS AND APPROVALS

The following list identifies permits and other approval actions likely to be required before implementation of individual elements of the project.

- Obtain coverage under the State General Stormwater Permit - SWRCB;
- National Pollutant Discharge Elimination System Permit and Wastewater Discharge Permit – Central Valley RWQCB;
- Issuance of an Authority to Construct Permit - SJVAPCD; and
- Issuance of CUP and Disposition Agreement and Development Agreement – City of Fresno.

1.4 PUBLIC REVIEW PROCESS

The NOP was distributed on November 20, 2018, to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. The NOP was available at the Fresno County Public Library at 2420 Mariposa Street, Fresno and at the City of Fresno's office at 2600 Fresno Street, Fresno. A public scoping meeting was held on November 28, 2018, 2018, from 6:30 p.m. to 8:00 p.m. at Sunset Elementary School, 1755 South Crystal Avenue.

The purpose of the NOP was to provide notification that an EIR for the Rendering Plant Relocation and Expansion Project was being prepared and to solicit input on the scope and content of the document. The NOP and responses to the NOP are included in Appendix A of this Draft EIR.

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, comments from the general public as well as organizations and agencies may be submitted to the lead agency. Upon completion of the public review and comment period, a Final EIR (Final EIR) will be prepared that will include both written and oral comments on the Draft EIR received during the public review period, responses to those comments, and any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR will comprise the EIR for the project.

Before adopting the proposed project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

1.5 DRAFT EIR ORGANIZATION

This Draft EIR is organized into chapters, as identified and briefly described below. Chapters are further divided into sections (e.g., Chapter 4, "Environmental Impacts and Mitigation Measures" and Section 4.11, "Noise"):

- Chapter 1, "Introduction": This chapter provides a description of the lead and responsible agencies, the legal authority and purpose for the document, and the public review process.
- Chapter 2, "Executive Summary": This chapter introduces the Rendering Plant Relocation and Expansion Project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and lists significant impacts and mitigation measures to reduce significant impacts to less-than-significant levels.
- Chapter 3, "Project Description": This chapter describes the location, background, and goals and objectives for the project, and describes the project elements in detail.
- Chapter 4, "Environmental Impacts and Mitigation Measures": The sections within this chapter evaluate the expected environmental impacts generated by the project, arranged by subject area (e.g., Land Use, Hydrology and Water Quality). Within each subsection of Chapter 4, the regulatory background, existing conditions, analysis methodology, and thresholds of significance are described. The anticipated changes to the existing conditions after development of the project are then evaluated for each subject area. For any significant or potentially significant impact that would result from project implementation, mitigation measures are presented and the level of impact significance after mitigation is identified. Environmental impacts are numbered sequentially within each section (e.g., Impact 4.2-1, Impact 4.2-2). Any required mitigation measures are numbered to correspond to the impact numbering; therefore, the mitigation measure for Impact 4.2-2 would be Mitigation Measure 4.2-2.
- Chapter 5, "Cumulative Impacts": This chapter provides information required by CEQA regarding cumulative impacts that would result from implementation of the Rendering Plant Relocation and Expansion Project together with other past, present, and probable future projects.
- Chapter 6, "Alternatives": This chapter provides a discussion of alternatives to the project, including the No Project Alternative; alternatives considered but removed from further consideration; and the environmentally superior alternative.

- Chapter 7, "Other CEQA Sections": This chapter evaluates growth-inducing impacts and irreversible and irretrievable commitment of resources, and discloses any significant and unavoidable adverse impacts.
- Chapter 8, "Report Preparers": This chapter identifies the preparers of the document.
- Chapter 9, "References": This chapter identifies the organizations and persons consulted during preparation of this Draft EIR and the documents and individuals used as sources for the analysis.

1.6 STANDARD TERMINOLOGY

This Draft EIR uses the following standard terminology:

- "No impact" means no change from existing conditions (no mitigation is needed).
- "Less-than-significant impact" means no substantial adverse change in the physical environment (no mitigation is needed).
- "Potentially significant impact" means an impact that might cause a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant).
- "Significant impact" means an impact that would cause a substantial adverse change in the physical environment (mitigation is recommended).
- "Significant and unavoidable impact" means an impact that would cause a substantial adverse change in the physical environment and that cannot be avoided, even with the implementation of all feasible mitigation.

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2 EXECUTIVE SUMMARY

2.1 INTRODUCTION

This summary is provided in accordance with California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15123. As stated in Section 15123(a), "an EIR [environmental impact report] shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the guidelines, this chapter includes (1) a summary description of the Fresno Rendering Plant Relocation Project (project), (2) a synopsis of environmental impacts and recommended mitigation measures, (3) identification of the alternatives evaluated and of the environmentally superior alternative, and (4) a discussion of the areas of controversy associated with the project.

2.2 SUMMARY DESCRIPTION OF THE PROJECT

2.2.1 Project Location

The project site is located within the city limits, but not within the city proper; the site is located just east of the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) within a large island of incorporated, City-owned property south of West Jensen Avenue. The property consists of 40 acres of land used currently used for agriculture, and 20 acres of this property would be developed for the rendering plant. This land is located within a 3,200-acre area of incorporated land and is separated from the rest of the city by approximately 2 miles.

2.2.2 Background and Need for the Project

The existing Darling Ingredients Inc. facility is located on a 5.22-acre parcel on Belgravia Road between Church Avenue and E Street in the southwest area of the city. The facility was constructed and began operation in 1956 as a slaughterhouse and beef packing company, with limited rendering (i.e., processing of animal products for reuse) operations. Rendering gradually expanded, packing operations phased out and the rendering plant site was annexed to the city in 1971. Over the last 60 years, non-industrial urban uses were developed in the surrounding area such that residential neighborhoods are now within 0.25-mile of the rendering plant, with homes as close as 800 feet from the rendering plant structures.

The existing Darling facility is a food processing byproduct conversion operation that collects and processes raw material (primarily beef fat, bone, and offal) into proteins and fats that can be beneficially used as ingredients in food, fertilizer, feed, and fuel. The conversion process has the potential to generate odor which is managed through an odor abatement system. Evaporated moisture from the conversion process is condensed, pretreated, and discharged to the RWRF. Air emissions from the process, including but not limited to the boiler system and odor abatement system, are regulated and permitted by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The facility currently has 38 employees and is permitted to process up to 850,000 pounds of material per day in accordance with a SJVAPCD Permit. The facility's major sources of raw materials include Cargill, Harris Ranch Beef, and other sources. Most raw materials are shipped from within 200 miles of the existing facility.

The City is considering the relocation of this heavy industrial facility away from the residential neighborhoods that have been developed near the existing facility subsequent to its establishment.

2.2.3 Project Objectives

The City of Fresno is considering a general plan amendment (GPA) and rezone of approximately 40 acres of land near the RWRF to accommodate relocation of the Darling facility from its current location on Belgravia Ave just southwest of downtown. Twenty acres of this 40-acre property would be developed for the rendering plant, and the rendering plant would expand its current permitted processing limits from 850,000 pounds per day to 2 million pounds per day or more but would be limited to a permitted maximum of 10 million pounds per week rather than a daily maximum. The project would require a General Plan Amendment (GPA) to change the General Plan land use designation of land from Public Facility to Heavy Industrial, and a rezone of the same property from PI to Industrial-Heavy. The proposed Darling facility would also require a conditional use permit to operate within the IH zone, and a Disposition Agreement and Development Agreement (DADA) to facilitate construction of the proposed new rendering facility consistent with the GPA and rezone and consistent with the features of the project described in this Draft EIR.

2.2.4 Characteristics of the Project

The project would include a total of four buildings—a conversion facility, a truck shop, a maintenance shop, and an office building—with a total floor area of approximately 40,000 square feet (sf), which is approximately 12,200 sf larger than the existing facility.

Excluding equipment, typical building height would be approximately 28 feet with a maximum building height of 45 feet. The tallest equipment would include two new 60-foot protein storage silos. The conversion facility would be a concrete pre-cast building, and the other three buildings would include metal, brick, or block veneer.

The industrial activities related to the project would be similar to those of the existing Darling facility and would include an increase in processing capacity. Raw materials to be converted would be collected and delivered to the facility for processing 6 to 7 days per week. Processing would typically begin on Monday and run through Saturday or as needed Sunday. Approximately 60 to 70 full-time employees would work at the facility (23 new positions would be created as a result of the operational expansion). The facility would operate in three shifts with three production shifts and one maintenance shift.

2.3 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

2.3.1 Project-Specific Impacts

This EIR has been prepared pursuant to the CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 1500, et seq.) to evaluate the physical environmental effects of the proposed Fresno Rendering Plant Relocation Project. The City of Fresno (City) is the lead agency for the project. The City has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met.

Table 2-1, presented at the end of this chapter, provides a summary of the environmental impacts for the proposed project. The table provides the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

2.3.2 Significant-and-Unavoidable Impacts

Sections 4.1 through 4.13 of this Draft EIR describe the potential environmental impacts of the project and recommend various mitigation measures to reduce impacts, to the extent feasible. Chapter 5, "Cumulative Impacts," determines whether the incremental effects of this project are significant when viewed in connection with the effects

of past projects, other current projects, and probable future projects. The following impact was identified as significant and unavoidable under project and cumulative conditions.

- Agricultural Resources Impact 4.3-1: The project would convert Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. As part of the General Plan Update process, the City of Fresno General Plan Master Environmental Impact Report (MEIR) evaluated the potential for future development associated with the General Plan to result in impacts related to conversion of Important Farmland to non-agricultural use. The General Plan identified policies to reduce potential impacts to farmland conversion outside the city limits. Although the project site is on city-owned land and is within the city limits, it is not within the city proper and is surrounded primarily by agricultural uses. Because the project site is outside the city proper in an area dominated by farmland and agricultural operations, and the project would result in a permanent conversion of Important Farmland. This impact would be significant. Mitigation Measure 4.3-1: Farmland Preservation would require that the applicant or City provide in-kind or similar resource value protection for land similar to the project site at a ratio of 1:1. The City will identify the type of easement to be used for mitigation and will determine the implementing agent for this mitigation. While implementation of Mitigation Measure 4.3-1 could reduce the impact on Important Farmland by preserving forever a similar acreage and type of farmland, once farmland is removed through development, it is irretrievably lost to future generations. Therefore, the impact would remain significant and unavoidable.
- Cumulative Impacts to Intersection Operations: The study intersections of Jensen Avenue/Cornelia Avenue and Jensen Avenue/Brawley Avenue are forecast to operate at unacceptable levels (LOS E or F) during the p.m. peak-hour under Cumulative and Cumulative Plus Project conditions. Furthermore, the addition of project generated trips would result in an increase in average delay of more than 5 seconds for individual movements at these unsignalized study intersections currently operating at an unacceptable level. Thus, the project would result in a cumulatively considerable contribution to a significant impact. While Mitigation Measures 5-1a and 5-1b would result in fair share payment toward improvements that would reduce the impact at these intersections to a less-than-significant level, because these intersections have not been identified for any planned or programmed future improvements and these intersections are outside of the City of Fresno's jurisdictional control, it cannot be guaranteed that these improvements would be implemented. Therefore, the project would have a potentially substantial contribution to a significant cumulative impact.

2.4 ALTERNATIVES TO THE PROPOSED PROJECT

The following provides brief descriptions of the alternatives evaluated in this Draft EIR. Table 2-2 presents a comparison of the environmental impacts between the alternatives and the proposed project.

- Alternative 1: No Project Alternative assumes no demolition of the existing structure nor construction of a new building. The project site would remain in its current condition.
- Alternative 2: Off-Site Alternative would involve relocating the rendering plant to an industrial parcel located near W. Nielsen Avenue and N. Hughes Avenue.
- Alternative 3: No Expansion Alternative would involve relocating the rendering plant to the proposed project site, but would not include expansion of facility operations.

2.4.1 Environmentally-Superior Alternative

Because the No Project Alternative would avoid all significant impacts resulting from construction and operation of the Fresno Rendering Plant Relocation Project analyzed in Chapters 4 and 5, it is the environmentally superior alternative. However, the No Project Alternative would not meet the objectives the project as presented above.

When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) require selection of an environmentally superior alternative from among the other action alternatives evaluated. As illustrated in Table 2-2, Alternative 2: Off-Site Alternative would be the environmentally superior action

alternative because it would avoid the significant and unavoidable impact on Important Farmland and reduce potentially significant impacts associated with biological resources associated with the project. However, this alternative would result in greater impacts on aesthetics, air quality, GHG emissions, noise, and traffic. In addition, Alternative 2 would not achieve the primary objective of the project to move the rendering plant farther from sensitive receptors.

Table 2-2 Summary of Environmental Effects of the Alternatives Relative to the Proposed Fresno Rendering Plant Relocation Project

Environmental Topic	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Off-Site Alternative	Alternative 3: No Expansion Alternative
Aesthetics	Less than significant (with mitigation)	Less	Greater	Similar
Agricultural Resources	Significant and unavoidable	Less, would avoid SU	Less, would avoid SU	Similar
Air Quality	Less than significant (with mitigation)	Similar	Greater	Less
Archaeological, Historical, and Tribal Cultural Resources	Less than significant (with mitigation)	Less	Similar	Similar
Biological Resources	Less than significant (with mitigation)	Less	Less	Similar
Greenhouse Gas Emissions and Climate Change	Less than significant	Less	Greater	Less
Hazards and Hazardous Materials	Less than significant (with mitigation)	Less	Similar	Similar
Hydrology and Water Quality	Less than significant (with mitigation)	Less	Similar	Less
Land Use and Planning	Less than significant	Similar	Similar	Similar
Noise	Less than significant (with mitigation)	Greater	Greater	Less
Transportation/Traffic	Less than significant	Less	Greater	Less
Energy	Less than significant	Less	Similar	Less
Cumulative	Significant and Unavoidable	Less	Less	Similar

2.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The Notice of Preparation (NOP) was distributed on November 20, 2018, to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. A public scoping meeting was held on November 28, 2018. The purpose of the NOP and the scoping meeting was to provide notification that an EIR for was being prepared for the project and to solicit input on the scope and content of the environmental document. The NOP and responses to the NOP are included in Appendix A of this Draft EIR. Key concerns that were expressed during the scoping process included the following:

- Odors associated with haul trucks, and
- Safety of public roadways.

These issues are addressed in Section 4.4, "Air Quality," and Section 4.12, "Transportation/Traffic," of this Draft EIR.

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Aesthetics			
Impact 4.2-1: Degrade Existing Visual Character or Quality The project would substantially alter the visual character of the project site from active farmland to industrial development; however, there are other industrial facilities in the vicinity and the visual character of the project site is not unique or distinctive relative to the visual character of the surrounding region. Further, the project would include landscaping features which would soften the overall appearance of the industrial facility. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.2-2: Create a Substantial New Source of Light and/or Glare Although not considered a major source of daytime glare, the project would add metal and other reflective surfaces associated with the rendering facilities and parked cars in the parking lot. In addition, the project would include nighttime lighting that could result in skyglow and light pollution. This would be a potentially significant impact.	PS	**Mitigation Measure 4.2-2: Prepare a Lighting Plan** A detailed lighting plan shall be developed by the applicant that demonstrates that all exterior lighting is directed downward and includes full shielding to minimize light pollution and to minimize light spillage onto adjacent properties. All lighting shall be consistent with International Dark Sky Standards (IDSS) and Illuminating Engineering Society of North America (IESNA) criteria for luminaries. The City's Development and Resource Management will review and approve the lighting plan before issuance of building permits.	LTS
Agricultural Resources			
Impact 4.3-1: Convert agricultural uses, including lands designated as Important Farmlands, to non-agricultural use or involve changes in the existing environment that could result in conversion of Important Farmland to non-agricultural use The project would convert Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. As part of the General Plan Update process, the City of Fresno General Plan Master Environmental Impact Report (MEIR) evaluated the potential for future development associated with the General Plan to result in impacts related to conversion of Important Farmland to non-agricultural use. The General Plan identified policies to reduce potential impacts to farmland conversion outside the city limits. Although the project site is on city-owned land and is within the city limits, it is not within the city proper and is surrounded primarily by agricultural uses. Because the project site is outside the city proper in an area dominated by farmland and agricultural operations, and the project would result in a permanent conversion of Important Farmland. This impact would be significant.	S	**Mitigation Measure 4.3-1: Farmland Preservation** Consistent with the Fresno General Plan Policy RC-9-c the applicant or City shall provide in-kind or similar resource value protection for land similar to the project site at a ratio of 1:1. This protection may consist of the establishment of farmland easements, or other similar mechanism and shall be implemented before issuance of the first grading permit for development. The City will identify the type of easement to be used for mitigation and will determine the implementing agent for this mitigation.	SU

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4.3-2: Result in Other Loss or Conversion of Existing Agricultural Uses Adjacent lands support active agriculture and perceived conflicts may result when moving sensitive land uses near agriculture. However, the rendering plant is an industrial facility that is not considered a sensitive receptor. Therefore, the project would not result in changes in the existing environment that could result in the conversion of other farmland to non-agricultural uses. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Air Quality			
Impact 4.4-1: Short-Term Construction Emissions of Criteria Air Pollutants and Precursors (CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$) Construction-related activities would result in project-generated emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ (a subset of PM_{10}) from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Construction emissions of criteria air pollutants would not exceed any SJVAPCD mass emissions thresholds. Further, the project includes fugitive dust reduction measures consistent with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibition) and therefore would not result in substantial dust emissions. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.4-2: Long-Term Operational Emissions of Criteria Air Pollutants and Precursors (ROG, SO_X, NO_X, CO, PM_{10} and $PM_{2.5}$) The project would include 23 additional employees and 40 additional daily delivery trips, resulting in an increase in operational mobile-emissions related to implementation of the proposed project. The project would also result in additional stationary sources. These sources would be subject to the SJVAPCD permitting process that ensures emissions would not exceed SJVAPCD permit levels for criteria air pollutants and precursors. Therefore, implementation of the project would not result in long-term operational emissions of criteria air pollutants (ROG, NO_X, SO_X, CO, PM_{10}, or $PM_{2.5}$) that exceed SJVAPCD's thresholds of significance, violate an air quality standard, or contribute substantially to an existing or projected air quality violation. This would be a less-than-significant impact.	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4.4-3: Mobile Source CO Concentrations Construction activities would result in some vehicle trips associated with construction workers, material hauling, and supply deliveries. However, estimated maximum construction activities would result in minimal CO emissions. Operation of the proposed project would not result in an increase in vehicle trips on the local roadway network, nor would SJVAPCD-recommended screening criteria be exceeded for CO. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.4-4: Exposure of Sensitive Receptors to TACs Short-term construction activities would result in emissions of diesel PM. However, construction activities would vary over the entire construction period. Modeled worst-case construction emissions would be substantially below SJVAPCD-recommended threshold. Construction activities would take place relatively far away from offsite sensitive receptors (i.e., 2,440 feet away). Therefore, given the dispersive properties of diesel PM, concentrations would be minimal at this distance. Operation of the project would result in a new natural gas-powered boiler and operation of diesel delivery trucks. Levels of TACs from project-related construction would not result in a substantial increase in health risk exposure at offsite sensitive receptors, increases in cancer risk that are greater than 20 in 1 million, or a hazard index greater than one, however, operation of the new boiler could result in a substantial increase in health risk exposure at offsite sensitive receptors. This impact would be significant.	S	**Mitigation Measure 4.4-4: Apply best available control technology for New Stationary Sources** The project proponent shall install a boiler with a catalyst designed to reduce TAC emissions, or other equally effective control technology based on the source type. For example, an oxidation catalyst or a Non-Selective Catalytic Reduction (NSCR) catalyst can reduce TAC emissions by 76 percent (SJVAPCD 2016).	LTS
Impact 4.4-5: Exposure of Sensitive Receptors to Odors The project would introduce new odor sources into the area from various stages of raw material handling and processing operations associated with the rendering facility. In accordance with SJVAPCD permitting requirements, stationary sources are required to maintain and implement odor control technologies. However, the City of Fresno General Plan requires projects that could result in exposure of sensitive receptors to odors to prepare an odor management plan. Therefore, without the preparation of such a plan, this impact would be significant.	S	**Mitigation Measure 4.4-5: Prepare an Odor Control Plan** The following odor management conditions will be applicable to the facility and will be consistent, and not in conflict with, the conditions of the sites Authority to Construct (ATC) or Permit to Operate (PTO) issued by the San Joaquin Air Pollution Control District (SJVAPCD). The project proponent shall prepare an Odor Control Plan (OCP). The OCP will include measures to minimize the potential for a substantial odor increase at residences within 1 mile of the project site and shall memorialize the facility's odor abatement system equipment, the systems performance monitoring protocols, and the procedures for investigating and correcting public complaints. The OCP will be made available to the City upon request. The SJVAPCD will ensure the OCP is consistent and not in conflict with the SJVAPCD requirements. Measures included in the OCP shall be consistent and not	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		in conflict with the Best Available Control Technology standards established by SJVAPCD. Raw food processing byproducts shall be transported to and from the facility in closed containers and/or enclosed trucks/trailers. The OCP may include additional measures, if necessary, to minimize odor generation such that the potential for project-related odor complaints from existing residents would be reduced to the degree feasible. To ensure the proper performance of the odor abatement system, certain flow, temperature, pressure, and chemical checks will be performed and logged every shift. Any breakdowns reportable under the SJVAPCD Rule 1100 will be submitted to the City. All public complaints received by facility management will be investigated and documented, and if verified, appropriate response actions will be taken. The facility will provide a 24-hour hotline for public complaints and the number will be posted at the facility entrance.	
Archaeological, Historical, and Tribal Cultural Resources			
Impact 4.5-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources Results of the records search did not indicate any known archaeological sites within the project site. Ongoing agricultural activities have disturbed the soil surface, which would have likely destroyed any shallow artifacts. However, proposed project-related ground-disturbing activities, which would disturb soil at greater depths than agricultural activities, could result in discovery or damage of undiscovered subsurface unique archaeological resources. This would be a potentially significant impact.	PS	**Mitigation Measure 4.5-1a: Conduct Archaeological Survey** Prior to approval of grading plans, the applicant shall retain a qualified archaeologist to conduct a field survey for archaeological resources. The following procedures shall be followed. If archaeological resources are found during the field survey, the resources shall be inventoried using appropriate State record forms and submitted to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for NRHP and CRHR significance. If the resources are found to be significant, appropriate measures shall be identified by the qualified archaeologist and implemented at the direction of the City. Appropriate measures to minimize impacts to significant resources could include avoidance or capping, incorporation of the site in open space, or data recovery excavations of the finds. In addition, excavation and construction activities in the vicinity of discovered resources shall be conducted in the presence of an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional archaeological resources are found during excavation and/or construction activities, the procedure identified in Mitigation Measure 4.5-1b for the discovery of unknown resources shall be followed.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		Mitigation Measure 4.5-1b: Halt Ground-Disturbing Activity Upon Discovery of Subsurface Archaeological Features If archaeological resources are not found during the field survey, excavation and/or construction activities can commence. If archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City as to the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the State CEQA Guidelines. If the resources are determined to be unique archaeological resources as defined under Section 15064.5 of the State CEQA Guidelines, avoidance and/or minimization measures shall be identified by the qualified archaeologist and recommended to the City. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the City approves the measures to protect these resources. Any archaeological resources recovered as a result of mitigation shall be provided to a City-approved institution or person capable of providing long-term preservation to allow future scientific study.	
Impact 4.5-2: Result in Disturbance of Human Remains Although no evidence exists that suggests any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project site, ground-disturbing construction activities could uncover previously unknown human remains. However, the City and project applicant would comply California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, which requires avoidance or minimization of disturbance of human remains, and appropriate treatment of any remains that are discovered. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4.5-3: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource In compliance with PRC Sections 21080.3.1, the City of Fresno sent letters to two Native American tribes on November 27, 2018. No requests for consultation were received in response; therefore, no resources were identified as TCRs. Because no resources meet the criteria for a TCR under PRC Section 21074, there would be no impact to tribal cultural resources.	NI	No mitigation is required for this impact.	NI
Impact 4.5-4: Directly or Indirectly Destroy a Unique Paleontological Resource There is a high potential for discovery of paleontological resources within the city, and the project site is underlain with surficial deposits that have the potential to contain paleontological resources. Ground disturbance associated with the project could uncover previously undiscovered paleontological resources. This would be a potentially significant impact.	PS	**Mitigation Measure 4.5-4: Worker Training, Paleontological Survey, and Construction Monitoring** Prior to initiating construction, the project applicant shall retain a qualified paleontologist to conduct worker awareness training for all construction personnel involved with earthmoving activities, including the site superintendent, about the possibility of encountering fossils. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel will be trained about the proper notification procedures should fossils be encountered. In addition, prior to issuance of grading permits, a qualified paleontologist shall conduct a screening-level site survey to better determine, based on specific site conditions and geology, the potential for significant paleontological resources to be present at a depth that could be disturbed by proposed activities. If the screening-level site survey indicates that the project site is not likely to include significant paleontological resources at a depth that could be adversely affected by proposed activities, the qualified paleontologist shall submit the findings to the City and no additional mitigation is necessary, and construction may proceed. If the paleontologist finds that the potential for significant paleontological resources are likely present and could be affected by proposed activities, the paleontologist shall prepare an adequate mitigation program for avoiding or minimizing adverse impacts to paleontological resources. The program shall include at a minimum: 1) field survey and surface salvage prior to earth moving, if applicable; 2) monitoring by a qualified paleontological resource monitor of trenching and other disturbance of previously undisturbed soil and a plan for stopping work in areas of finds (including identification of appropriate buffers for restricting construction equipment); 3) salvage of unearthed fossil remains and/or traces (e. g., tracks, trails, burrows); 4) screen washing to recover small specimens, if applicable; 5)	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		preparation of salvaged fossils to a point of being ready for curation (i.e., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate); 6) identification, cataloging, curation, and provision for repository storage of prepared fossil specimens; and 7) a final report of the finds and their significance. All of the steps identified in the program shall be overseen by a qualified paleontologist. The mitigation program shall be submitted to the City and approved prior to issuance of grading permits.	
Biological Resources			
Impact 4.6-1: Cause Disturbance to or Loss of Burrowing Owl Ground disturbance during project construction, including grading and excavating, could result in disturbance or direct loss of burrowing owl, if present. This would be a potentially significant impact.	PS	**Mitigation Measure 4.6-1: Protection of Burrowing Owl** The applicant shall implement the following conditions prior to and during construction: ▶ The applicant shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within line of sight of construction activities within 1,500 feet of the project site. Surveys shall be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). ▶ If no occupied burrows are found, a letter report documenting the survey methods and results shall be submitted to CDFW and no further mitigation would be required. ▶ If an active burrow is found during the nonbreeding season (September 1 through January 31), the applicant shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan shall be developed, as described in Appendix E of CDFW's 2012 Staff Report. Burrowing owls shall not be excluded from occupied burrows until the project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan shall include a plan for creation, maintenance, and monitoring of artificial burrows in suitable habitat that provides substitute burrows for displaced owls. ▶ If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and will be provided with a 150- to 1,500-foot protective buffer from construction activities unless a qualified	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer shall depend on the time of year and level disturbance as outlined in the CDFW Staff Report (CDFW 2012). The size of the buffer may be reduced if a broad-scale, long-term, monitoring program acceptable to CDFW is implemented to prevent burrowing owls from being detrimentally affected. Once the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed per the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction. ▶ If active burrowing owl burrows are found on the site and are destroyed during project implementation, the applicant shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts to nesting, occupied and satellite burrows, and burrowing owl habitat shall be mitigated such that habitat acreage, number of burrows, and burrowing owls adversely affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The applicant shall retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards: ▪ Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat, disturbance levels, potential for conflicts with humans, pets, and other wildlife, density of burrowing owls, and relative importance of the habitat to the species range wide. ▪ If feasible, mitigation lands shall be provided adjacent or proximate to the site so that displaced owls can relocate with reduced risk of take. Feasibility of providing mitigation adjacent or proximate to the project site depends on availability of sufficient suitable habitat to support displaced owls that	

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		may be preserved in perpetuity. ▪ If suitable habitat is not available for conservation adjacent or proximate to the project area, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW. ▪ If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and if the numbers are maintained over time. Measures of success, as suggested in the CDFW 2012 Staff Report, shall include site tenacity, number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors.	
Impact 4.6-2: Cause Disturbance to or Loss of Swainson's Hawk and Other Nesting Raptors Project implementation could result in indirect disturbance of nesting Swainson's hawks potentially resulting in nest abandonment if nests are present in the trees along West Jensen Avenue. This would be a potentially significant impact.	PS	**Mitigation Measure 4.6-2: Protection of Nesting Swainson's Hawk** The applicant shall implement the following measures prior to and during construction: ▶ If construction activities are conducted outside of the breeding season (September 1 through February 28), then preconstruction surveys are not required. ▶ For construction activities conducted during the breeding season (March 1 through August 31), the applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site to avoid, minimize, and mitigate potential impacts on Swainson's hawk nesting adjacent to the project site. The surveys shall be conducted no	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		more than 30 days before the beginning of construction. If no nests are found, no further mitigation will be required. ▶ If active Swainson's hawk nests are found within the nest survey area, the construction contractor shall avoid impacts on such nests by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. ▶ No construction activity shall occur within the buffer area of a particular nest until a qualified biologist, in consultation with CDFW, confirms that the chicks have fledged or the nesting cycle has otherwise completed. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.	
Impact 4.6-3: Cause Disturbance to or Loss of California Horned Lark Project implementation could result in disturbance of nesting California horned lark or direct loss of nests, if present on the project site. This would be a potentially significant impact.	PS	**Mitigation Measure 4.6-3: Protection of Nesting California Horned Lark** The applicant shall implement the following conditions prior to and during construction: ▶ If construction activities are conducted completely outside of the California horned lark breeding season (August 1 through February 28), then preconstruction surveys are not required. ▶ For construction activities conducted during the California horned lark breeding season (March 1 through July 31), the applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 300 feet of the project site to avoid, minimize, and mitigate potential impacts on	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		California horned lark nesting within the project site. The surveys shall be conducted no more than 30 days before the beginning of construction. If no nests are found, no further mitigation will be required. ▶ If active California horned lark nests are found within the nest survey area, the construction contractor shall avoid impacts on such nests by establishing a no-disturbance buffer around active nest sites identified during preconstruction surveys. The appropriate buffer size shall be determined by a qualified biologist in consultation with CDFW, based on the nature of the project activity, the extent of existing disturbance in the area, visibility of the disturbance from the nest site, and other relevant circumstances. ▶ No construction activity shall occur within the buffer area of a particular nest until a qualified biologist, in consultation with CDFW, confirms that the chicks have fledged or the nesting cycle has otherwise completed. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.	
Greenhouse Gas Emissions and Climate Change			
The project would result in GHG emissions from construction activities including exhaust from worker commute trips, materials delivery, and the use of heavy-duty construction equipment that would result in a total of 619 $MTCO_2e$. The project would result in increases in energy consumption and vehicle trips that would result in approximately 12,800 $MTCO_2e$/year. However, this amount of GHG emissions is below the Cap-and-Trade limit of 25,000 MTCO2e/year. Additionally, the project would implement SJVPACD-recommended BPS for stationary sources which would result in additional GHG emission reductions. For these reasons project-related GHG emissions would not conflict with applicable plans, policies, or regulations that have been adopted with the goal of reducing GHG emissions. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Hazards and Hazardous Materials			
Impact 4.8-1: Create a Significant Hazard Through Transport, Use, or Disposal of Hazardous Materials The proposed project would involve routine transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) during construction activities. Additionally, long-term operation activities include processing food byproducts generated by local packers, restaurants, food service establishments, butchers, and grocers into animal- and vegetable-derived fats and proteins. However, compliance with existing, applicable rules and regulations specifically designed to protect the public health would be sufficient to preclude significant hazardous materials impacts. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.8-2: Create Potential Human Hazards from Exposure to Existing On-Site Hazardous Materials Construction activities that disturb subsurface materials could encounter previously unidentified contamination from historic agricultural use of the site. Encountering these hazardous materials could expose workers, the public, or the environment to adverse effects depending on the volume, materials involved, and concentrations. This would be a potentially significant impact.	PS	**Mitigation Measure 4.8-2: Prepare Environmental Site Assessment** Before initiation of grading or other groundwork, the project applicant shall retain a qualified environmental professional to conduct a Phase I environmental site assessment (ESA), consistent with the American Society for Testing and Materials standards (ASTM E1527). The Phase I ESA will evaluate the likelihood that hazardous chemicals are present and whether soil sampling is necessary. If the Phase I ESA indicates that contamination is unlikely, no further mitigation is necessary other than any recommendations identified in the Phase I ESA (such as stopping work if stained soil is encountered). If the Phase I ESA indicates that additional soil sampling or other further evaluation is necessary, the project proponent shall hire a qualified environmental professional to conduct a Phase II ESA to determine the presence and extent of contamination. The assessment will include soil sampling consistent with DTSC's guidelines for development of former agricultural properties. (The investigation may include borings and composite samples for organochlorine pesticides and samples for arsenic.) If the results indicate that contamination exists at levels above regulatory action standards, then the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including Fresno County Environmental Health Department, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination. If remediation is necessary, the applicant shall hire a	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
		qualified environmental professional to prepare a work plan that identifies necessary remediation activities, including excavation and removal of on-site contaminated soils, appropriate dust control measures, and redistribution of clean fill material on the project site. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site. The plan shall also identify when and where soil disturbing construction activities may safely commence.	
Impact 4.9-3 Impair Emergency Response or Evacuation Plans The project site plans would be required to meet all Fire Department and General Plan Policy requirements for emergency vehicle access. Compliance with these regulations would ensure the proposed access points would meet requirements for emergency vehicle access, turnaround, and vertical clearance, as well as secure evacuation routes. Vehicle traffic generated by the proposed project would not substantially increase traffic on local roadways. Therefore, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.9-4 Create a Significant Risk from Wildfires The project site is surrounded by existing development and irrigated agricultural land, the likelihood for wildland fire in this area is low. Compliance with existing regulations would ensure proposed development meets the standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards. Therefore, the project would not create a significant risk from wildfires and this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Hydrology and Water Quality			
Impact 4.9-1: Violate Water Quality Standards or Waste Discharge Requirements, Otherwise Degrade Water Quality, or Interfere with Implementation of a Water Quality Control Plan Project construction activities such as grading, excavation, trenching, and spoil pile storage could result in erosion and sedimentation, and discharge of other nonpoint source pollutants. In addition, operation of the proposed facility has the potential to generate polluted runoff associated with storage of cleaning chemicals	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
and vehicle/equipment leaks. To avoid or minimize the potential for adverse construction- and operation-related effects on water quality, the project would be required to develop and implement a SWPPP and BMPs that include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution. Therefore, short- and long-term impacts on surface and groundwater quality would be less than significant.			
Impact 4.9-2: Substantially Decrease Groundwater Supplies, Interfere with Groundwater Recharge, or Interfere with Implementation of a Sustainable Groundwater Management Plan The project would extract groundwater from a new well which could decrease groundwater levels. However, the rendering plant is primarily served by groundwater under current conditions and would be moved from an area in overdraft to an area of recharge created by the presence of treated effluent from the RWRF. In addition, the proposed facility would use non-potable recycled water on an as-needed basis. The project site is in an area with substantial agricultural land and little impervious coverage. The project would develop 10 acres of impervious surface area on the 20-acre site and the remainder of the property would remain pervious, allowing for stormwater infiltration. Therefore, the project would not substantially decrease groundwater levels nor interfere with groundwater recharge. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.9-3: Increase in Surface Water Runoff Potentially Exceeding the Capacity of Existing or Planned Stormwater Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff The project would add 10 acres of impervious surface to the currently undeveloped site, which would change the existing drainage rate and pattern of the site and could degrade downstream surface waters. Because the project would not drain into a municipal storm drain system, increased stormwater rate and volume could cause increased potential for localized flooding. This would be a potentially significant impact.	PS	**Mitigation Measure 4.9-3: Prepare On-Site Drainage Plan** The project applicant shall prepare an on-site drainage plan for review and approval by the City's utilities department. The plan shall identify on-site stormwater quality and any needed storage features, such as (but not limited to) bioswales, bioretention facilities, and detention facilities. These facilities shall reduce the peak stormwater runoff rates (flowing off the site) to the existing runoff rate, or other appropriate runoff rate consistent with City standards and shall be designed to minimize siltation in stormwater leaving the site.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Land Use and Planning			
Impact 4.10-1: Conflict with Relevant Plans, Policies, and Zoning Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect The proposed project would require a General Plan Amendment (GPA), Rezone, and conditional use permit (CUP). Requests for discretionary permits require that the project be evaluated for compliance and consistency with a variety of policy and regulatory programs adopted to avoid or reduce the severity of potential environmental effects. Before approval, the project would be required to demonstrate consistency with General Plan policies and adopted mitigation measures of the General Plan MEIR; development standards for the Industrial-Heavy (IH) zoning district outlined in Article 13 of the Development code; and required findings for hazardous waste facilities per Section 15-2732. Discretionary review would ensure that the proposed project is consistent with these policies, ordinances, or other resolutions. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Noise			
Impact 4.11-1: Construction Noise While all construction would occur within the city limits, sensitive receptors within the county could be affected by noise from the project. The construction hours included in the County Noise Ordinance are more stringent than the City's. The County of Fresno Noise Ordinance (Chapter 8.40 of the County of Fresno Ordinance Code), exempts construction-related noise, provided that all construction activities are performed between 6:00 a.m. and 9:00 p.m., Monday through Friday, and between 7:00 a.m. and 9:00 p.m., Saturday and Sunday. Construction activities would be limited to the less noise-sensitive hours (e.g. daytime), consistent with the limitations of the County Noise Ordinance. Therefore, the impact of short-term on-site construction noise would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.11-2: Exposure of Person to or Generation of Excessive Vibration Operation of the project would not result in any new long-term operational sources of ground vibration. Construction activities would require the use of heavy-duty off-road equipment that could generate ground vibration in excess of state and federal standards. Because all construction activity would take place at least 2,400 feet from sensitive receptors, there would be no exceedance of Caltrans or FTA standards. Therefore, the project's exposure of persons to excessive levels of groundborne vibration would be less than significant.	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4.11-3: Long-Term Operational Non-Transportation Noise Levels The primary source of on-site noise would be delivery-related activities occurring near the rendering building. Though noise associated with trucks and vehicles is typically considered a mobile source, delivery-activities would occur primarily on-site, in one location and behave more like stationary noise sources. It is expected that operational activities would occur over a 24-hour period. The project would generate exterior noise levels at nearby sensitive receptors in exceedance of County standards during nighttime operations. Therefore, the project's impact would be potentially significant.	PS	**Mitigation 4.11-3: Prepare a Noise Minimization Plan** The applicant shall hire a qualified acoustical specialist to prepare a noise minimization plan that will identify design strategies and noise attenuation features to reduce noise generated by the proposed project to below 45 dB L50 at the primary outdoor gathering area (i.e., yard associated with sensitive receptor) of all residencies in the vicinity of the project where project operational noise could result in excess noise levels. The noise minimization plan shall include, but not be limited to, a combination of the following measures (or other measures demonstrated to be equally effective) to reduce the effect of noise levels generated by on-site operational noise sources. ▶ Orient the building such that the building serves as a barrier protecting off-site receptors to noise generated by on-site operational equipment including fork lifts, man lifts, pickup trucks, front-end loaders, and delivery trucks. The typical sound level reduction a building could provide ranges from 12 dB with windows open to 27 dB with windows closed (EPA 1978:11) and additional reduction is achievable if masonry exterior walls are used in the building's construction (Caltrans 2002:7-37). ▶ Enclose the area where operational equipment would operate with one or more walls. Generally, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. ▶ Construct a sound barrier along the sides of the project site between the sensitive receptors and the facility. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof). Scenic quality factors shall be taken into account during design and the barriers shall be designed to blend into the landscape on the project site, to the extent feasible. Generally, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. ▶ Measures identified in the noise minimization plan shall be incorporated into the project design and identified on the site plan. The City shall verify that these measures are included in the site plan prior to approval of the final site plan.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Impact 4.11-4: Exposure of Existing Sensitive Receptors to Excessive Traffic Noise Levels Traffic related to project operation would increase the noise levels along these two roadway segments by no greater than 0.4 dB. Thus, increases in project-related traffic would not result in a substantial permanent increase in ambient noise levels in the project vicinity. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Transportation/Traffic			
Impact 4.12-1: Impacts to Intersection Operating Conditions All study intersections are projected to operate at an acceptable LOS under Existing Plus Project conditions during both peak-hours. Thus, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.12-2: Impacts to Roadway Segment Operations All study roadway segments are projected to operate at an acceptable LOS during both peak-hours under all analysis conditions. Thus, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.12-3: Impacts to Transportation Hazards The project design would not result in a substantial increase in transportation hazards (i.e. sharp curves or dangerous intersections) or add incompatible vehicles to existing or planned transportation facilities (i.e., farm equipment). Thus, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.12-4: Impacts to Emergency Access The project would be designed according to City of Fresno standards would be reviewed and approved by the City of Fresno and the appropriate emergency service providers; and thus, would provide adequate emergency access. This is impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 4.12-5: Impacts to Alternative Transportation Modes The project would not conflict with any adopted policies, plans, or programs related to transit, bicycle, or pedestrian facilities, nor would the project decrease the performance or safety of any existing facilities. Thus, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

Table 2-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
NI = No impact LTS = Less than significant PS = Potentially significant S = Significant SU = Significant and unavoidable			
Energy			
Impact 4.13-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy During Construction or Operation The project would increase electricity and natural gas consumption at the project site relative to existing conditions. However, the project would be located adjacent to the Fresno-Clovis RWRF, which would supply a portion of the project's natural gas with conditioned gas produced from waste methane. Through implementation of Mitigation Measure 4.7-1, fuel consumption associated with stationary equipment would be reduced by using Best Performance Standards. The project would be constructed in accordance with the California Building Energy Efficiency Standards that are in effect at the time of construction. For these reasons, the project would not result in wasteful, inefficient, and unnecessary consumption of energy during construction or operation. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

3 PROJECT DESCRIPTION

The City of Fresno is considering a general plan amendment (GPA) and rezone of approximately 40 acres of land immediately east of the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) to accommodate relocation of the Darling Ingredients, Inc. rendering facility from a more urban location in the city. The project, including necessary entitlements and other approvals, is described in detail below.

3.1 PROJECT LOCATION

3.1.1 Location and Physical Setting

The project site is located within the city limits, but not within the city proper; the site is located just east of the RWRF within a large island of incorporated, City-owned property south of West Jensen Avenue. The property consists of 40 acres of land used currently used for agriculture, and 20 acres of this property would be developed for the rendering plant (project site). This land is located within a 3,200-acre area of incorporated land and is separated from the rest of the city by approximately 2 miles (Figure 3-1).

The project site is adjacent to the southeast corner of the RWRF, immediately north of Dry Creek Canal, south of West Jensen Avenue, and west of South Cornelia Avenue. The RWRF treatment facilities occupy 180 acres (located adjacent to the western boundary of the project site) and percolation ponds occupy an additional 1,700 acres.

Most of the area surrounding the project site is in agricultural use (vineyards, orchards, and various row crops). A few agricultural residences are in the vicinity; the nearest residences are approximately 1,200 and 1,300 feet east of the property and approximately 2,500 feet from the proposed location of the rendering plant (Figure 3-2). There are no structures on-site.

3.1.2 Land Use Designations and Zoning

The project site is currently designated "Public Facility" in the Fresno General Plan (Figure 3-3) and zoned "Public and Institutional" (PI) (Figure 3-4). The Public Facility designation applies to public facilities such as City and County buildings, schools, colleges, municipal airports, hospitals, fire and police stations, recycling centers, sewage treatment plants, parks, trails, recreational centers, and golf courses.

Consistent with the General Plan designation, the PI zone allows public or quasi-public facilities, including City facilities, utilities, schools, health services, corporation yards, utility stations, and similar uses. Accessory retail uses and services, including food facilities and childcare, are permitted by right.

3.2 PROJECT BACKGROUND AND NEED

The existing Darling Ingredients Inc. facility is located on a 5.22-acre parcel on Belgravia Road between Church Avenue and E Street in the southwest area of the city (Figure 3-1). The facility was constructed and began operation in 1956 as a slaughterhouse and beef packing company, with limited rendering (i.e., processing of animal products for reuse) operations. Rendering gradually expanded, packing operations phased out and the rendering plant site was annexed to the city in 1971. Over the last 60 years, non-industrial urban uses were developed in the surrounding area such that residential neighborhoods are now within 0.25 mile of the rendering plant, with homes as close as 800 feet from the rendering plant structures.

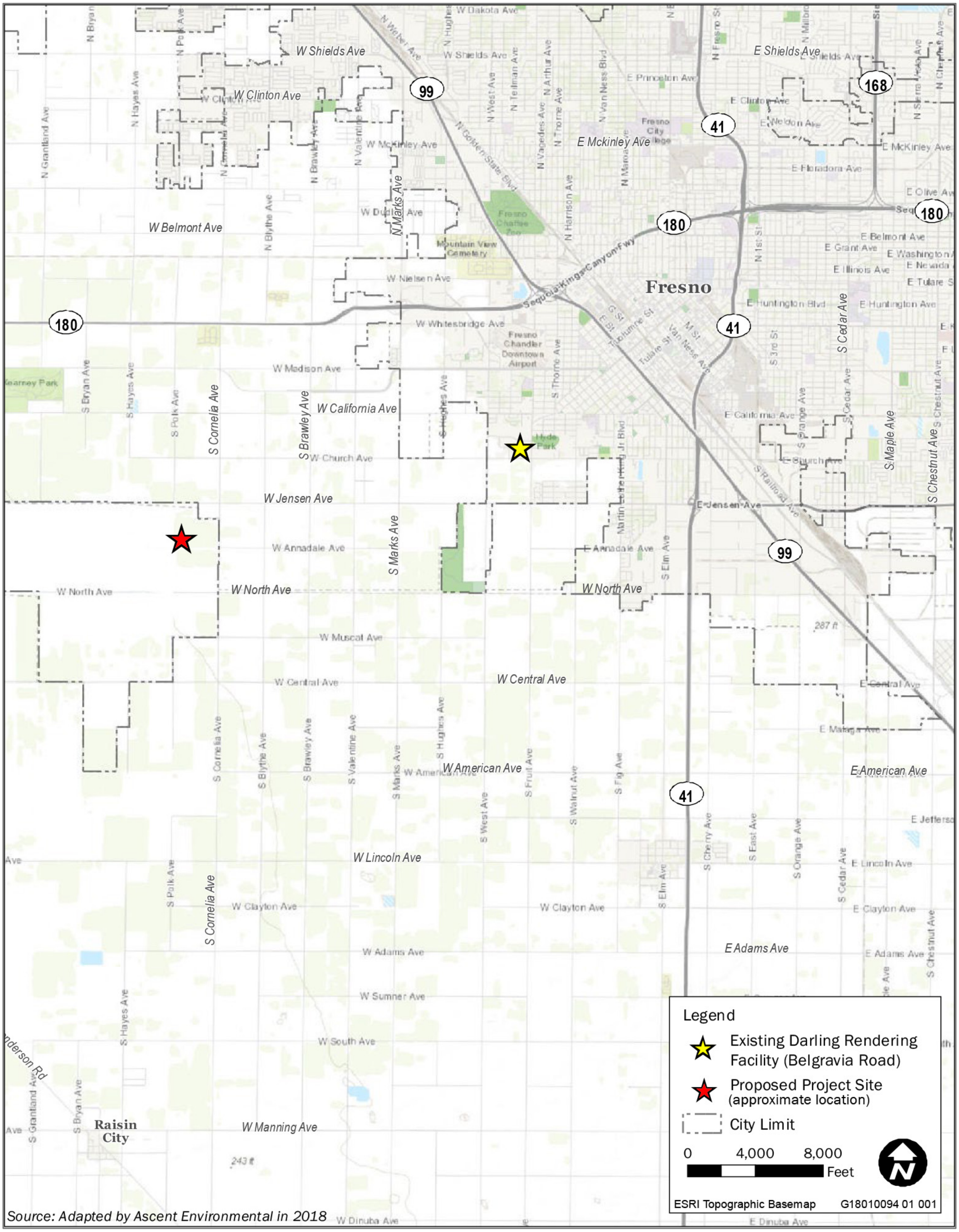
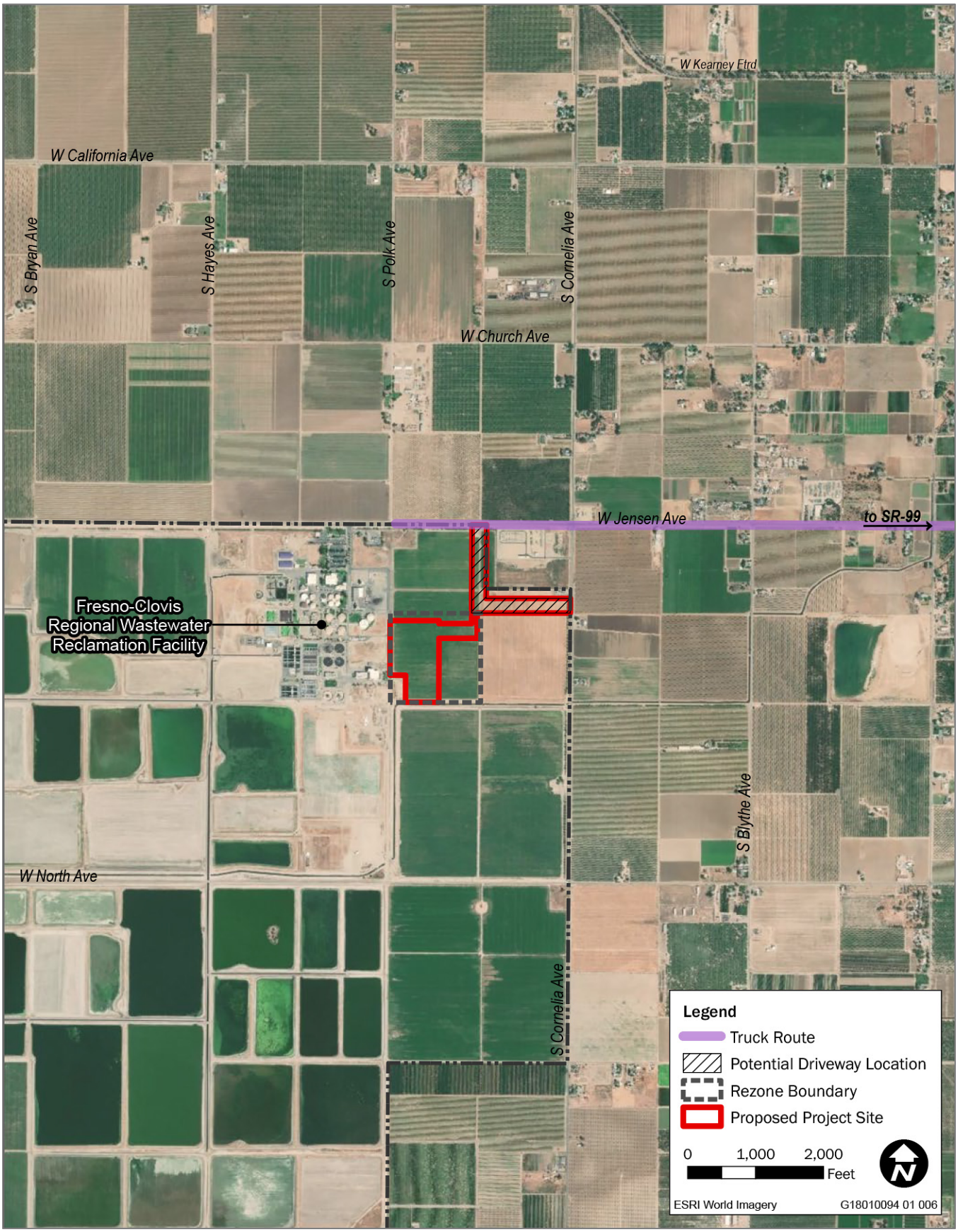


Figure 3-1 Project Vicinity



Source: Adapted by Ascent in 2018

Figure 3-2 Project Boundary and Truck Route

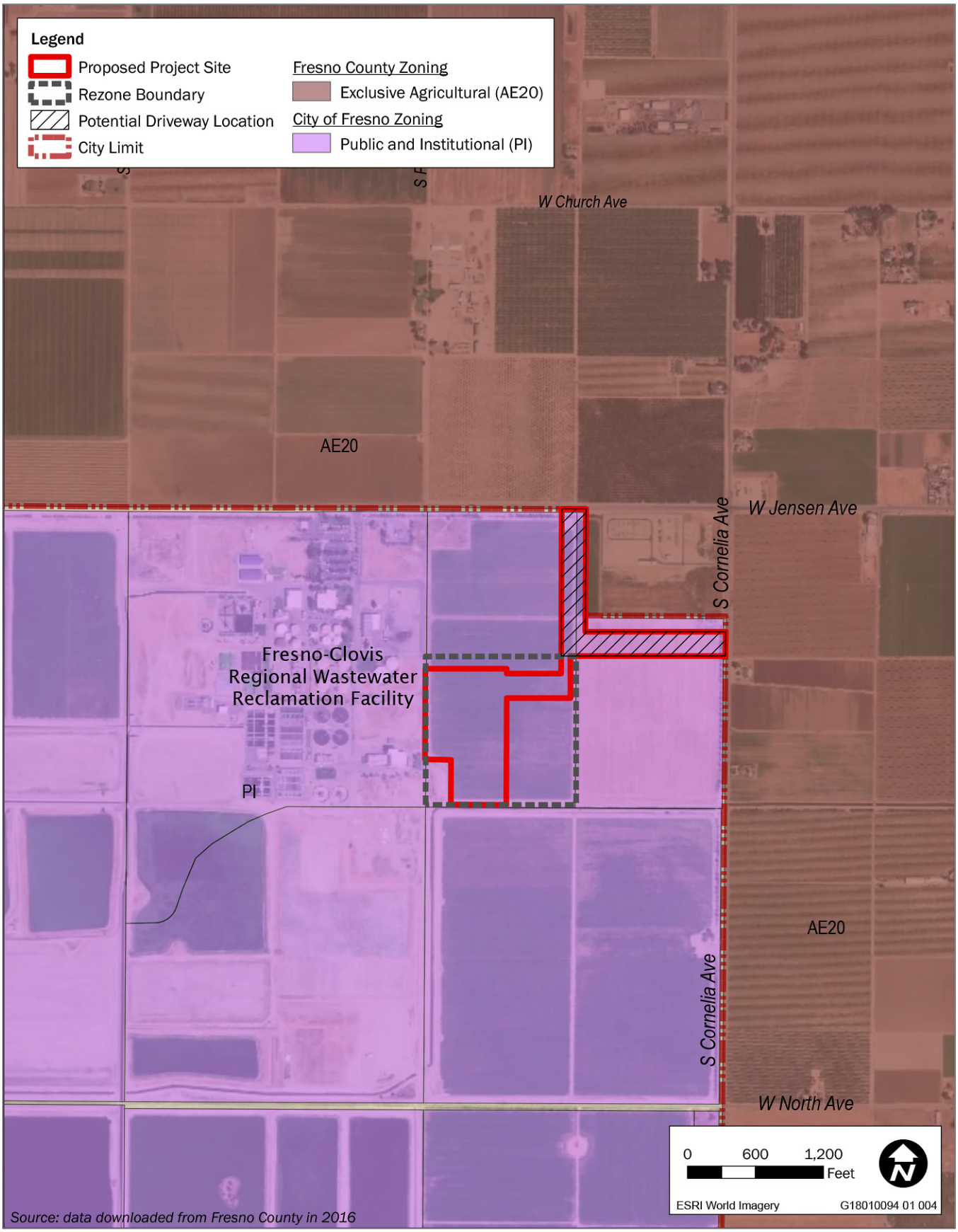


Figure 3-3 Zoning

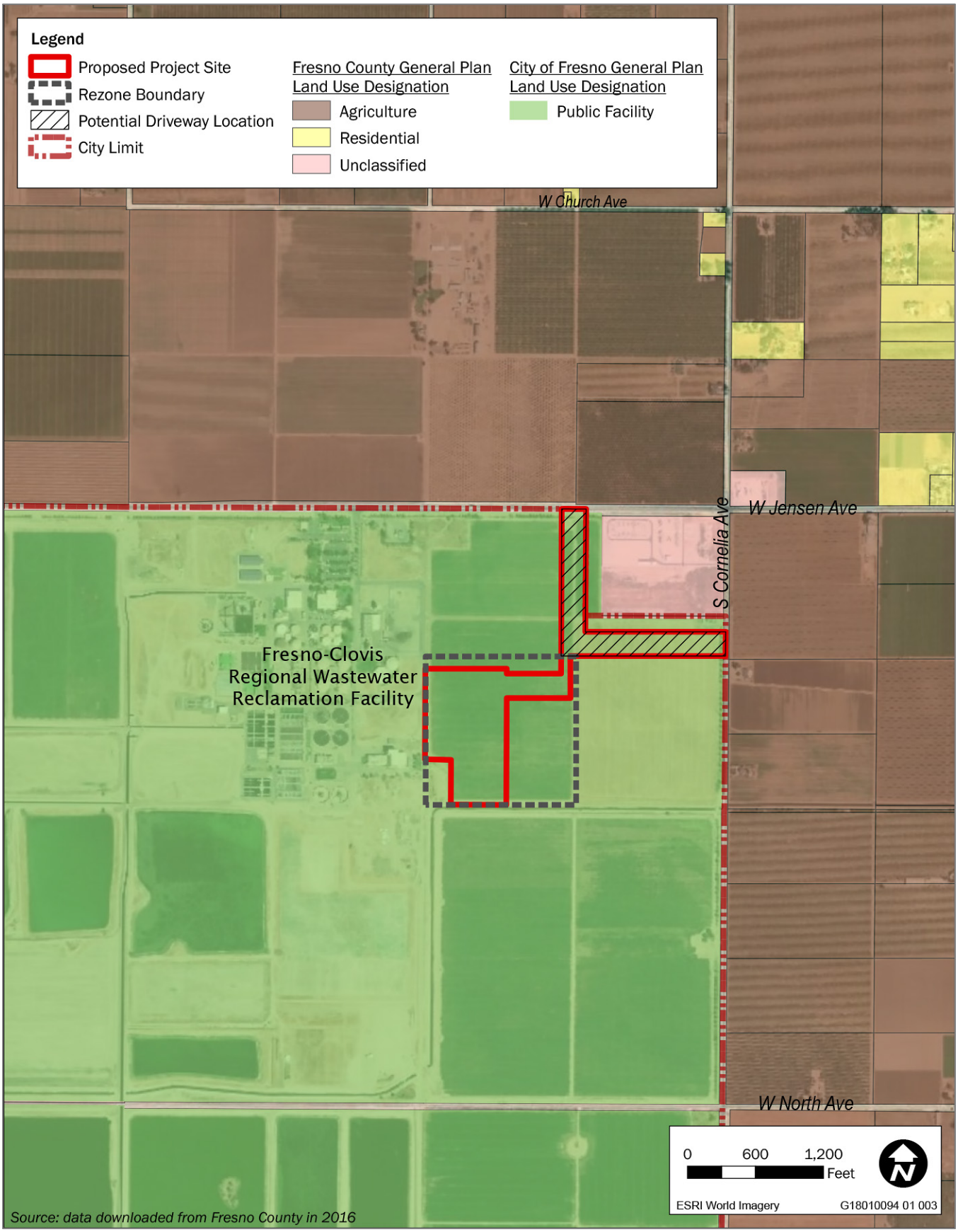


Figure 3-4 General Plan Land Use

The existing Darling facility is a food processing byproduct conversion operation that collects and processes raw material (primarily beef fat, bone, and offal) into proteins and fats that can be beneficially used as ingredients in food, fertilizer, feed, and fuel. The conversion process has the potential to generate odor which is managed through an odor abatement system. Evaporated moisture from the conversion process is condensed, pretreated, and discharged to the RWRF. Air emissions from the process, including but not limited to the boiler system and odor abatement system, are regulated and permitted by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The facility currently has 38 employees and is permitted to process up to 850,000 pounds of material per day in accordance with a SJVAPCD Permit. The facility's major sources of raw materials include Cargill, Harris Ranch Beef, and other sources. Most raw materials are shipped from within 200 miles of the existing facility.

The City is considering the relocation of this heavy industrial facility away from the residential neighborhoods that have been developed near the existing facility subsequent to its establishment.

This project includes a Disposition Agreement and Development Agreement (DADA) to facilitate construction of the proposed new rendering facility consistent with the GPA and rezone and consistent with the features of the project described in this Draft EIR.

3.3 PROJECT OBJECTIVES

The project would relocate the Darling facility from its current location on Belgravia Ave just southwest of downtown to the new 20-acre site near the RWRF and expand its current permitted processing limits from 850,000 pounds per day to 2 million pounds per day or more but would be limited to a permitted maximum of 10 million pounds per week rather than a daily maximum. The project would require a GPA to change the General Plan land use designation of land from Public Facility to Heavy Industrial, and a rezone of the same property from PI to Industrial-Heavy (IH). The proposed Darling facility would also require a conditional use permit (CUP) to operate within the IH zone that would be processed with the GPA and rezone.

The project, including necessary entitlements and other approvals, is described in detail below. The preliminary site plan drawing is shown below in Figure 3-5 and the General Plan designations and Zoning are shown in Figures 3-3 and 3-4, respectively. The location of the existing rendering facility is shown in Figure 3-1.

3.4 RENDERING PLANT RELOCATION

3.4.1 Operation

The industrial activities related to the project would be similar to those of the existing Darling facility and would include an increase in processing capacity. The new plant would continue to serve area businesses including packers, restaurants, food service establishments, butchers, and grocers in the production of animal and vegetable derived fats and proteins for use as ingredients in food, feed, fertilizer, and fuel. The primary industrial activities at the facility would include:

- raw material collection,
- conversion of raw materials,
- storage of finished products,
- shipment of finished products, and
- fleet-related activities.

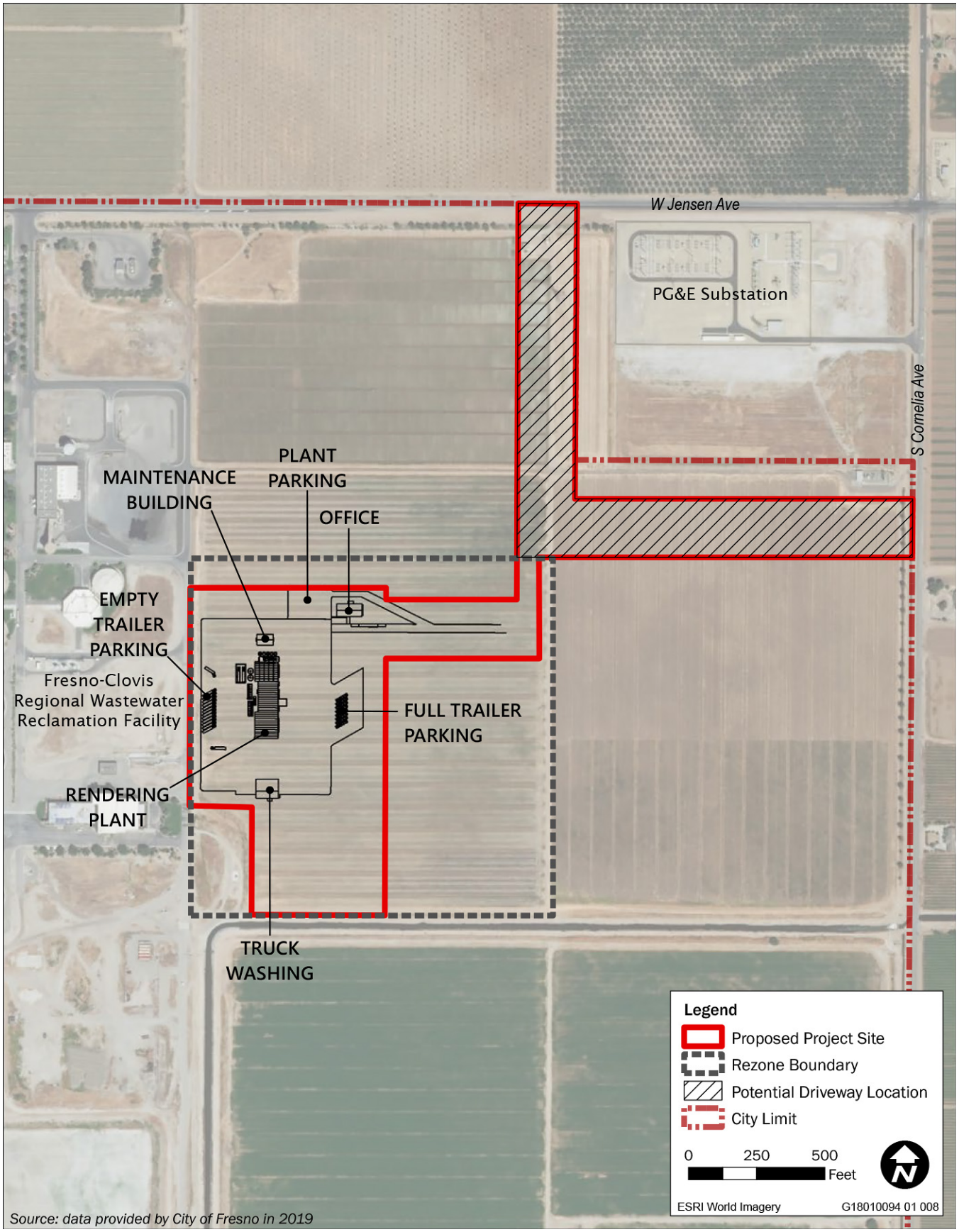


Figure 3-5 Site Plan

Darling anticipates that the relocated operation would process up to 10 million pounds of food processing byproducts on a weekly basis. The anticipated daily production rate could reach 2 million pounds or more but would be limited on a weekly basis by the permitted maximum.

The primary operational goal is to process raw materials as quickly as possible. This focus helps improve operational efficiency and the quality of finished products, while at the same time limiting the odor potential. Limited outdoor staging of raw materials is sometimes necessary when inflow of raw materials exceeds processing rates or when there are plant malfunctions.

WASTEWATER PRETREATMENT

All wastewater generated at the facility (a portion of which may include stormwater) would pass through a primary treatment system before being discharged to the RWRF. The primary treatment system would likely consist of a screening step, settling tank with skimmer, an equalization tank, and a dissolved air flotation system. This pretreatment step is designed to reduce the loading of solids, organic matter, fat, oil, and grease to the RWRF. Despite the performance of the primary treatment system, certain levels of nutrients, soluble organic matter, and other pollutants would be discharged to the RWRF for further treatment. Table 3-1 below provides a summary of the predicted loading to the RWRF. The wastewater discharges from the Darling facility to the RWRF would be compliant with City's sewer ordinance.

Table 3-1 Anticipated Flow and Loading Ranges

Hydraulic Flow (gallons/day)[1]	Ammonia (lbs/week)[2]	BOD_5 (lbs/week)[3]	TSS (lbs/week)[4]	FOG (lbs/week)[5]
250,000-350,000	18,750–26,250	125,000–175,000	6,250–8,750	8,750–12,250

Notes:
1. Conservatively assumes weekly permitted volume is produced over 6 days.
2. Average concentration of 1,500 milligrams/liter (mg/L) with the flow ranges in the table above.
3. Average concentration of 10,000 mg/L with the flow ranges in the table above.
4. Average concentration of 750 mg/L with the flow ranges in the table above.
5. Average concentration of 500 mg/L (City Ordinance Limit) with the flow ranges in the table above.
6. Loading can be seasonally influenced.
lbs = pounds
BOD = biochemical oxygen demand
TSS = total suspended solids
FOG = fats, oils, and grease

Source: Darling Ingredients, Inc. 2017

HOURS OF OPERATION AND FLEET ACTIVITIES

Raw materials to be converted would be collected and delivered to the facility for processing 6 to 7 days per week. Processing would typically begin on Monday and run through Saturday or as needed Sunday.

The collection routes and delivery schedules would be variable and would likely change day to day depending on the work schedules of the byproduct generators. Raw materials would be delivered to the facility by way of Darling-owned trucks, contract haulers, and customer-owned trucks. The rendering process would be continuous and would typically operate 24 hours per day, 6 to 7 days per week. Delivery schedules would be relatively stable with only limited seasonal fluctuations.

The fleet would include, but would not be limited to, barrel trucks, pump trucks, end dumps, hopper trailers, and tankers (see Table 3-2 below for details). The types and numbers of vehicles would vary based on customer needs, type of service being provided, and economic conditions, but it is anticipated that project operation would use an average of 75 trucks per day, or 150 truck trips per day. The equipment used in the collection and delivery of these of

raw materials to the facility would be maintained in good operating condition and travel in a closed/covered condition, consistent with industry standards.

Table 3-2 Anticipated Darling Vehicle Types[1]

Vehicle	Estimated Capacity
Fat and Bone (End Dumps)	15,000 to 45,000 lbs
Raw Material (Trailers)	Legal Load Limit
Used Cooking Oil (Barrel Trucks)	3,000 to 3,500 gal
Used Cooking Oil (Tank Trucks)	3,500 to 5,000 gal
Finished Fat (Tankers)	6,000 gal
Finished Meal (Hopper Trucks)	25 ton
Miscellaneous Plant Vehicles (e.g., fork lifts, man lifts, pickup trucks, yard trucks, front end loaders)	N/A

Notes: lbs = pounds; gal = gallons
[1] This does not include contract hauler or customer-owned trucks.
Source: Darling Ingredients, Inc. 2017

A truck shop and a fueling station would be located on-site. The fueling station would include a double-walled tank that is self-contained.

EMPLOYMENT

Approximately 60 to 70 full-time employees would work at the facility (23 new positions would be created as a result of the operational expansion). The facility would operate in three shifts with three production shifts and one maintenance shift. It is expected that there would be a maximum of 25 employees on site per shift.

SPILL PREVENTION

The potential for spills would be reduced through the management of Spill Prevention Control and Countermeasures (SPCC). The SPCC would be managed in accordance with the requirements of Title 40 Code of Federal Regulations (CFR) 112, Oil Pollution Prevention.

AIR QUALITY

The project would require an Authority to Construct (ATC) permit from SJVAPCD. This ATC would require that Darling maintain and operate only state-of-the-art odor abatement technology that would meet the Best Available Control Technology standards established by SJVAPCD. Details of an Odor Control Plan would be developed once the terms and conditions of the subject permit were defined. The ATC would also address combustion emissions associated with the facility boiler system. The project would also implement SJVAPCD-recommended Best Performance Standards for stationary equipment, which would reduce energy consumption.

3.4.2 Design and Appearance

The project would include a total of four buildings— a conversion facility, a truck shop, a maintenance shop, and an office building—with a total floor area of approximately 40,000 sf, which is approximately 12,200 sf larger than the existing facility.

Excluding equipment (discussed below), typical building height would be approximately 28 feet with a maximum building height of 45 feet. The conversion facility would be a concrete pre-cast building, and the other three buildings would include metal, brick, or block veneer.

The tallest equipment would include two new 60-foot protein storage silos.

LANDSCAPING AND LIGHTING

The project would include green areas and landscaping per the City code. Treated non-potable water from the RWRF may be used for irrigation.

The project would include exterior lighting for nighttime operation and parking lot security. A lighting plan would be prepared for review and approval by the City.

VEHICULAR ACCESS

Two dedicated access points would be provided for the site. West Jensen Avenue would serve as the dedicated truck route, and all trucks would access the project site from West Jensen Avenue (Figure 3-2). Employees and sales calls would access the site via South Cornelia Avenue.

PARKING

The proposed parking lot would include up to 36 spaces for employees and visitors. This is exclusive of the truck parking needed for raw material trucks, which must be separate to avoid contaminating the raw material.

INFRASTRUCTURE AND UTILITIES

Drainage

The project would add up to 10 acres of impervious surface to the site. Stormwater from these areas would sheet flow into grassy areas that would function as bio filters to remove sediment from stormwater. Stormwater management would be addressed in the final site plan development.

Stormwater Quality Management

The proposed Darling facility would manage stormwater quality through a stormwater pollution prevention plan in accordance with the requirements of the State Water Resources Control Board (SWRCB) and would comply with City standards for stormwater management. On-site stormwater basins would be constructed on-site to capture runoff from the site.

Utilities

The estimated demand for City-supplied water would be 75,000 gallons per day of potable water. Use of non-potable water would be on an as-needed basis. The facility would use air cooled condensing as part of the conversion process.

The demand for natural gas is estimated to be up to 150 million British thermal units per hour; however, it is estimated that at least 18 percent of this demand would be supplied by conditioned gas, produced from the waste methane generated by the RWRF.

It is anticipated that one 4,000 kilovolt-ampere transformer would be needed to support the demand for electricity. The project includes extension of utilities from nearby off-site locations.

PROJECT CONSTRUCTION

Project construction would include five primary phases: grading and site preparation; utility installation and connection; roadway, driveway, and parking lot construction; building construction and equipment installation; and landscape installation. Construction equipment would vary by phase, but the entire construction process would include operation of the following types of equipment: graders, dozers, excavators, scrapers, water trucks, cranes,

forklifts, generators, pavers, rollers, welders, and air compressors. The construction staging area would be located on-site. Construction would take place during typical daytime hours, between 6:00 a.m. and 9:00 p.m., Monday through Friday, and 7:00 a.m. and 5:00 p.m., Saturday and Sunday. Depending on the phase of construction, there could be up to 50 construction workers on site on a given day.

Off-site construction would be limited to connection to the existing natural gas line and recycled water line, both located west of the site within the Jensen Avenue right-of-way, connection to the conditioned gas pipeline located southwest of the site on the RWRF property, and construction of and connection to a new potable water well and new sewer manhole, both located west of the site on the RWRF property.

The following dust control measures are included as part of the project to comply with SJVAPCD Regulation VIII. These measures will be conditions of approval of the project.

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.

3.4.3 Existing Rendering Plant Removal and Future Use of the Property

The existing rendering plant would cease operations at its current location within 6 months of the new plant site being fully permitted and operational. The existing equipment would be dismantled, and silos would be removed within 1 year after the new plant is fully permitted and operational. No structure demolition is proposed. Deed restrictions would be recorded prohibiting the use of the existing rendering plant site for future use as a rendering plant with the City of Fresno as a third-party beneficiary to the restriction. Potential future land uses that could locate on the existing rendering plant site are unknown at this time (except that a rendering plant use would not be allowed). Because it is unknown, future use of the existing rendering plant site is not evaluated in this Draft EIR. Any future use proposed for the site would be subject to review pursuant to CEQA.

3.4.4 Project Entitlements

Discretionary approvals and permits are required by the City for implementation of the project. The project would require the following discretionary approvals and actions:

- general plan amendment,

- rezone,
- site plan approval,
- conditional use permit, and
- DADA.

Subsequent ministerial actions would be required for implementation of the project including issuance of grading and building permits.

3.4.5 Permits and Licenses

Like the existing rendering plant, the permits, licenses, and plans listed in Table 3-3 below may be required from other agencies for operation of the relocated facility.

Table 3-3 Required Permits and Licenses for the Darling Facility

Permit/Licenses	Agency/Entity
Licensed Renderer	California Department of Food and Agriculture
Inedible Kitchen Grease Renderer	California Department of Food and Agriculture
Unified Program Facility Permit	County of Fresno Department of Public Health
Spill Prevention Control and Countermeasure Plan	U.S. Environmental Protection Agency
Stormwater Pollution Prevention Plan	California State Water Resources Control Board
Air Permit	San Joaquin Valley Air Pollution Control District
National Pollutant Discharge Elimination System Permit and Wastewater Discharge Permit	Regional Water Quality Control Board

Source: Darling Ingredients, Inc. 2017

4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 APPROACH TO THE ENVIRONMENTAL ANALYSIS

This draft environmental impact report (Draft EIR) evaluates and discloses the environmental impacts associated with the Fresno Rendering Plant Relocation and Expansion Project (project), in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.). Sections 4.2 through 4.13 of this Draft EIR present a discussion of regulatory background, existing conditions, environmental impacts associated with construction and operation of the project, mitigation measures to reduce the level of impact, and residual level of significance (i.e., after application of mitigation, including impacts that would remain significant and unavoidable after application of all feasible mitigation measures). Issues evaluated in these sections consist of the environmental topics identified for review in the Notice of Preparation prepared for the project (see Appendix A). Chapter 5 of this Draft EIR, "Cumulative Impacts," presents an analysis of the project's impacts considered together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. Chapter 6, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to the proposed project, as required by Section 15126.6 of the State CEQA Guidelines. Chapter 7, "Other CEQA Sections," includes an analysis of the project's growth-inducing impacts, as required by Section 21100(b)(5) of CEQA.

Sections 4.2 through 4.13 of this Draft EIR each include the following components.

Regulatory Setting: This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from the federal, State, and local levels are each discussed as appropriate.

Environmental Setting: This subsection presents the existing environmental conditions on the project site and in the surrounding area as appropriate, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the environmental setting area evaluated (the project study area) differs among resources, depending on the locations where impacts would be expected. For example, traffic impacts resulting from the proposed project are assessed for the regional roadway network, whereas cultural-resource impacts from the proposed project are assessed for the project site only.

Environmental Impacts and Mitigation Measures: This subsection presents thresholds of significance and discusses potentially significant effects of the project on the existing environment, including the environment beyond the project boundaries, in accordance with State CEQA Guidelines Section 15126.2. The methodology for impact analysis is described, including any technical studies upon which the analyses rely. The thresholds of significance are defined and thresholds for which the project would have no impact are disclosed and dismissed from further evaluation. Project impacts and mitigation measures are numbered sequentially in each subsection (e.g., Impact 4.2-1, Impact 4.2-2, Impact 4.2-3). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis, rationale, and substantial evidence upon which conclusions are drawn. The determination of level of significance of the impact is defined in bold text. A "less-than-significant" impact is one that would not result in a substantial adverse change in the physical environment. A "potentially significant" impact or "significant" impact is one that would result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. Mitigation measures are identified, as feasible, to avoid, minimize, rectify, reduce, or compensate for significant or potentially significant impacts, in accordance with the State CEQA Guidelines Section 15126.4. Unless otherwise noted, the mitigation measures presented are recommended in the Draft EIR for consideration by the City to adopt as conditions of approval.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project definition, leaving little discretion in its implementation, and would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how the they are accomplished, or have a substantial compensatory component, the level of significance is determined before applying the influence of the regulatory requirements. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

This subsection also describes whether mitigation measures would reduce project impacts to less-than-significant levels. Significant-and-unavoidable impacts are identified as appropriate in accordance with State CEQA Guidelines Section 15126.2(b). Significant-and-unavoidable impacts are also summarized in Chapter 7, "Other CEQA Sections."

References: The full references associated with the parenthetical references found throughout Sections 4.2 through 4.13 can be found in Chapter 9, "References," organized by section number.

4.2 AESTHETICS

This section evaluates the potential environmental impacts that could result from implementation of the project on aesthetics and visual resources. It describes the existing visual character of the project area and identifies the state and local plans, policies, and regulations applicable to the project. The analysis identifies potential impacts of the project and identifies mitigation measures, where needed and feasible, for reducing environmental impacts.

4.2.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to aesthetics, light, and glare are applicable to the project.

STATE

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation. The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view. The nearest designated highway is State Route 180, located approximately 14 miles northeast of the project site (Caltrans 2018).

LOCAL

Fresno General Plan

The City of Fresno General Plan (2014a) includes the following relevant policies that pertain to aesthetic resources:

- Policy C-19-e: Working with utility companies the city will continue to pursue the undergrounding of overhead utilities as feasible.
- Policy MT-3-a Scenic Corridors: Implement measures to preserve and enhance scenic qualities along scenic corridors or boulevards, including:
  - Van Ness Boulevard – Weldon to Shaw Avenues
  - Van Ness Extension – Shaw Avenue to the San Joaquin River Bluff
  - Kearny Boulevard – Fresno Street to Polk Avenue
  - Van Ness/Fulton couplet – Weldon Avenue to Divisadero
  - Butler Avenue – Peach to Fowler Avenues
  - Minnewawa Avenue – Belmont Avenue to Central Canal
  - Huntington Boulevard – First Street to Cedar Avenue
  - Sheperd Avenue – Friant Road to Willow Avenue
  - Audubon Drive – Blackstone to Herndon Avenues
  - Friant Road – Audubon to Millerton Roads

- Tulare Avenue – Sunnyside to Armstrong Avenues
- Ashland Avenue – Palm to Maroa Avenues

Fresno Municipal Code

Section 15-2015 Outdoor Lighting and Illumination
This section of the Fresno Municipal Code establishes standards to prevent spillover illumination or glare onto adjoining properties and prohibit interference with normal operation of adjacent property. Pursuant to this section, all outdoor lighting shall be shielded; meet the Illuminating Engineering Society of North America (IESNA) criteria for luminaries; and not exceed 25 feet in height.

4.2.2 Environmental Setting

VISUAL CHARACTER

Visual quality is the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The project site is located west of the urbanized area of Fresno in a topographically flat area characterized mostly by farmland (Figures 4.2-1 and 4.2-2). Land uses surrounding the project site include vineyards, orchards, and row crops to the north and east, Dry Creek Canal (an irrigation canal maintained by the Fresno Irrigation District) to the south (Figure 4.3-3), and electrical and industrial facilities including the RWRF to the west (characterized by paved parking areas, small maintenance buildings, and landscape trees and shrubs) (Figure 4.3-4) and a PG&E substation to the northeast of the site (characterized by rows of metal poles, electrical wires, and other electrical equipment). The 20-acre project site is flat and consists primarily of actively cultivated cotton. The northwest corner of the site is not cultivated, but the soil has been disturbed. There are no structures on the project site. Because the surrounding project area is dominated by agricultural land, the visual character of the project site is not considered unique or distinctive.

Source: Ascent 2018

Figure 4.2-1 Grassland in the Southern Portion of the Project Site, Looking North

Source: Ascent 2018

Figure 4.2-2 Views of Cotton in Cultivation on Project Site, Looking West

Source: Ascent 2018

Figure 4.2-3 Dry Creek Canal South of the Project Site

Source: Ascent 2018

Figure 4.2-4 Fresno-Clovis RWRF West of the Project Site

SCENIC CORRIDORS AND VISTAS

Scenic corridors are considered an enclosed area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or series of points along a linear transportation route. Scenic vistas are generally considered to be locations from which the public can experience unique and exemplary high-quality views, including panoramic views of great breadth and depth, often from elevated vantage points.

The City of Fresno General Plan Policy MT-3-a identifies scenic corridors and boulevards within the city; however, the nearest scenic corridor is approximately 1.75 miles north of the site and none of the scenic corridors are visible from the project site. According to the City of Fresno General Plan Master Environmental Impact Report (MEIR), typical scenic vistas are locations where views of rivers, hillsides, and open space areas can be obtained as well as locations where valued urban landscape features can be viewed in the distance. According to the MEIR, the City has not identified or designated scenic vistas, but the MEIR acknowledges that scenic vistas may be present within the city, such as views of the San Joaquin River along the northern boundary of the city and the Sierra Nevada Mountain range (City of Fresno 2014b:5.1-1). None of these features are distinctly visible from the project site.

SCENIC ROADWAY

A scenic road is defined as a highway, road, drive, or street that provides opportunities for the enjoyment of natural and human-made scenic resources, in addition to its transportation function. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. There are no officially designated State Scenic Highways, or eligible State Scenic Highways, located in the vicinity of the project site. The nearest designated highway is State Route 180, located approximately 14 miles northeast of the project site (Caltrans 2018). In addition, as discussed above, none of the scenic corridors designated by the City are visible from the project site.

LIGHT AND GLARE

The project site is undeveloped and is, therefore, void of light and glare sources, which is also true of most of the surrounding agricultural properties. However, the adjacent RWRF includes exterior lighting around buildings, facilities, and surface parking lot, and there are a few rural residences in the area that have minor exterior (security) lighting.

4.2.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Characterization of visual changes and determination of whether they are considered adverse are highly subjective undertakings. Any two people can draw very different conclusions about the nature and severity of visual changes. Evaluation of potential aesthetic resource impacts are based on review of site photos and documents pertaining to the project site including the *City of Fresno General Plan* (2014a), *General Plan MEIR* (2014b), and the Fresno Municipal Code. Potential aesthetic impacts of the Rendering Plant Relocation Project were determined through a professionally-accepted practice that considers three primary factors: (a) the existing scenic quality of an area; (b) the level of viewer exposure and concern regarding visual change; and (c) the level of actual visual change caused by a project as seen by a given viewer group. A substantial adverse effect would occur when viewers with high levels of overall visual sensitivity (i.e., high viewer concern and visual exposure, in settings of high existing visual quality) encounter diminished scenic quality, substantial visual change, or scenic view obstruction as a result of a project.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on aesthetics, light, and glare if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway;
- in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

Views of the project site and surrounding area are dominated by farmland and the RWRF. There are no scenic vistas within the project site or visible from the project site. As discussed above, the City has not identified or designated scenic vistas. Therefore, the proposed development of the site with industrial facilities would not adversely affect a scenic vista, and this issue will not be discussed further.

There are no officially designated State scenic highways, eligible State scenic highways, located in the vicinity of the project site. The nearest designated highway is State Route 180, located approximately 14 miles northeast of the project site, with no views of the project site. No impacts to scenic resources within a State scenic highway would occur, and therefore, this topic will not be discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.2-1: Degrade Existing Visual Character or Quality

The project would substantially alter the visual character of the project site from active farmland to industrial development; however, there are other industrial facilities in the vicinity and the visual character of the project site is not unique or distinctive relative to the visual character of the surrounding region. Further, the project would include landscaping features which would soften the overall appearance of the industrial facility. This impact would be **less than significant**.

The visual character of the project site is dominated by farmland and adjacent industrial facilities. Farmland surrounds the project site to the north, east, and south, a PG&E substation is located to the northeast, and the RWRF is located to the west. Because the project site is located adjacent to the RWRF and PG&E substation, development of the project site with industrial facilities would be consistent with surrounding facilities and would not substantially alter the visual character of the project area; however, the proposed development would substantially alter the visual character of the project site from primarily active farmland to industrial development. As mentioned above under Section 4.2.2, "Environmental Setting," the visual character of the project site is not unique or distinctive relative to the visual character of the surrounding region, which is also dominated by farmland. Furthermore, the proposed project would include landscaping as well as large sections of undeveloped areas, which would soften the industrial character. This impact would be **less than significant** because, although the project would substantially change the character of the project site itself, the change would not be a substantial degradation; the visual character of the site is not unique to the region and proposed landscaping and undeveloped areas would soften the industrial character of the site.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.2-2: Create a Substantial New Source of Light and/or Glare

Although not considered a major source of daytime glare, the project would add metal and other reflective surfaces associated with the rendering facilities and parked cars in the parking lot. In addition, the project would include nighttime lighting that could result in skyglow and light pollution. This would be a **potentially significant** impact.

Although not considered a major source of daytime glare, the project would add metal and other reflective surfaces associated with the rendering facilities and parked cars in the parking lot. These industrial facilities would also include exterior night lighting, including parking lot lighting, used during nighttime operation. The addition of reflective surfaces would increase daytime glare on the project site, which is void of light and glare sources. However, because the project site is adjacent to the RWRF and PG&E substation that include sources of daytime glare (electrical facilities and parked vehicles), and because the project would not add a major source of daytime glare, the environmental effect would not be substantial. The project facilities would also include exterior nighttime lighting, including parking lot lighting, used during nighttime operation. Although the adjacent RWRF as well as scattered rural residences are existing sources of nighttime lighting, the addition of nighttime lighting from the project could result in skyglow and light pollution if lights are cast in an upward direction. This would be a **potentially significant** impact.

Mitigation Measure 4.2-2: Prepare a Lighting Plan

A detailed lighting plan shall be developed by the applicant that demonstrates that all exterior lighting is directed downward and includes full shielding to minimize light pollution and to minimize light spillage onto adjacent properties. All lighting shall be consistent with International Dark Sky Standards (IDSS) and IESNA criteria for luminaries. The City's Development and Resource Management will review and approve the lighting plan before issuance of building permits.

Significance after Mitigation

Implementation of Mitigation Measure 4.2-2 would minimize light pollution and skyglow potential by requiring all exterior lighting to be shielded and downward facing, which focuses light on the ground and away from the night sky. This would reduce the impact to a **less-than-significant** level.

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4.3 AGRICULTURAL RESOURCES

This section describes existing agricultural resources on site, including identification of any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The analysis includes a description of the existing environmental conditions, the methods used for assessment, the potential direct and indirect impacts of project implementation on agricultural resources.

4.3.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to agricultural resources apply to the project.

STATE

California Department of Conservation Farmland Mapping and Monitoring Program

Important Farmland in California is classified and mapped according to the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP). Authority for the FMMP comes from Government Code Section 65570(b) and Public Resources Code Section 612. Government Code Section 65570(b) requires the DOC to collect or acquire information on the amount of land converted to or from agricultural use for every mapped county and to report this information to the Legislature. Public Resources Code Section 612 requires the DOC to prepare, update, and maintain Important Farmland Series Maps and other soils and land capability information.

The California Land Conservation Act of 1965

The California Land Conservation Act of 1965, or Williamson Act, preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts. Private landowners voluntarily restrict their land to agricultural and compatible open-space uses under minimum 10-year rolling term contracts. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

LOCAL

Fresno General Plan

The *Fresno General Plan* (City of Fresno 2014a) contains the following policies that are applicable to agricultural resources for the proposed project:

- **Policy RC-9-c:** Farmland Preservation Program. In coordination with regional partners or independently, establish a Farmland Preservation Program. When Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is converted to urban uses outside City limits, this program would require that the developer mitigate the loss of such farmland consistent with the requirements of CEQA. The Farmland Preservation Program shall provide several mitigation options that may include, but are not limited to the following: Restrictive Covenants or Deeds, In Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, or any other mitigation method that is in compliance with the requirements of CEQA. The Farmland Preservation Program may be modeled after some or all of the programs described by the California Council of Land Trusts.

4.3.2 Environmental Setting

Fresno County is characterized as a mature agricultural area, with a well-defined pattern of farming activities. Much of the land under agricultural operations is devoted to relatively stable crops such as orchards and vineyards. The primary crops within Fresno County include fruits and nuts, livestock and poultry, vegetable crops, and field crops. A significant portion of the Fresno County economy is based on the agricultural sector, both in direct farming and related food processing, storage, and shipping (City of Fresno 2014a). In 2017, the highest grossing agriculture crops were fruit and nut crops, livestock, and vegetables (Fresno County 2017).

Much of the area surrounding the project site is in agricultural use (vineyards, orchards, and various row crops), and few agricultural residences are located in the vicinity. However, none of the lands surrounding the project site are subject to Williamson Act Contract, or zoned for agricultural use (City of Fresno 2014b).

FARMLAND CLASSIFICATION

The State of California maps and classifies farmland through the DOC FMMP. Classifications are based on a combination of physical and chemical characteristics of the soil and climate that determine the degree of suitability of the land for crop production. The classifications under the FMMP are as follows:

- Prime Farmland—land that has the best combination of features for the production of agricultural crops;
- Farmland of Statewide Importance—land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops, but that has more limitations than Prime Farmland, such as greater slopes or less ability to store soil moisture;
- Unique Farmland—land of lesser quality soils used for the production of the state's leading agricultural cash crops;
- Farmland of Local Importance—land of importance to the local agricultural economy;
- Grazing Land—existing vegetation that is suitable for grazing;
- Urban and Built-Up Land—land occupied by structures in density of at least one dwelling unit per 1.5 acres;
- Land Committed to Nonagricultural Use—vacant areas; existing land that has a permanent commitment to development but has an existing land use of agricultural or grazing lands; and
- Other Land—land not included in any other mapping category, common examples of which include low-density rural developments, brush, timber, wetland, and vacant and nonagricultural land surrounded on all sides by urban development.

CEQA Section 21095 and CEQA Guidelines Appendix G, together, define Prime, Unique, and Farmland of Statewide Importance as "Important Farmland," the conversion of which may be considered significant. Local jurisdictions can further consider other classifications of farmland as important, and can also utilize an agricultural land evaluation and site assessment model to determine farmland importance and impacts from conversion.

EXISTING FARMLAND

The area of disturbance is approximately 20 acres located immediately north of Dry Creek Canal, south of West Jensen Avenue, and west of South Cornelia Avenue. The project site is within the city limits, but not within the city proper, and is east of the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) within a large island of incorporated, City-owned property. The majority of the site is designated by the DOC's FMMP as Farmland of Statewide Importance, with two small areas designated as Prime Farmland (Figure 4.3-1). The site is actively cultivated

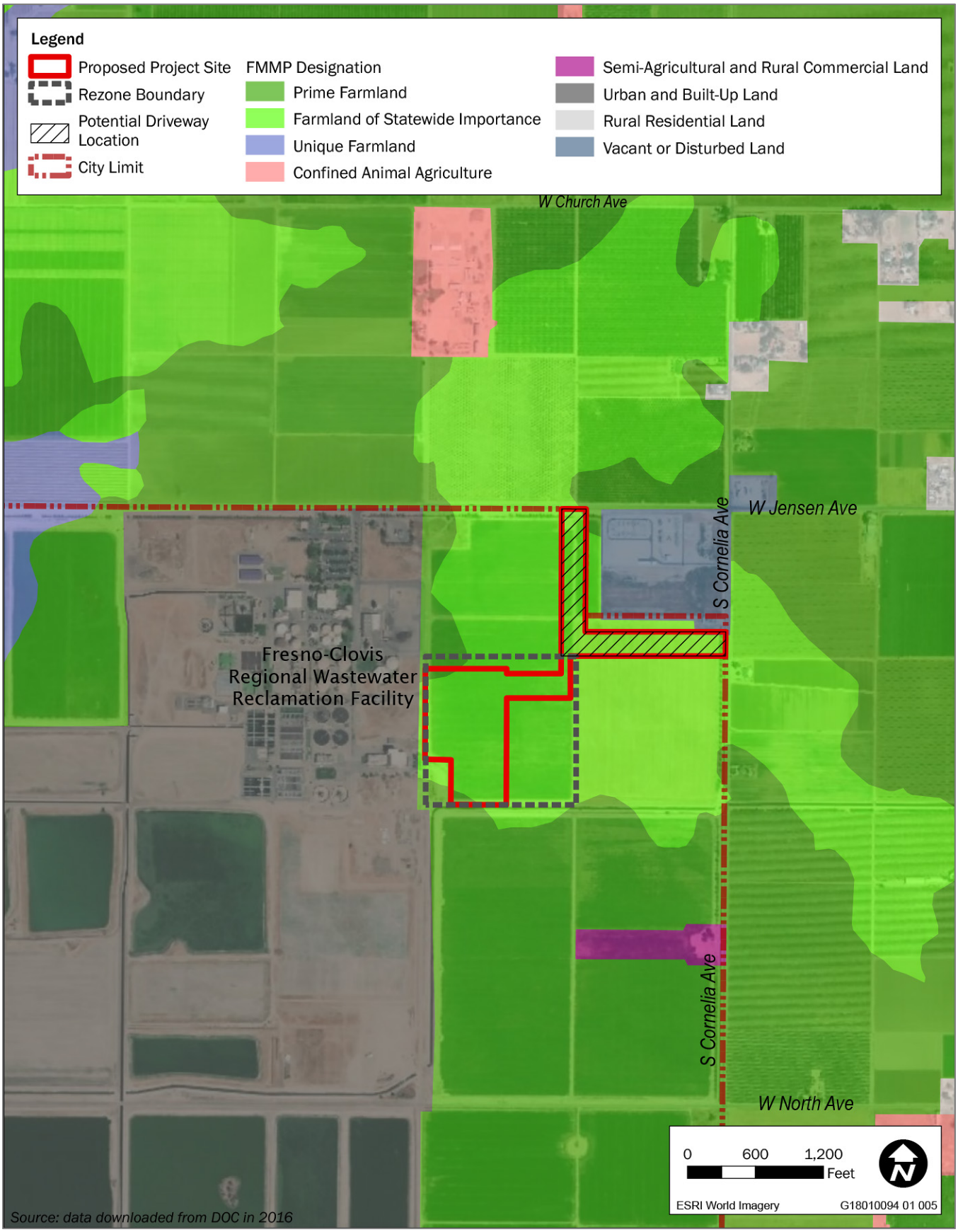

Figure 4.3-1 Important Farmland

in cotton, and there are no structures on site. The project site is not subject to Williamson Act Contract and is not zoned for agricultural use (City of Fresno 2014b).

Adjacent land to the west is designated as "Public Facility" and contains the RWRF. Adjacent land to the south, east, and north are also designated as "Public Facility," but these lands are in active agriculture.

4.3.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

To evaluate the potential impacts of the proposed project on agricultural resources, the type and degree of agricultural resources that would be lost/converted were considered in relation to FMMP designations of lands within the project site and any policies and programs related to the preservation of agricultural resources. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, regulations, and ordinances.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the project would have a significant adverse effect related to agricultural resources if it would:

- 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;
- conflict with existing zoning for agricultural use or a Williamson Act contract; or
- involve other changes in the existing environment, which, because of their location or nature, could result in conversion of Farmland to non-agricultural use.

ISSUES NOT DISCUSSED FURTHER

Agricultural Zoning and Williamson Act Contracts

The project site is not subject to a Williamson Act Contract (City of Fresno 2014b), nor is it designated or zoned for agricultural use. The project includes a General Plan Amendment and Rezone of approximately 40 acres designated as "Public Facility" and zoned "Public and Institutional" to the "Heavy Industrial" land use designation and "Industrial Heavy" zoning classification. Therefore, there would be no impact relative to conflicts with agricultural zoning or Williamson Act contracts. These issues are not evaluated further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.3-1: Convert Agricultural Uses, Including Lands Designated as Important Farmlands, to Non-Agricultural Use or Involve Changes in the Existing Environment That Could Result in Conversion of Important Farmland to Non-Agricultural Use

The project would convert Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. As part of the General Plan Update process, the City of Fresno General Plan Master Environmental Impact Report (MEIR) evaluated the potential for future development associated with the General Plan to result in impacts related to conversion of Important Farmland to non-agricultural use. The General Plan identified policies to reduce potential impacts to farmland conversion outside the city limits. Although the project site is on city-owned land and is within the city limits, it is not within the city proper and is surrounded primarily by agricultural uses. Because the project site is outside the city proper in an area dominated by farmland and agricultural operations, and the project would result in a permanent conversion of Important Farmland. This impact would be **significant**.

The project would convert approximately 20 acres of Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. The project site is designated as Public Facility in the Fresno General Plan (Figure 3-4), and is zoned Public and Institutional (Figure 3-5). The Public Facility designation allows for public facilities such as City and County buildings, schools, colleges, municipal airports, hospitals, fire and police stations, recycling centers, sewage treatment plants, parks, trails, recreational centers, and golf courses. As part of the General Plan Update process, the City's MEIR evaluated the potential for future development associated with the General Plan to result in impacts related to conversion of Important Farmland to non-agricultural use. The General Plan identified policies to reduce potential impacts to farmland conversion, such as Policy RC-9-c, which mandates establishing a preservation program when farmland is converted outside of the city limit (but inside the sphere of influence). This would primarily apply to annexations of land into the city. Although the project site is located within the city limit and Policy RC-9-c would typically not apply, the site is located within a large island of incorporated, City-owned property not within the city proper. This policy is primarily intended to exclude land within the city proper, which is generally planned for urban development and where agricultural uses may conflict with other existing land uses. The project site, while it is within the city limit, is distant from the city proper in an area that is dominated by farmland and agricultural operations in the unincorporated county. The MEIR concluded that implementation of the General Plan would result in a significant impact related to farmland conversion and that no mitigation measures are available (beyond implementation of General Plan policies) to reduce the impact to a less-than-significant level. The MEIR ultimately concluded that the impact is significant and unavoidable (City of Fresno 2014b:p. 5.2-1). City Council reviewed the MEIR as part of its decision to approve the General Plan and adopted a statement of overriding considerations for all significant and unavoidable impacts, including the impact related to conversion of Important Farmland.

Because the project site is outside the city proper in an area dominated by farmland and agricultural operations, this site is uniquely situated, and this impact would be significant. Therefore, applying mitigation that is consistent with the intent of Policy RC-9-c is appropriate in this case despite the city limit exception.

Mitigation Measure 4.3-1: Farmland Preservation

Consistent with the Fresno General Plan Policy RC-9-c the project shall provide in-kind or similar resource value protection for land similar to the project site at a ratio of 1:1. This protection may consist of the establishment of farmland easements, or other similar mechanism and shall be implemented before issuance of the first grading permit for development. The City will identify the type of easement and location to be used for mitigation and will be the implementing agent for this mitigation.

Significance after Mitigation

While implementation of Mitigation Measure 4.3-1 could reduce the impact on Important Farmland by preserving in perpetuity a similar acreage and type of farmland, once farmland is removed through development, it is irretrievably lost to future generations. Therefore, the impact would remain **significant and unavoidable.**

Impact 4.3-2: Result in Other Loss or Conversion of Existing Agricultural Uses

Adjacent lands support active agriculture and perceived conflicts may result when moving sensitive land uses near agriculture. However, the rendering plant is an industrial facility that is not considered a sensitive receptor. Therefore, the project would not result in changes in the existing environment that could result in the conversion of other farmland to non-agricultural uses. This impact would be **less than significant**.

Adjacent lands to the west are designated as Public Facility and contain the RWRF. Adjacent land to the south, east, and north are also designated as Public Facility, but these lands are in active agriculture. Agricultural uses often involve application of pesticides, herbicides, and fertilizers, which may produce odors or may be perceived as hazardous by more sensitive land uses, such as schools and residences. Sometimes these perceived conflicts may result in complaints and, ultimately, limitations to the agricultural operations to reduce potential exposure of sensitive uses to odors and chemicals. However, because of the industrial nature of activities associated with the rendering facility, the facility is not considered a sensitive use that could be adversely affected by or conflict with agricultural operations.

Also, because the rendering facility is not a major employment generating use, a major housing development, or a major regional visitor attraction, relocating the rendering facility to the project site would not increase development pressure in the vicinity and would consequently not result in indirect impacts related to farmland conversion. Thus, although the project site would be developed with a non-agricultural purpose, the project would not result in changes in the existing environment that could result in conversion of other farmland to non-agricultural uses. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

4.4 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by the proposed project. Mitigation measures are recommended as necessary to reduce significant air quality impacts to the extent feasible.

4.4.1 Regulatory Setting

Air quality within the project area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of other programs. The agencies responsible for improving the air quality within the air basins are discussed below.

FEDERAL

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

Criteria Air Pollutants

The CAA required EPA to establish national ambient air quality standards (NAAQS). As shown in Table 4.4-1, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with aerodynamic diameter of 10 micrometers or less (PM_{10}) and fine particulate matter with aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The primary standards protect public health and the secondary standards protect public welfare. The CAA also required each state to prepare a State implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table 4.4-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS)[a,b]	National (NAAQS)[c]	
			Primary[b,d]	Secondary[b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm[f] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hour	—	35 µg/m^3	Same as primary standard
Lead[f]	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	—	—
	Rolling 3-Month Average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride[f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

a California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

c NAAQS (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

d Primary NAAQS: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

e Secondary NAAQS: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016

Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 4.4-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and the California Air Resources Board (CARB) regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for toxics to limit emissions.

STATE

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California ambient air quality standards (CAAQS) (Table 4.4-1).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources and provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts a control measure for applicable sources. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology to minimize TAC emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

AB 617 of 2017 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for greenhouse gas (GHG) emissions. AB 617 imposes a new state-mandated local program to address non-vehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. AB 617 requires CARB to identify high-pollution areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air districts review individual sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Sierra Club v. County of Fresno

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno (226 Cal.App.4th 704)*. The Case reviewed the long-term, regional air quality analysis contained in the Environmental Impact Report (EIR) for the proposed Friant Ranch development. The project is located in unincorporated Fresno County within the San Joaquin Valley Air Basin (SJVAB), an air basin currently in nonattainment for multiple NAAQS and CAAQS, including ozone and PM. The Court ruled that the air quality analysis failed to adequately disclose the nature and magnitude of long-term air quality impacts from emissions of criteria pollutants and precursors "in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises." The Court noted that the air quality analysis did not provide a discussion of the foreseeable adverse effects of project-generated emissions on Fresno County's likelihood of exceeding the NAAQS and CAAQS for criteria air pollutants nor did it explain a connection between the project's emissions and deleterious health impacts. Moreover, as noted by the Court, the EIR did not explain why it was not "scientifically possible" to determine such a connection. The Court concluded that "because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time," the EIR's discussion of air quality impacts was inadequate.

LOCAL

San Joaquin Valley Air Pollution Control District

Criteria Air Pollutants

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the primary agency responsible for planning to meet federal and State ambient air quality standards in San Joaquin County. SJVAPCD works with other local air districts in the region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the federal Clean Air Act requirements to attain and maintain the federal ozone standard.

SJVAPCD also enforces air quality regulations, educates the public about air quality, and implements a number of programs to provide incentives for the replacement or retrofit of older diesel engines and to influence land use development in the SJVAB.

All projects are subject to adopted SJVAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Regulation VIII—Fugitive Dust PM_{10} Prohibitions:** Rules 8011-8081 are designed to reduce PM_{10} emissions (predominantly dust and dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, and landfill operations.

- **Rule 2010—Permits Required:** This rule applies to anyone who plans to or does operate, construct, alter, or replace any source operation that may emit air contaminants or may reduce the emission of air contaminants.

- **Rule 2201—New and Modified Stationary Source Review Rule:** This rule applies to all new stationary sources and all modifications of existing stationary sources. They are subject to SJVAPCD permit requirements if, after construction, they emit or may emit one or more affected pollutant.

- **Rule 2550—Federally Mandated Preconstruction Review for Major Sources of Air Toxics:** This rule applies to applications to construct or reconstruct a major air toxics source with Authority to Construct issued on or after June 28, 1998.

- **Rule 3135—Dust Control Plan Fee:** This rule requires applicants to submit a fee in addition to a dust control plan. The purpose of this fee is to recover SJVAPCD's cost for reviewing such plans and conducting compliance inspections.

- **Rule 4002—National Emissions Standards for Hazardous Air Pollutants:** This rule applies to all sources of hazardous air pollution and requires them to comply with the standards, criteria, and requirements set forth therein.

- **Rule 4101—Visible Emissions:** This rule prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.

- **Rule 4102—Nuisance:** This rule applies to any source operation that emits or may emit air contaminants or other materials. If such emissions create a public nuisance, the owner/operator could be in violation and be subject to enforcement action by SJVAPCD.

- **Rule 4601—Architectural Coatings:** This rule limits volatile organic compounds from architectural coatings by specifying storage, cleanup, and labeling requirements for architectural coatings.

- **Rule 9510—Indirect Source Review:** This rule was adopted to reduce the impacts of growth in emissions from all new development in the San Joaquin Valley. The purposes of Rule 9510 are to (1) fulfill SJVAPCD's emissions reduction commitments in the PM_{10} and ozone attainment plans, (2) reduce emissions form development projects through design features and on-site measures, and (3) reduce emissions from development projects through off-site measures.

  Applicability of Rule 9510 is determined by project type and size based on screening levels determined by SJVAPCD. Projects that exceed their respective screening level must file an Air Impact Assessment (AIA) application with SJVAPCD. The AIA lists all the attributes of a project, including on-site mitigation measures, so that SJVAPCD can estimate its emissions and assess the appropriate ISR fee for offsetting project-related emissions.

  Rule 9510 requires applicants to provide information that enables SJVAPCD to quantify construction, area-source, and operational oxides of nitrogen (NO_X) and exhaust PM_{10} emissions. Rule 9510 requires emissions of

construction exhaust to be reduced by 20 percent for NO_X and 45 percent for PM_{10} when compared to the statewide fleet average. For operations, emissions of NO_X must be reduced by 33.3 percent and emissions of exhaust PM_{10} must be reduced by 50 percent; the reductions may occur over 10 years. The applicant may reduce both the construction and operations emissions by implementing on-site measures and/or by paying an off-site fee. However, if the initial calculation shows that emissions would be less than 2 tons per year of NO_X or exhaust PM_{10}, then emission reduction measures are not required.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under SJVAPCD Rule 2201 ("New and Modified Stationary Source Review"), Rule 2520 ("Federally Mandated Operating Permits"), Rule 4001 ("New Source Performance Standards"), Rule 9110 ("General Conformity"), and Rule 9510 ("Indirect Source Review"), all sources that possess the potential to emit TACs are required to obtain permits from the District. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new-source-review standards and air-toxics control measures. SJVAPCD limits emissions and public exposure to TACs through a number of programs. SJVAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generate citizen complaints to local governments and SJVAPCD. SJVAPCD's Rule 4102 ("Nuisance") regulates odorous emissions.

City of Fresno General Plan

The City of Fresno General Plan includes the following policies related to air quality (City of Fresno 2014a):

- **Policy UF-12-d**: Appropriate Mixed-Use. Facilitate the development of vertical and horizontal mixed uses to blend residential, commercial, and public land uses on one site or adjacent sites. Ensure land use compatibility between mixed-use districts in Activity Centers and the surrounding residential neighborhoods.
- **Policy RC-4-a**: Support Regional Efforts. Support and lead, where appropriate, regional, State and federal programs and actions for the improvement of air quality, especially the SJVAPCD's efforts to monitor and control air pollutants from both stationary and mobile sources and implement Reasonably Available Control Measures in the Ozone Attainment Plan.
- **Policy RC-4-b**: Conditions of Approval. Develop and incorporate air quality maintenance requirements, compatible with Air Quality Attainment and Maintenance Plans, as conditions of approval for General Plan amendments, community plans, Specific Plans, neighborhood plans, Concept Plans, and development proposals.
- **Policy RC-4-c**: Evaluate Impacts with Models. Continue to require the use of computer models used by SJVAPCD to evaluate the air quality impacts of plans and projects that require such environmental review by the City.
- **Policy RC-4-e**: Support Employer-Based Efforts. Support and promote employer implementation of staggered work hours and employee incentives to use carpools, public transit and other measures to reduce vehicular use and traffic congestion.
- **Policy RC-4-f**: Municipal Operations and Fleet Actions. Continue to control and reduce air pollution emissions from vehicles owned by the City operations and municipal operations and facilities by undertaking the following:
  - Expand the use of alternative fuel, electric, and hybrid vehicles in City fleets.
  - Create preventive maintenance schedules that will ensure efficient engine operation.

- Include air conditioning recycling and charging stations in the City vehicle maintenance facilities, to reduce freon gases being released into the atmosphere and electrostatic filtering systems in City maintenance shops, when feasible or when required by health regulations.
- Use satellite corporation yards for decentralized storage and vehicle maintenance.
- Convert City-owned emergency backup generators to natural gas fuels whenever possible, and create an advanced energy storage system.

4.4.2 Environmental Setting

The project site is located in the City of Fresno within Fresno County, which is within the SJVAB. The SJVAB also includes all of Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties and the valley portion of Kern County. Ambient concentrations of air pollutants are determined by the levels of emissions released by pollutant sources and the ability of the atmosphere to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

TOPOGRAPHY, METEOROLOGY, AND CLIMATE

The SJVAB, which occupies the southern half of the Central Valley, is approximately 250 miles long and, on average, 35 miles wide. The SJVAB is a well-defined climatic region with distinct topographic features on three sides. The Coast Ranges, which have an average elevation of 3,000 feet, are located on the western border of the SJVAB. The San Emigdio Mountains, which are part of the Coast Ranges, and the Tehachapi Mountains, which are part of the Sierra Nevada, are both located on the south side of the SJVAB. The Sierra Nevada forms the eastern border of the SJVAB. The northernmost portion of the SJVAB is San Joaquin County. No topographic feature delineates the northern edge of the basin. The SJVAB can be considered a "bowl" open only to the north.

The SJVAB is basically flat with a downward gradient in terrain to the northwest. Air flows into the SJVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento-San Joaquin Delta (Delta) from the San Francisco Bay area. The mountains surrounding the SJVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. As a result, the SJVAB is highly susceptible to pollutant accumulation over time.

The inland Mediterranean climate type of the SJVAB is characterized by hot, dry summers and cool, rainy winters. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Daily summer high temperatures often exceed 100 degrees Fahrenheit (°F) (SJVAPCD 2015:17). In winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and storms, and temperatures in the 30s (SJVAPCD 2015:17).

Most of the precipitation in the SJVAB occurs as rainfall during winter storms. The rare occurrence of precipitation during the summer is in the form of convective rain showers (showers caused due to rising warm air). The amount of precipitation in the SJVAB decreases from north to south primarily because the Pacific storm track often passes through the norther portion of the SJVAB, which the southern portion remains protected by the Pacific high-pressure cell.

The winds and unstable atmospheric conditions associated with passing winter storms result in periods of low air pollution and excellent visibility. Precipitation and fog tend to reduce or limit some pollutant concentrations. For instance, clouds and fog block sunlight, which is required to fuel photochemical reactions that form ozone. Because CO is partially water soluble, precipitation and fog also tend to reduce CO concentrations in the atmosphere. In addition, PM_{10} can be washed from the atmosphere through wet deposition processes (e.g., rain). However, between

winter storms, high pressure and light winds lead to the creation of low-level temperature inversions and stable atmospheric conditions, resulting in the concentrations of air pollutants (e.g., CO and PM_{10}).

Summer is considered the ozone season in the SJVAB. This season is characterized by poor air movement in the mornings and by longer daylight hours, which provide a plentiful amount of sunlight to fuel photochemical reactions between reactive organic gases (ROG) and NO_X, which result in ozone formation. The predominant wind direction is from the northwest (Western Regional Climate Center 2017).

CRITERIA AIR POLLUTANTS

Concentrations of emissions of criteria air pollutants indicate the quality of the ambient air. Brief descriptions of key criteria air pollutants in the SJVAB and their health effects are provided below. Criteria air pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. However, ozone, PM_{10}, and $PM_{2.5}$ are the criteria air pollutants of primary concern in this analysis due to their nonattainment status with respect to the applicable NAAQS and/or CAAQS.

Ozone

Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between ROG and NO_X. This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful air pollutant, because of its effects on people and the environment, and is the main ingredient in smog (EPA 2016).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2016). Emissions of the ozone precursors ROG and NO_X have decreased over the past two decades statewide because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2013).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form (NO_2). The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2012).

Acute health effects of exposure to NO_X includes coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, or pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2016).

Particulate Matter

PM_{10} is emitted directly into the air, and includes fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, as well as particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2013). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions in the SVAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} are projected to remain relatively constant through 2035. Direct emissions of $PM_{2.5}$ have steadily declined in the SVAB between 2000 and 2010 and then are projected to increase very slightly through 2035. Emissions of $PM_{2.5}$ in the SJVAB are primarily generated by the same sources as emissions of PM_{10} (CARB 2013).

Acute health effects of PM_{10} exposure include breathing and respiratory symptoms, aggravation of existing respirator and cardiovascular diseases, and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (EPA 2016).

MONITORING STATION DATA AND ATTAINMENT DESIGNATIONS

The attainment status of criteria air pollutants with respect to the NAAQS and CAAQS in Fresno County are shown in Table 4.4-2.

Table 4.4-2 Attainment Status Designations for Fresno County

Pollutant	Federal Standard	State Standard
Ozone	No Federal Standard (1-hour)[1]	Nonattainment (1-hour) Classification-Serious
	Nonattainment (8-hour) Classification=Severe[2]	Nonattainment (8-hour)
Respirable particulate matter (PM_{10})	Attainment[3]	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Nonattainment (24-hour)[4]	Nonattainment
Carbon monoxide (CO)	Unclassified/Attainment	Unclassified/Attainment
Nitrogen dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur dioxide (SO_2)	Unclassified/Attainment	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates		Attainment
Visibly Reducing Particles		Unclassified
Vinyl Chloride		Attainment

Notes:
[1] Effective June 15, 2005, the EPA revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.
[2] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved SJVAB reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
[3] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.
[4] The SJVAB is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the SJVAB as nonattainment for the 2006 $PM_{2.5}$ NAAQS on November 13, 2009 (effective December 14, 2009).
Source: SJVAPCD 2012

Criteria air pollutant concentrations are measured at several monitoring stations in the SJVAB. Table 4.4-3 summarizes the air quality data measured at monitoring stations near the project site during the last 3 years (2015-2017). The Fresno-Drummond Street station is the closest station to the project site with recent data for ozone and PM_{10}. The Fresno-Garland station is the closest station to the project site with recent data for $PM_{2.5}$.

Both CARB and EPA use monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized above in Table 4.4-2).

Table 4.4-3 Summary of Annual Data on Ambient Air Quality (2015-2017)[1]

	2015	2016	2017
Ozone			
Maximum concentration (1-hr/8-hr avg, ppm)	0.135/0.110	0.117/0.093	0.125/0.103
Number of days state standard exceeded (1-hr/8-hr)	12/41	13/60	8/31
Number of days national standard exceeded (8-hr)	39	59	29
Fine Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour µg/m^3)[2]	75.2	52.7	86.0
Number of days national standard exceeded (24-hour measured)[2]	20	16	31.1
Respirable Particulate Matter (PM_{10})			
Maximum concentration (µg/m^3)	120.7	88.3	115.6
Number of days state standard exceeded	80.3	98.9	111.6
Number of days national standard exceeded	0	0	0

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million
[1] Measurements from the Fresno-Drummond Street station for ozone, respirable particulate matter (PM_{10}).
[2] Measurements from the Fresno-Garland station for fine particulate matter ($PM_{2.5}$).
Source: CARB 2018

TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality,* the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM (CARB 2013:5-2 to 5-4). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on the engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate the concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, CARB estimated its health risk to be 390 excess cancer cases per million people in the SJVAB in the year 2000 (CARB 2009:5-67). Overall, statewide emissions of diesel PM are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2013:3-8).

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul 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 overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others many not have the same sensitivity to odors in general; and still others may not be sensitive to a specific substance but may have sensitivities to odors of other substances. In addition, 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., fast food

restaurant or coffee roaster). It is important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs when an alteration in the intensity.

Existing odor sources in the project vicinity include the adjacent Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF).

SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants.

There are several agricultural residences in the vicinity of the project area. The two nearest residences are located approximately 2,440 feet east of the site and the proposed stationary sources, both on the east side of South Cornelia Avenue. In addition, the proposed driveway location where delivery/haul trucks would enter/exit the site is located approximately 1,700 feet to the west of these same receptors.

4.4.3 Environmental Impacts and Mitigation Measures

This section describes the project's construction-related (short-term) and operation-related (long-term) effects on air quality. The discussion includes the criteria for determining the level of significance of the effects and a description of the methods and assumptions used to conduct the analysis.

SIGNIFICANCE CRITERIA

In its March 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (CEQA Guide), SJVAPCD provides evidence to support the development and applicability of its thresholds of significance for project-generated emissions of criteria air pollutants and precursors, which may be used at the discretion of a lead agency overseeing the environmental review of projects located within the SJVAB. As stated in the CEQA Guide, "a Lead Agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the Lead Agency to adopt such thresholds is supported by substantial evidence" (SJVAPCD 2015:63-64). CEQA-related air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health.

In consideration of new and more stringent NAAQS and CAAQS adopted since 2000, SJVAPCD identified numerical thresholds for construction and operational emissions of criteria air pollutants and precursors that would determine whether a project's discrete emissions would result in a cumulative, regional contribution (i.e., significant) to the baseline nonattainment status of the SJVAPCD. In developing thresholds of significance for individual project emissions, SJVAPCD analyzed emissions values against the SJVAPCD's Offset thresholds to ozone precursors, which, when applied, which prevent further deterioration of ambient air quality within the SJVAB. Thresholds for PM_{10} and $PM_{2.5}$ were adapted from the SJVAPCD's PM_{10} New Source Review offset thresholds (SJVAPCD 2015:82). Using these parameters, SJVAPCD has developed quantitative thresholds of significance for project-level CEQA evaluation that may be used to determine the extent to which a project's emissions of criteria air pollutants and precursors would contribute to the regional degradation of ambient air quality within the SJVAB.

Using federal and State guidance pertaining to TACs/HAPs in addition to the findings of several scientific studies, SJVAPCD developed cancer risk and non-cancer health hazard thresholds for TAC exposure. Unlike criteria air pollutants, there is no known safe concentration levels of TACs. Moreover, TAC emissions contribute to the deterioration of localized air quality and due to the dispersion characteristics of TACs, emissions do not cause

regional-scale air quality impacts. The SJVAPCD thresholds are designed to ensure that a source of TACs does not contribute to a localized, significant impact to existing or new receptors.

As such, for the purpose of this project, the following thresholds of significance are used to determine if project-generated emissions would produce a significant localized and/or regional air quality impact such that human health would be adversely affected.

Based on Appendix G of the State CEQA Guidelines and SJVAPCD recommendations, the project would result in a significant impact on air quality if it would:

- result in short-term construction-related emissions of criteria air pollutants or precursors that would violate an air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations, as described below:
  - cause construction-generated criteria air pollutant or precursor emissions to exceed the SJVAPCD-recommended threshold of 10 tons per year (TPY) for ROG and NO_X, 15 TPY for PM_{10} and $PM_{2.5}$, 100 TPY for CO, and 27 TPY for sulfur oxides (SO_X), or 100 pounds per day (lb/day) for all criteria air pollutants and precursors (i.e., ROG, NO_X, CO, SO_X, PM_{10}, $PM_{2.5}$);
- result in a net increase in the long-term regional criteria air pollutant or precursor emissions that would exceed the SJVAPCD-recommended threshold of 10 TPY for ROG and NO_X, 15 TPY for PM_{10} and $PM_{2.5}$, 100 TPY for CO, and 27 TPY for SO_X, or 100 lb/day for all criteria air pollutants and precursors (i.e., ROG, NO_X, CO, SO_X, PM_{10}, $PM_{2.5}$);
- result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the California 1-hour ambient air quality standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm;
- expose sensitive receptors to a substantial incremental increase in TAC emissions that exceed 20 in 1 million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1 or greater; or
- create objectionable odors affecting a substantial number of people.

METHODOLOGY

Criteria Air Pollutants and Precursors

Short-term construction-related and long-term operation-related (regional and local) impacts, as well as impacts from TACs and odors, were assessed in accordance with SJVAPCD-recommended methodologies.

Short-term construction-related emissions of criteria air pollutants and precursors were modeled using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Modeling was based on project-specific information (e.g., size, area to be graded, energy information) where available, reasonable assumptions based on typical construction activities, and default values in CalEEMod that are based on the project's location and land use type.

Construction emission estimates were based on anticipated construction activities and phases. Construction activities are expected to begin in early 2019 and to be complete in by 2021. Project construction would include five primary phases: grading and site preparation; utility installation and connection; roadway, driveway, and parking lot construction; building construction and equipment installation; and landscape installation. Construction equipment would vary by phase, but the entire construction process would include operation of the following types of equipment: graders, dozers, excavators, scrapers, water trucks, cranes, forklifts, generators, pavers, rollers, welders, and air compressors. Exhaust emissions would occur from the use of heavy-duty construction equipment, on-road vehicle, and fugitive dust would occur from earth movement activities.

Long-term operation-related emissions of criteria air pollutants and precursors were modeled using CalEEMod Version 2016.3.2 and off-model calculations based on energy consumption based on the project's co-location with the RWRF.

Mobile CO Impacts, Health Risk, and Odors

The potential for project-generated traffic to result in concentrations of CO that exceed NAAQS and CAAQS was evaluated using SJVAPCD-recommended screening criteria. The potential for CO hot-spots was further evaluated using a qualitative screening method recommended by SJVAPCD, as described in Impact 4.4-3 below.

Health risk from project-generated construction- and operation-related emissions of TACs were assessed qualitatively and quantitatively. This assessment is based on the location from which construction- or operation-related TAC emissions would be generated by the project relative to on-site sensitive receptors as construction occurs, as well as the duration during which TAC exposure would occur. The SJVAPCD's prioritization calculator was used to estimate the health risk from the project's construction activity, with diesel PM the primary pollutant of concern. The prioritization calculator was also used to estimate health risk from the use of a boiler during project operation. The prioritization calculator uses residential cancer risk normalization factors, based on modeling conducted by the Office of Environmental Health Hazard Assessment, that captures the 95th percentile of all normalization values generated by modeling of 44 different sources at approximately 500,000 receptors.

The assessment of odor-related impacts is based on the types of odor sources associated with implementation of the project and its location relative to on-site receptors as the project is constructed.

IMPACT ANALYSIS AND MITIGATION MEASURES

Impact 4.4-1: Short-Term Construction Emissions of Criteria Air Pollutants and Precursors (CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$)

Construction-related activities would result in project-generated emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ (a subset of PM_{10}) from site preparation (e.g., excavation, clearing), off-road equipment, material and equipment delivery trips, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Construction emissions of criteria air pollutants would not exceed any SJVAPCD mass emissions thresholds. Further, the project includes fugitive dust reduction measures consistent with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibition) and therefore would not result in substantial dust emissions. This impact would be **less than significant**.

Construction emissions are described as "short-term" or temporary in duration and may represent a significant impact on air quality. Construction-related activities would result in project-generated emissions of CO, NO_X. ROG, SO_X, PM_{10} and $PM_{2.5}$ (a subset of PM_{10}) from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust (e.g., PM_{10} and $PM_{2.5}$) emissions are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on- and offsite. Ozone precursor emissions of ROG and NO_X are associated primarily with construction equipment and on-road mobile exhaust and the application of architectural coatings. PM_{10} and $PM_{2.5}$ are also contained in vehicle exhaust.

To evaluate increases in project-generated emissions, CalEEMod was used to estimate annual criteria air pollutant and precursor emissions associated with the proposed heavy industrial land use of 44,600 square feet (sf). As shown in Table 4.4-4 below, the project would not exceed SJVAPCD thresholds of significance for criteria air pollutants or contribute substantially to the existing nonattainment status of the SJVAB. Further, daily emissions were modeled using CalEEMod and compared to the 100 pounds per day screening levels, as suggested by SJVAPCD, and are presented in Table 4.4-5 below.

Table 4.4-4 Summary of Annual Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction (tons/year)

Construction Year	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_X
2019	0.3	2.2	0.2	0.2	2.0	<0.1
2020	0.6	1.8	0.2	0.1	1.8	<0.1
SJVAPCD Threshold of Significance	10	10	15	15	100	27
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; N/A= not applicable; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_X = sulfur oxides; SJVAPCD = San Joaquin Valley Air Pollution Control District.

See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

Table 4.4-5 Summary of Modeled Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction Activities (pounds per day)

Construction Year	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_X
2019	3	20	6	3	16	<0.1
2020	20	16	1	1	16	<0.1
SJVAPCD Threshold of Significance	100	100	100	100	100	100
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; N/A= not applicable; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_X = sulfur oxides; SJVAPCD = San Joaquin Valley Air Pollution Control District.

See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2019

The emissions level of ROG and NO_X do not exceed the SJVAPCD-recommended thresholds of significance and would not contribute to an increase in nonattainment days in the SJVAB for ozone. As summarized above in "Environmental Setting," groundborne ozone is a secondary pollutant derived from the oxidation of ROG and NO_X in the presence of sunlight. The SJVAB is currently in nonattainment for the national and State ozone standards; however, because construction-generated emissions would not exceed applicable thresholds, project-related emissions of ROG and NO_X would not exacerbate this existing adverse condition.

In addition, all construction activities within the SJVAPCD jurisdiction are required to comply with Regulation VIII Control Measures during the construction phase. As described in Chapter 3, "Project Description," the project would implement all applicable control measures during construction to reduce fugitive dust and exhaust emissions. These include watering of exposed surfaces twice daily, covering all haul trucks carrying dust or loose material, and cleaning dirt track-out from construction equipment daily.

By evaluating ROG and NO_X emissions against SJVAPCD's thresholds of significance, it is not foreseeable that the health complications associated with ozone exposure would be exacerbated by project-generated construction emissions. Dust emissions would not exceed thresholds and incorporation of requires dust suppression requirements would further reduce these emissions. Therefore, this impact would be **less than significant.**

Mitigation Measures

No mitigation is required for this impact.

Impact 4.4-2: Long-Term Operational Emissions of Criteria Air Pollutants and Precursors (ROG, SO_X, NO_X, CO, PM_{10} and $PM_{2.5}$)

The project would include 23 additional employees and 40 additional daily delivery trips, resulting in an increase in operational mobile-emissions related to implementation of the proposed project. The project would also result in additional stationary sources. These sources would be subject to the SJVAPCD permitting process that ensures emissions would not exceed SJVAPCD permit levels for criteria air pollutants and precursors. Therefore, implementation of the project would not result in long-term operational emissions of criteria air pollutants (ROG, NO_X, SO_X, CO, PM_{10}, or $PM_{2.5}$) that exceed SJVAPCD's thresholds of significance, violate an air quality standard, or contribute substantially to an existing or projected air quality violation. This would be a **less-than-significant** impact.

Operational activities related to the project would be similar to those of the existing rendering facility but would include an increase in processing capacity. Daily operations would increase from a processing capacity of 850,000 pounds per day to approximately 2 million pounds per day up to the maximum permitted 10 million pounds per week. The proposed expansion would result in 40 additional daily delivery truck trips and up to 23 new employees. The proposed facility floor area would total 44,600 sf, including a larger processing floor, stationary mechanical equipment (e.g., cooker, boiler, presser), and a truck shop/loading dock, approximately 16,800 sf larger than the existing facility. Emissions would be associated with mobile sources from worker commute and delivery trucks, as well as stationary sources from on-site processing equipment (e.g., rendering units, boilers, and generators).

Further, SJVAPCD has rules in place that regulate stationary sources (e.g., boilers, diesel generators, and rendering facilities), that would require additional evaluation during the permitting process. SJVAPCD Regulation II applies to permitted emission sources (e.g., boilers, rendering facilities, generators) and includes rules such as New and Modified Stationary Source Review (Rule 2201), which would apply to the project (McLaughlin, pers. comm., 2017). Through the permitting process, Rule 2201 requires that stationary source emissions are reduced or mitigated to below the SJVAPCD's significance thresholds. Upon SJVAPCD review of the permit application for the proposed rendering facility, SJVAPCD would verify that there is no net increase in emissions above specified thresholds from New and Modified Stationary Sources for all nonattainment pollutants and their precursors.

Table 4.4-6 Summary of Annual Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2021) (tons/year)

Source Type	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_X
Area[1]	0.2	0	0	0	<0.1	0
Energy[2] (Stationary Source)	0.7	0.8	0.9	0.9	10.3	0.1
Mobile	0.1	1.9	0.9	0.2	2.3	<0.1
Total Annual Emissions	1.0	2.7	1.8	1.2	12.5	0.1
SJVAPCD Threshold of Significance[3]	10	10	15	15	100	27
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_X = sulfur oxide; SJVAPCD = San Joaquin Valley Air Pollution Control District.

[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings.

[2] Energy emissions include emissions associated with on-site natural gas boiler.

[3] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

Total values may not add correctly due to rounding. See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

Daily emissions were modeled using CalEEMod and compared to the 100 pounds per day screening levels, as suggested by SJVAPCD and are presented in Table 4.4-7 below.

Table 4.4-7 Summary of Modeled Average Daily Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2021) (pounds per day)

Source Type	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_X
Area[1]	1	<1	<1	<1	<0.1	0
Energy[2] (Stationary Source)	4	4	5	5	57	0.4
Mobile	1	13	6	2	18	0.1
Total Daily Emissions	6	17	11	7	75	0.5
SJVAPCD Threshold of Significance	100	100	100	100	100	100
Exceed Significance Threshold?	No	No	No	No	No	No

Notes: NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SO_X = sulfur oxide; SJVAPCD = San Joaquin Valley Air Pollution Control District.

[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings.

[2] Energy emissions include emissions associated with on-site natural gas boiler.

Total values may not add correctly due to rounding. See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2019

As shown in Tables 4.4-6 and 4.4-7 above, the project would not result in emissions of criteria air pollutants or precursors that would exceed SJVAPCD-recommended thresholds. The project would also be subject to stationary permit limits/requirements required by Rule 2201. Therefore, project-generated emissions would not violate or contribute substantially to an existing or projected air quality violation such that adverse health impacts would occur or conflict with air quality planning efforts of the SJVAPCD. As discussed in the "Thresholds of Significance" section, SJVAPCD developed these thresholds in consideration of achieving attainment for the NAAQS and CAAQS, which represent concentration limits of criteria air pollutants needed to adequately protect public health. Therefore, the project's contribution to operational criteria air pollutants and precursors would not contribute to the exceedance of the NAAQS or CAAQS in the SJVAPCD nor result in greater acute or chronic health impacts compared to existing conditions. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.4-3: Mobile Source CO Concentrations

Construction activities would result in some vehicle trips associated with construction workers, material hauling, and supply deliveries. However, estimated maximum construction activities would result in minimal CO emissions. Operation of the proposed project would not result in an increase in vehicle trips on the local roadway network, nor would SJVAPCD-recommended screening criteria be exceeded for CO. This impact would be **less than significant**.

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, it is recommended that CO not be analyzed at the regional level, but at the local level.

Construction would occur over more than 2 years and therefore traffic related to construction activities would also be spread over the duration of construction activities. As such, construction-generated traffic is not anticipated to result in large peaks at any one time over the course of construction, as the maximum number of construction workers on the project site at any given time would not exceed 50. This analysis focuses on operation-related traffic.

Project-generated traffic would be associated primarily with the operational phase. At complete buildout, the project would generate up to 273 daily trips, including up to 36 trips during the a.m. peak hour and up to 28 during the p.m. peak hour (Fehr & Peers 2017).

SJVAPCD provides a screening methodology to determine whether CO emissions generated by traffic at congested intersections have the potential to exceed, or contribute to an exceedance of, the 8-hour CAAQS of 9.0 µg/m^3 or the 1-hour CAAQS of 20.0 µg/m^3. SJVAPCD has established that if neither of the following criteria are met at all intersections affected by the project, the project would result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

According to the traffic study prepared for the project, project-generated traffic would not result in the degradation of a street or intersection to LOS E or F nor contribute to a street or intersection already operating at LOS F, as shown in Section 4.12, "Transportation/Traffic." Therefore, neither of SVJAPCD-recommended criteria would be met to result in a potential for a CO hotspot and this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.4-4: Exposure of Sensitive Receptors to TACs

Short-term construction activities would result in emissions of diesel PM. However, construction activities would vary over the entire construction period. Modeled worst-case construction emissions would be substantially below SJVAPCD-recommended threshold. Construction activities would take place relatively far away from offsite sensitive receptors (i.e., 2,440 feet away). Therefore, given the dispersive properties of diesel PM, concentrations would be minimal at this distance. Operation of the project would result in a new natural gas-powered boiler and operation of diesel delivery trucks. Levels of TACs from project-related construction would not result in a substantial increase in health risk exposure at offsite sensitive receptors, increases in cancer risk that are greater than 20 in 1 million, or a hazard index greater than one, however, operation of the new boiler could result in a substantial increase in health risk exposure at offsite sensitive receptors. This impact would be **significant**.

The project would result in short-term diesel exhaust emissions from on-site construction equipment. Operation of the rendering facility would result in truck trips (and associated diesel exhaust) as well as various pollutants emitted from the on-site stationary equipment such as the natural gas-powered boiler. The project site is located adjacent to the existing RWRF along West Jensen Avenue. Surrounding land uses are primarily agriculture. A few agricultural residences are in the vicinity; the nearest two residences are located approximately 2,440 feet east of the proposed building and associated stationary sources, both on the east side of South Cornelia Avenue. The proposed driveway where delivery trucks would enter/exit the site is approximately 1,700 feet west of these same receptors.

For construction activity, diesel PM is the primary TAC of concern. With regard to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period. According to the Office of Environmental Health Hazard Assessment, Health Risk Assessments, which are studies that determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA 2012:11-3).

As discussed previously, project-related construction emissions, including PM_{10} (a surrogate for diesel PM) would not exceed SVJAPCD significance thresholds and would not be substantial. Further, the construction phase would be relatively short (i.e., 18 to 24 months). The SJVAPCD Prioritization Calculator was used to estimate the maximum prioritization score associated with construction-generated PM_{10} emissions. Results from this analysis indicated that the maximum prioritization score would not exceed 0.003 for receptors located between 1,640 feet and 3,280 feet. This is below SJVAPCD's prioritization score of 10. Thus, considering that project emissions would not exceed SJVAPCD thresholds, the short duration of construction-related activities and the distance to nearby receptors (i.e., over 1,000 feet), project construction would not expose sensitive receptors to substantial pollutant concentrations.

Operation of the rendering facility would include emissions from on-site stationary sources (e.g., boilers, generators) and diesel exhaust emissions from truck loading/unloading at the rendering facility. Regarding diesel exhaust from delivery trucks, CARB has developed recommendations for siting new sensitive land uses such as residences near various TAC sources (CARB 2005). Based on this guidance, distribution centers would be similar sources to the loading/unloading activities that would take place at the rendering facility. CARB recommends that sensitive receptors not be located within 1,000 feet of a distribution center that accommodates more than 100 trucks per day. Existing sensitive receptors are located as close as 2,440 feet from the new facility and operation would result in up to 150 truck trips per day at maximum capacity. The nearest residence to the facility's driveway that would provide truck access would be approximately 1,700 feet from the nearest sensitive receptor. This would not exceed the screening criteria recommended by CARB. Project truck activity would be consistent with CARB recommendations and would not expose nearby sensitive land uses to substantial concentrations of diesel PM. The project would relocate the existing facility from its current location, which is near a residential area of the city, to a much more rural area that is not close to highly populated areas.

Regarding stationary sources, SJVAPCD Regulation II ensures that stationary source emissions will be reduced or mitigated to below applicable limits, thus not exposing existing sensitive receptors to substantial TAC concentrations. TAC emissions were estimated based on the anticipated daily natural gas consumption of the boiler of 679 thousand cubic feet (mcf) and process emissions were input into the SJVAPCD Prioritization Calculator. Results from the screening analysis indicated a maximum prioritization score of between 17 and 34 for receptors located between 1,640 feet and 3,280 feet would occur depending on the type of boiler installed. See Appendix B for modeling inputs and outputs.

Results from the screening-level risk analysis indicated that project operational activities would exceed the SJVAPCD's prioritization score of 10. Project-related activities could expose nearby, offsite sensitive receptors to incremental increases in cancer, chronic, and acute risk that exceed applicable thresholds.

Thus, project-related operation could expose nearby sensitive receptors to substantial levels of pollutants and this impact would be **significant**.

Mitigation Measure 4.4-4: Apply Best Available Control Technology for New Stationary Sources

The project proponent shall install a boiler with a catalyst designed to reduce TAC emissions, or other equally effective control technology based on the source type. For example, an oxidation catalyst or a Non-Selective Catalytic Reduction (NSCR) catalyst can reduce TAC emissions by 76 percent (SJVAPCD 2016).

Significance after Mitigation

Implementation of Mitigation Measure 4.4-4 would reduce TAC emissions associated with boiler use by 76 percent. Results from the SJVAPCD Prioritization Calculator indicated a maximum prioritization score of between 4 and 8 for receptor located between 1,640 feet and 3,280 feet. This would not exceed SJVAPCD's prioritization score of 10 and would not expose nearby sensitive receptors to substantial levels of pollutants. This impact would be reduced to **less than significant** with mitigation.

Impact 4.4-5: Exposure of Sensitive Receptors to Odors

The project would introduce new odor sources into the area from various stages of raw material handling and processing operations associated with the rendering facility. In accordance with SJVAPCD permitting requirements, stationary sources are required to maintain and implement odor control technologies. However, the City of Fresno General Plan requires projects that could result in exposure of sensitive receptors to odors to prepare an odor management plan. Therefore, without the preparation of such a plan, this impact would be **significant**.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to distress and often generating citizen complaints to local governments and regulatory agencies.

Odor emissions could result during construction and operation of the project. However, diesel exhaust from the use of heavy equipment during construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance, so this discussion is focused on long-term operational odor sources.

The proposed rendering facility could result in odor emissions from the various stages of raw material handling and processing operations that could affect nearby residences. SJVAPCD has established a screening-level distance of 1 mile for assessing odor impacts from these types of facilities (i.e., rendering facility) at nearby receptors. Complaints have been submitted to the City and SJVAPCD regarding the existing rendering facility. Moving the rendering facility to a location that would expose fewer sensitive receptors to odors is one of the primary objectives of the project. There are currently hundreds of residences and several schools within 1 mile of the existing rendering plant, compared to the project site where fewer than 40 residences are located within 1 mile. Thus, relocation of the facility would result in a substantial decrease in the number of people that would be exposed to odors from project operation. In addition, the existing rendering facility includes some odor abatement equipment and processes; however, because of the age of the facility and equipment, the level of achievable odor abatement is less than the level that could be achieved by the proposed new facility with all new equipment and use of the latest technology (such as real-time odor detection and notification systems and mechanically controlled doors).

The closest sensitive receptors to the project site are two residences located approximately 2,440 feet east of the site, both on the east side of South Cornelia Avenue. These residences are already located near the RWRF and are surrounded by agricultural operations, which involve application of fertilizer and other potentially odorous emissions. Therefore, these residences are currently exposed to existing nuisance odors.

In accordance with SJVAPCD permitting requirements (Rule 2201), stationary sources are required to maintain and implement odor control technology that meets SJVAPCD standard for Best Available Control Technology (BACT). As part of the proposed relocation, SJVAPCD would require a re-evaluation of existing permits and continue to require BACT requirements for controlling odors. Based on the existing Odor Control Plan (Appendix B), wet scrubbers and thermal oxidizers are currently used to control odor emissions. Upon SJVAPCD review of the new facility location, similar or more advanced odor control technology would be required. Further, as a component of the odor control plan that would be required by SJVAPCD (similar to current operating requirements), an odor response component would be included that requires odor complaints be reported by the plant manager to SJVAPCD and correct any equipment failures per SJVAPCD Rule 1100.

It is likely that, because the project would include new equipment and would be required to incorporate BACT requirements, odor emission from the proposed facility would not substantially affect residences in the vicinity. However, the City's General Plan Master EIR (MEIR) includes Mitigation Measure AQ-4 which requires projects that could result in exposure of sensitive receptors to odors (including rendering facilities located within 1 mile of sensitive receptors) to prepare an odor management plan for approval by the City that minimizes impacts to a less-than-significant level (City of Fresno 2014b:5.3-64). Therefore, without preparation of such a plan, the project would result in a **significant** impact.

Mitigation Measure 4.4-5: Prepare an Odor Control Plan

The following odor management conditions will be applicable to the facility and will be consistent, and not in conflict with, the conditions of the sites Authority to Construct (ATC) or Permit to Operate (PTO) issued by the San Joaquin Air Pollution Control District (SJVAPCD). The project proponent shall prepare an Odor Control Plan (OCP). The OCP will include measures to minimize the potential for a substantial odor increase at residences within 1 mile of the project site and shall memorialize the facility's odor abatement system equipment, the systems performance monitoring protocols, and the procedures for investigating and correcting public complaints. The OCP will be made available to the City upon request. The SJVAPCD will ensure the OCP is consistent and not in conflict with the SJVAPCD requirements. Measures included in the OCP shall be consistent and not in conflict with the Best Available Control Technology standards established by SJVAPCD. Raw food processing byproducts shall be transported to and from the facility in closed containers and/or enclosed trucks/trailers. The OCP may include additional measures, if necessary, to minimize odor generation such that the potential for project-related odor complaints from existing residents would be reduced to the degree feasible. To ensure the proper performance of the odor abatement system, certain flow, temperature, pressure, and chemical checks will be performed and logged every shift. Any breakdowns reportable under the SJVAPCD Rule 1100 will be submitted to the City. All public complaints received by facility management will be investigated and documented, and if verified, appropriate response actions will be taken. The facility will provide a 24-hour hotline for public complaints and the number will be posted at the facility entrance.

Significance after Mitigation

Implementation of Mitigation Measure 4.4-5 would meet the General Plan MEIR mitigation requirements for potential odor generating uses, such as the project. It is also important to note that the project results in an overall reduction in impacts related to odors by using all new equipment with advanced odor reducing technologies and moving the existing rendering operation from a more densely populated area to a new location with fewer residences that are located farther away from the facility. This would reduce odor-related impacts of the project on sensitive receptors near the project site to a **less-than-significant** level.

4.5 ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

This section analyzes and evaluates the potential impacts of the project on known and unknown cultural resources. Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include prehistoric resources, historic-era resources, and "tribal cultural resources" (the latter as defined by Assembly Bill [AB] 52, Statutes of 2014, in Public Resources Code [PRC] Section 21074).

Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Tribal cultural resources (TCRs) were added as a resource subject to review under CEQA, effective January 1, 2015 under AB 52. This category of resources includes site features, places, cultural landscapes, sacred places or objects, which are of cultural value to a tribe.

This section also describes paleontological resources in the project vicinity and the potential for the project to affect these resources.

4.5.1 Regulatory Setting

FEDERAL

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by a) the National Historic Preservation Act (NHPA) of 1966 as amended by 16 U.S. Code 470, b) the Archaeological Resource Protection Act of 1979, and c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP).

Section 106 of the NHPA and accompanying regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in, or may be eligible for listing in the NRHP. The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:
    A. Association with events that have made a significant contribution to the broad patterns of history (events).
    B. Association with the lives of persons significant in the past (persons).
    C. Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

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

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks "focus," it is considered not eligible for the NRHP. In further expanding upon the generalized NRHP criteria, evaluation standards for linear features (e.g., such as roads, trails, fence lines, railroads, ditches, flumes) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length; (2) presence of distinctive engineering features and associated properties; (3) structural integrity; and (4) setting. The highest probability for NRHP eligibility exists within the intact, longer segments, where multiple criteria coincide.

STATE

California Register of Historical Resources

The California Register of Historical Resources (CRHR) established a list of those properties which are to be protected from substantial adverse change (PRC Section 5024.1). The CRHR includes properties that are listed or have been formally determined to be eligible for listing in the NRHP, State Historical Landmarks, and eligible Points of Historical Interest. Other resources require nomination for inclusion in the Register. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office procedures, historic resources or districts designated under a local ordinance consistent with Commission procedures, and local landmarks or historic properties designated under local ordinance.

A historical resource may be listed in the CRHR if it meets any of the following criteria:

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on historical resources, unique archaeological resources, and TCRs. Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Pursuant to PRC Section 21084.2, a "project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC Section 5024.1).

2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1), including the following:

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

    b) Is associated with the lives of persons important in our past;

    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

    d) Has yielded, or may be likely to yield, information important in prehistory or history.

4) The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will impact TCRs. PRC Section 21074 states the following:

a) "Tribal cultural resources" are either of the following:

    1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

        A) Included or determined to be eligible for inclusion in the CRHR.

B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the County coroner be notified. If the remains are of a Native American, the coroner must notify NAHC, which notifies and has the authority to designate the most likely descendant of the deceased. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7050.5 and 7052

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC. Section 7052 states that the disturbance of Native American cemeteries is a felony.

Public Resources Code Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Public Resources Code Section 21080.3

AB 52, signed by Governor Edmund G. Brown, Jr., in September of 2014, establishes a new class of resources under CEQA: "tribal cultural resources." AB 52, as provided in PRC Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of an notice of preparation of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration.

LOCAL

Fresno General Plan

The Historic and Cultural Resources Element of the General Plan (City of Fresno 2014a) recognizes that an aesthetic environment and connections to culture and history are essential characteristics of a community that values its quality of life. The purpose of the Historic and Cultural Resources Element is to provide policy guidance to protect, preserve,

and enhance the city's cultural and historic resources. The following policies related to cultural resources may apply to the proposed project:

- Policy HCR-2-a Identification and Designation of Historic Properties: Work to identify and evaluate potential historic resources and districts and prepare nomination forms for Fresno's Local Register of Historic Resources and California and National registries, as appropriate.
- Policy HCR-2-c Project Development: Prior to project approval, continue to require a project site and its Area of Potential Effects (APE), without benefit of a prior historic survey, to be evaluated and reviewed for the potential for historic and/or cultural resources by a professional who meets the Secretary of Interior's Qualifications. Survey costs shall be the responsibility of the project developer. Council may, but is not required, to adopt an ordinance to implement this policy.
- Policy HCR-2-d Native American Sites: Work with local Native American tribes to protect recorded and unrecorded cultural and sacred sites, as required by State law, and educate developers and the community-at-large about the connections between Native American history and the environmental features that characterize the local landscape.
- Policy HCR-2-f Archaeological Resources: Consider State Office of Historic Preservation guidelines when establishing CEQA mitigation measures for archaeological resources.

4.5.2 Environmental Setting

REGIONAL PREHISTORY

Prehistoric archaeological investigations are very limited in the Fresno area. The San Joaquin River section of the middle and lower San Joaquin Valley is identified by many researchers to be one of the least understood areas of the State. For this reason, a more generalized systemic description is provided here. Part of the challenge associated with archaeological research in this area is that the eastern side of the San Joaquin Valley has been farmed for generations and farming tends to destroy the surface signatures of most prehistoric sites (City of Fresno 2014b:5.5-2).

Terminal Pleistocene

During the Terminal Pleistocene period (13,500 to 11,000 years before present [ybp]), California was a much wetter and cooler place, but with the retreat of continental Pleistocene glaciers, all of California except the northwest coast experienced a warming and drying trend. Large shallow lakes filled with glacial meltwater were located in the Central Valley and used by populations of large game animals, most of which are now extinct. Native American populations were probably widely dispersed hunter-gatherers, and their archaeological assemblages would have consisted of large projectile points with distinctive "fluted" styles and deeply buried features with animal fragments (City of Fresno 2014b:5.5-2).

Early and Middle Holocene

Today, land located between the floodplain of the middle and lower San Joaquin Valley and the lower foothills is covered with a recent and thick blanket (30 feet or more) of alluvium derived from a post-Pleistocene erosion of the western Sierras. Thus, while a few sites from the Early and Middle Holocene periods (11,000 to 7,000 ybp and 7,000 to 3,800 ybp, respectively) are found in upland environments, there are no such dated sites in or very near the city of Fresno. Sites in the nearby foothills exhibit groundstone assemblages suggesting that acorns and pine nuts were harvested by bands of mobile groups. Comparative ethnographic data suggests that seasonally mobile peoples may have created a home base (village) in winter during these periods, then travelled to exploit pockets of certain resources in temporary encampments (City of Fresno 2014b:5.5-3).

Lowland groups may have predominated in the Fresno area during the late Middle Holocene and archaeological sites dated to this time would likely exhibit foodstuff and processing tools more focused on lakeshore resources than grinding implements seen in upland sites. In general, Early and Middle Holocene alluvial deposits with cultural

resources in them would typically be exposed only after several feet of soil has been removed. Soils near active stream channels are younger and are less likely to exhibit sites from this period except on intact dunes and at some depth. Thus, sites from this period are likely located in the city, but are more likely to be found at depth after a disturbed topsoil horizon has been removed (City of Fresno 2014b:5.5-3).

Late Holocene

The Late Holocene period (3,800 to 1,500 ybp) experienced an increase in the number of sites and evidence for an increased sophistication in the toolkit of the local prehistoric groups. Populations existing on flatter areas between braided stream channels near the city and those along the major riverine systems in the middle San Joaquin Valley probably concentrated their lifeways on marsh-based resources. The quantity of sites near the south bank of the San Joaquin River (in and near the city limits) is large (City of Fresno 2014b:5.5-3).

At the end of this period cultural groups possessing Great Basin-style toolkits began to arrive in California and appear to have begun influencing and/or merging with the existing populations. Local sites saw changes in the toolkit with an overall reduction of projectile point size suggestive of bow and arrow technologies. At about 2,300 ybp, large villages were clustered along the banks of the San Joaquin River and other watersheds (winter villages). Evidence for Late Holocene deposits in and very near the city limits is likely. These would lie upon buried alluvial fans and riverine deposits at shallow depths (City of Fresno 2014b:5.5-4).

Late Prehistoric

With the introduction of Great Basin populations into the Eastern Sierras of California at the beginning of the Late Prehistoric (1,500 ybp to contact with the Spanish), many of the ancestral California tribes were influenced by their toolkits and lifestyles. Part of this interpretation is derived from linguistic studies. The Yokuts were Penutian speakers, which appear to have arrived earlier, and many of the tribes to the east and southeast were newly arrived Takic or Uto-Aztecan speakers. The Takic speakers exhibited toolkits and lifeways adapted to desert climates. Bow and arrow technologies and the use of pottery are found in sites dating to this period. This period was the zenith of prehistoric California life, with an increase in sophisticated lifestyles, extensive trade networks, and a burgeoning population. The end of the period saw the introduction of Europeans and their diseases of which the local tribes had little defense or resistance (City of Fresno 2014b:5.5-4).

ETHNOGRAPHY

At the time of European contact, most of the San Joaquin Valley and the foothills of the western slope of the Sierra Nevada were occupied by 40 or so groups classified together as the Yokuts. The Yokuts were recognized as having three major subgroups: the Northern Valley, the Foothill, and the Southern Valley. Each of these ethnolinguistic groups was composed of autonomous, culturally, and linguistically related tribes or tribelets. Ethnographic evidence suggests the city of Fresno is located in part of the Southern Valley Yokuts territory (City of Fresno 2014b:5.5-4).

The Southern Valley Yokuts occupied a rich environment with abundant water resources from the nearby sloughs, lake basins, and river systems. Swamps and tule marshes surrounded the waterways and teemed with wildlife, including aquatic mammals, fish, and waterfowl. Adjacent grasslands provided food for herds of elk, antelope, and (in the winter) deer. The regional flora was equally diverse and was used as a main staple of the Yokuts diet. The resource-rich environment allowed for permanent village sites, which typically were occupied throughout the year (City of Fresno 2014b:5.5-4).

Resources not found in the local environment were obtained through an extensive trade network, which had begun to develop during the Late Holocene. Quality stone and wood were lacking in the Valley environment and were often acquired through trade with nearby tribes. Imported items included acorns, salt, obsidian, and seashells, which were exchanged for locally available asphaltum, steatite, and animal skins. Tule was the primary component used for house construction and other fiber crafts such as basketry, mats, and cradles. Wood, stone, and bone were commonly used to manufacture a variety of tools and weapons. Sweathouses were common to every settlement and, in the case of the Southern Valley Yokuts, were used exclusively by men on a daily basis. The Southern Valley Yokuts were divided into true tribes, with individual tribelets having their own name, dialect, and territory. Typically, a tribelet was ruled by

a central chief who inherited the position, was assisted by one or more aides, and lived in the largest village (City of Fresno 2014b:5.5-5).

HISTORIC SETTING

Regional History

Gabriel Moraga was one of the first Europeans to see and explore the Central Valley of California. In 1805, he was ordered by the Spanish Governor to send his cavalry into the Modesto area and Calaveras River, naming both. In 1808, he was ordered into the Central Valley once again in search of potential new Mission sites and runaway neophytes. As Spanish California passed to Mexican control, American trappers increasingly began to exploit the regions resources and once gold was discovered, the population rush into California began, with mineral exploration in the mountains and foothills east of the city. During the latter half of the 19th century, the size of all Yokuts populations dwindled dramatically, because of the spread of European settlements and the diseases the Europeans brought with them (City of Fresno 2014b:5.5-5).

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Following mission secularization, the Mexican population grew as the native population continued to decline. Anglo-American settlers began to arrive in Alta California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants (City of Fresno 2014b:5.5-6).

In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo. Also in 1848, John Marshall found gold at Sutter's Mill, which marked the start of the Gold Rush. The influx of miners and entrepreneurs increased the non-native population of California from 14,000 to 224,000 in just 4 years. In 1854, gold was discovered in the upper reaches of the Kern River, which brought a tremendous influx of miners into eastern Kern County. This, in turn, stimulated commercial growth in the central and lower San Joaquin Valley as eager entrepreneurs set up business to support the miners and mining operations. Gold and silver were mined along the San Joaquin, but the deposits were not large. When the Gold Rush was over, many of the miners settled in the Central Valley communities and established farms, ranches, and lumber mills (City of Fresno 2014b:5.5-6).

Local History

Mining opportunities allowed the development of very small communities along rivers and streams in the foothills and mountains east and northeast of the city. In 1856, Fresno County was created, and the first county seat was located in the foothill community of Millerton. However, a flood in 1867 caused locals to look for a safer place to build a trade center that could serve the whole of the foothills. Named for the Spanish word for "ash tree," Fresno has its roots in the form of a large farm established in 1867 by A.Y. Easterby in an area of what is now central downtown. By 1871, Easterby's 5,000-acre ranch featured plots of wheat irrigated by river-fed ditches. When Central Pacific Railroad officials, including Leland Stanford, saw the Easterby farm in 1871, legend has it that Stanford declared the area the site of a stop for the new Central California Railroad (Southern Pacific) line. Because the railroad followed a northwest-southeast track, the first town site of Fresno Station (1872) was built on the Easterby farm paralleling the tracks, with the upslope portions (east) preferred for development (City of Fresno 2014b:5.5-6).

The need for water to irrigate the arid San Joaquin Valley became a priority for the economic development of Central Valley towns such as Fresno. Under California's 1873 "No Fence Law", farmers were no longer obligated to put up fences to keep roaming livestock out of their crops; furthermore, any crop destruction became the responsibility of the rancher who owned the offending livestock. Irrigation companies, colonies, and districts were formed in the vicinity of various small towns including Fresno to promote agriculture. Agricultural colonies were developed and water rights for those colonies established. The expanding irrigation system led to a shift in both the types of crops grown and the size of a typical farm. Pioneers initially grew wheat and other grain crops or raised cattle. As irrigation water became more readily available, individual farmers realized that premium crops like grapes, citrus, and tree fruit could be profitably grown on lots as small as 20 acres (City of Fresno 2014b:5.5-7).

Fresno incorporated in 1885, with a population of more than 3,000. Development was restricted to a six-block area beginning at and northeast from the Central Pacific Depot. Development of the infrastructure needed to support increases in agricultural and commercial industry soon followed and once diversity of industry began, immigrant populations also began to increase. Chinese, Armenian and Volga Germans began to arrive and settle. By 1900, Fresno held 12,000 people (City of Fresno 2014b:5.5-7).

The first three decades of the 20th Century were a period of steady growth and increasing prosperity for Fresno during which the city established itself as the primary city of the San Joaquin Valley. By the early 1920s, streetcar lines would radiate out from the central business district to the north, east, south, and west where farmland was being subdivided for suburban development. The expanding transit infrastructure, along with exponentially increasing private automobile ownership, made living further from the city center possible. By the end of the 1920s, Fresno had transformed into a thriving city at the center of the United States most productive agricultural region (City of Fresno 2014b:5.5-8).

The Great Depression of 1929 had a profound effect on the San Joaquin Valley. Farmers were forced to cut costs in the face of reduced demand for their products; many were forced into foreclosure. The Valley's problems were exacerbated by the influx of migrant refugees or "Dust Bowl" migrants. It is believed that 2.5 million people migrated from the Midwestern Plains states between 1930 and 1940, with over 300,000 relocating to California just between 1930 and 1934. Thousands more would continue to arrive throughout the 1930s and many ended up in the Central Valley as migrant farm workers earning very low wages (City of Fresno 2014b:5.5-8).

Following World War II, the passage of the G.I. Bill enabled returning veterans to purchase homes and establish businesses, prompting another period of rapid expansion. Between 1940 and 1950, the city's population grew by 30,000, with much of the growth accommodated in new auto-oriented suburbs. The Interstate Highway Act of 1956 served to spur development of suburbs, and ultimately led to the economic decline of many inner cities. By the mid-1950s, however, the results of rapid suburbanization were becoming evident in downtown Fresno as major retailers such as Sears & Roebuck relocated to newly developed suburban shopping centers. With downtown unable to compete with burgeoning suburban development, construction of new buildings in downtown Fresno came to a virtual halt (City of Fresno 2014b:5.5-9).

RECORDS SEARCHES AND CONSULTATION

A confidential records search for the project site was conducted by Ascent Environmental at the Southern San Joaquin Valley Information Center (SSJVIC) on June 12, 2017 (SSJVIC Records Search Number 17-302). The search included a review of the NRHP, the CRHR, California State Historical Landmarks, California State Points of Historical Interest, Archaeological Determinations of Eligibility, records of previously recorded cultural resources, and records of previous field studies.

The records search revealed one previous archaeological report covering the entire project site and seven additional reports within 0.25 mile of the project site. No archaeological or historic sites have been identified within the project site. One historic-era structure is located within 0.25 mile of the site. The structure, Pacific Gas and Electric Company's Panoche-Kearney 230 kV transmission line, was evaluated in 2015 and determined not to be historically significant. Because the transmission line does not appear to meet the criteria for the NRHP or the CRHR, it is therefore not considered to be significant for the purposes of CEQA.

TRIBAL CULTURAL RESOURCES

Native American Consultation

In compliance with PRC Sections 21080.3.1, the City of Fresno sent letters to two Native American tribes listed below on November 27, 2018. No requests for consultation were received during the 30-day response period for AB 52 as defined in PRC 21080.3.1.

- Table Mountain Rancheria, Bob Pennell, Cultural Resources Director; Leanne Walker-Grant, Chairperson

- Dumna Wo-Wah Tribal Government, Robert Ledger, Chairperson

A sacred lands file database request was submitted to the NAHC for this project. The NAHC responded on October 23, 2018, stating that the sacred lands search yielded a negative result.

PALEONTOLOGICAL RESOURCES

Significant nonrenewable vertebrate and invertebrate fossils and unique geologic units have been documented throughout California. The fossil-yielding potential of an area is highly dependent on the geologic age and origin of the underlying rocks. Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield paleontological resources. Depending on the location, the paleontological potential of subsurface materials generally increases with depth beneath the surface, as well as with proximity to known fossiliferous deposits.

Pleistocene or older (older than 11,000 years) continental sedimentary deposits have a high paleontological potential while Holocene-age deposits (less than 10,000 years old) have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms.

The general structure of the central San Joaquin Basin is the result of collision between the North American and Pacific tectonic plates, periodically lifting and submerging the basin numerous times. Based on a review of geologic maps of the city, the project site consists of two primary surficial deposits: 1) Pleistocene non-marine and 2) Quaternary non-marine fan deposits, which occurred as a result of erosion along the western Sierra Nevada (City of Fresno 2014b: Appendix D). Therefore, ground disturbing construction activities in the city could result in discovery of paleontological resources (City of Fresno, 2014b:5.5-2).

A search of the University of California Museum of Paleontology (UCMP) database was conducted on January 24, 2019. Records of paleontological finds maintained by the University of California Berkeley Museum of Paleontology state that there are more than 7,000 localities at which fossil remains have been found in Fresno County (UCMP 2019).

4.5.3 Impacts and Mitigation Measures

METHODOLOGY

The impact analysis for archaeological and historical resources is based on the results of the SSJVIC and NAHC records searches. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

Section 21083.2 of the State CEQA Guidelines defines "unique archaeological resource" as an archeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it as a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a "nonunique resource" is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

PRC Section 21074 defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are listed or determined eligible for CRHR listing, listed in a local register of historical resources, or otherwise determined by the lead agency to be a tribal cultural resource.

Potential for impacts to paleontological resources is based on review of paleontological resources found within the county and whether the project site is underlain by geologic formations considered to be sensitive for paleontological resources.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on cultural or paleontological resources if it would:

- cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically;
- disturb any human remains, including those interred outside of dedicated cemeteries; or
- directly or indirectly destroy a unique paleontological resource.

ISSUES NOT DISCUSSED FURTHER

As described above, no historic resources were identified within the project site. The site consists of 20 acres of land used currently used for agriculture and contains no built structures. The records search revealed one historic-era structure within 0.25 mile of the site, and it was found to be not historically significant. Therefore, it is not considered to be significant for the purposes of CEQA and the project would have no impact on historical resources. This issue is not analyzed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.5-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources

Results of the records search did not indicate any known archaeological sites within the project site. Ongoing agricultural activities have disturbed the soil surface, which would have likely destroyed any shallow artifacts. However, proposed project-related ground-disturbing activities, which would disturb soil at greater depths than agricultural activities, could result in discovery or damage of undiscovered subsurface unique archaeological resources. This would be a **potentially significant** impact.

According to the City's General Plan, the probability of finding subsurface cultural resources is considered low to moderate in most areas in the city, with the exception of the waterways (City of Fresno 2014a:8-9) and the SSJVIC records search for this project revealed no known archaeological sites. In addition, ongoing agricultural activities on the project site have disturbed the soil surface, which would have likely destroyed any shallow artifacts. Regardless, there is the potential that ground disturbance during project construction, which requires a greater depth of soil disturbance than agricultural activities (especially excavation for foundations and new utilities), could encounter previously undiscovered or unrecorded archaeological sites and materials. These activities could damage or destroy previously undiscovered archaeological resources. This would be a **potentially significant** impact.

Mitigation Measure 4.5-1a: Conduct Archaeological Survey

Prior to approval of grading plans, the applicant shall retain a qualified archaeologist to conduct a field survey for archaeological resources. The following procedures shall be followed.

If archaeological resources are found during the field survey, the resources shall be inventoried using appropriate State record forms and submitted to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for NRHP and CRHR significance. If the resources are found to be significant, appropriate measures shall be identified by the qualified archaeologist and implemented at the direction of the City. Appropriate measures to minimize impacts to significant resources could include avoidance or capping, incorporation of the site in open space, or data recovery excavations of the finds. In addition, excavation and construction activities in the vicinity of discovered resources shall be conducted in the presence of an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional archaeological resources are found during excavation and/or construction activities, the procedure identified in Mitigation Measure 4.5-1b for the discovery of unknown resources shall be followed.

Mitigation Measure 4.5-1b: Halt Ground-Disturbing Activity Upon Discovery of Subsurface Archaeological Features

If archaeological resources are not found during the field survey, excavation and/or construction activities can commence. If archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City as to the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the State CEQA Guidelines. If the resources are determined to be unique archaeological resources as defined under Section 15064.5 of the State CEQA Guidelines, avoidance and/or minimization measures shall be identified by the qualified archaeologist and recommended to the City. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the City approves the measures to protect these resources. Any archaeological resources recovered as a result of mitigation shall be provided to a City-approved institution or person capable of providing long-term preservation to allow future scientific study.

Significance after Mitigation

Implementation of Mitigation Measures 4.5-1a and 4.5-1b would reduce impacts associated with archaeological resources to a **less-than-significant** level because they would require implementation of professionally-accepted and legally-compliant procedures for assessment and protection of previously undocumented significant archaeological resources.

Impact 4.5-2: Result in Disturbance of Human Remains

Although no evidence exists that suggests any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project site, ground-disturbing construction activities could uncover previously unknown human remains. However, the City and project applicant would comply California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, which requires avoidance or minimization of disturbance of human remains, and appropriate treatment of any remains that are discovered. Therefore, this impact would be **less than significant**.

Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the proposed project site. However, the location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Therefore, while remote, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site and could be uncovered by construction activities related to the proposed project.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code sections 7050.5 and 7052 and PRC Section 5097.

These statutes require that, if human remains are discovered, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the appropriate County coroner shall be notified immediately. If

the remains are determined by the coroner to be Native American, the County coroner will contact NAHC within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the NAHC-designated Most Likely Descendant, and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

The City and project applicant would comply California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, which requires avoidance or minimization of disturbance of human remains, and appropriate treatment of any remains that are discovered. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.5-3: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource

In compliance with PRC Sections 21080.3.1, the City of Fresno sent letters to two Native American tribes on November 27, 2018. No requests for consultation were received in response; therefore, no resources were identified as TCRs. Because no resources meet the criteria for a TCR under PRC Section 21074, there would be **no impact** to tribal cultural resources.

As part of the 2013/2014 legislative session, AB 52 established a new class of resources under CEQA, TCRs, and requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete. As detailed above, the City sent letters to tribal representatives of the following tribes: Table Mountain Rancheria of California and the Dumna Wo Wah Tribal Government.

No responses were received during the 30-day response period as defined in PRC 21080.3.1, and, therefore, no resources have been identified as TCRs. In addition, the NAHC Sacred Lands database search was negative. For these reasons, no part of the project site meets any of the PRC Section 21074 criteria for TCRs. Therefore, the project would have **no impact** to known TRCs.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.5-4: Directly or Indirectly Destroy a Unique Paleontological Resource

There is a high potential for discovery of paleontological resources within the city, and the project site is underlain with surficial deposits that have the potential to contain paleontological resources. Ground disturbance associated with the project could uncover previously undiscovered paleontological resources. This would be a **potentially significant** impact.

The project site does not contain any unique geologic features. However, according to the City's General Plan EIR, the region that includes the city has undergone a period of glacial activity, and a period of erosion, indicating that the potential for discovery of paleontological resources in the city is high. In addition, a search of the UCMP database identified more than 7,000 localities at which fossil remains have been found in Fresno County (UCMP 2019). Based on a review of geologic maps of the city, the project site consists of two primary surficial deposits: 1) Pleistocene non-marine and 2) Quaternary non-marine fan deposits which occurred as a result of erosion along the western Sierra Nevada (City of Fresno, 2014b: Appendix D). All undisturbed alluvial deposits have the potential of containing vertebrate fossils and both deposit types are highly sensitive to ground disturbing activities and could be affected by excavation and construction within previously undisturbed soils (City of Fresno, 2014b:5.5-14). Although the project site is highly disturbed from ongoing crop cultivation, which substantially reduces the likelihood for discovering in-

tact paleontological resources, grading and trenching activities associated with the project would disturb deeper levels of soil in some areas and could uncover previously undiscovered paleontological resources. Therefore, impacts to paleontological resources would be **potentially significant**.

Mitigation Measure 4.5-4: Worker Training, Paleontological Survey, and Construction Monitoring

Prior to initiating construction, the project applicant shall retain a qualified paleontologist to conduct worker awareness training for all construction personnel involved with earthmoving activities, including the site superintendent, about the possibility of encountering fossils. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel will be trained about the proper notification procedures should fossils be encountered.

In addition, prior to issuance of grading permits, a qualified paleontologist shall conduct a screening-level site survey to better determine, based on specific site conditions and geology, the potential for significant paleontological resources to be present at a depth that could be disturbed by proposed activities. If the screening-level site survey indicates that the project site is not likely to include significant paleontological resources at a depth that could be adversely affected by proposed activities, the qualified paleontologist shall submit the findings to the City and no additional mitigation is necessary, and construction may proceed. If the paleontologist finds that the potential for significant paleontological resources are likely present and could be affected by proposed activities, the paleontologist shall prepare an adequate mitigation program for avoiding or minimizing adverse impacts to paleontological resources. The program shall include at a minimum: 1) field survey and surface salvage prior to earth moving, if applicable; 2) monitoring by a qualified paleontological resource monitor of trenching and other disturbance of previously undisturbed soil and a plan for stopping work in areas of finds (including identification of appropriate buffers for restricting construction equipment); 3) salvage of unearthed fossil remains and/or traces (e. g., tracks, trails, burrows); 4) screen washing to recover small specimens, if applicable; 5) preparation of salvaged fossils to a point of being ready for curation (i.e., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate); 6) identification, cataloging, curation, and provision for repository storage of prepared fossil specimens; and 7) a final report of the finds and their significance. All of the steps identified in the program shall be overseen by a qualified paleontologist. The mitigation program shall be submitted to the City and approved prior to issuance of grading permits.

Significance after Mitigation

Implementation of Mitigation Measure 4.5-4 would reduce this impact to a **less-than-significant** level by requiring worker awareness training and construction monitoring, if needed, and requiring appropriate handling, recording, and curation of any significant paleontological resources discovered.

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4.6 BIOLOGICAL RESOURCES

This section describes the existing biological resource conditions at the time environmental review for the project commenced, and provides a brief overview of applicable federal, state, and local laws and regulations pertaining to the protection of biological resources in the region. The analysis identifies the potential impacts of the project on biological resources and identifies mitigation measures, where necessary, to reduce the level of impact to less than significant.

4.6.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), the U.S. Fish and Wildlife Service (USFWS) regulates the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Section 10 of the ESA applies if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it will be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States. On December 22, 2017, the Secretary of the Interior issued a legal, revised interpretation (Opinion M-37050) of the MBTA's prohibition on the take of migratory bird species concluding that it applies only to "affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs." According to Opinion M-37050, take of a migratory bird, its nest, or eggs that is incidental to another lawful activity does not violate the MBTA, and the MBTA's criminal provisions do not apply to those activities. Opinion M-37050 may affect how MBTA is interpreted but it does not legally change the regulation itself.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from the California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species but does not include "harm" or "harass," as does the federal definition. As a result, the threshold for take is higher under CESA than under the federal ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Fish and Game Code Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species under the California Fish and Game Code

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take.

LOCAL

Fresno General Plan

The City of Fresno General Plan (2014a) includes the following policies that pertain to habitat conservation and are relevant to this analysis:

- Policy POSS-5-a Habitat Area Acquisition: Support federal, State, and local programs to acquire significant habitat areas for permanent protection and/or conjunctive educational and recreational use.
- Policy POSS-5-b Habitat Conservation Plans: Participate in cooperative, multi-jurisdictional approaches for area-wide habitat conservation plans to preserve and protect rare, threatened, and endangered species.
- Policy POSS-5-c Buffers for Natural Areas: Require development projects, where appropriate and warranted, to incorporate natural features (such as ponds, hedgerows, and wooded strips) to serve as buffers for adjacent natural areas with high ecological value.
- Policy POSS-5-d Guidelines for Habitat Conservation: Establish guidelines for habitat conservation and mitigation programs.
- Policy POSS-5-f Regional Mitigation and Habitat Restoration: Coordinate habitat restoration programs with responsible agencies to take advantage of opportunities for a coordinated regional mitigation program.
- Policy POSS-7-a Preserve Wildlife Corridors: Acquire and expand natural reserves and wildlife corridors through purchase, easements, mitigation for proposed activities, or other mutually satisfactory transactions.

4.6.2 Environmental Setting

The project site is located within an incorporated City-owned island of property, 2 miles east of the City of Fresno proper, that is surrounded by primarily agricultural land uses within unincorporated portions of western Fresno County. The Fresno-Clovis Regional Wastewater Reclamation Facility and a Pacific Gas & Electric (PG&E) substation are located directly west and northeast of the project site, respectively. The remaining adjacent properties are in irrigated row and field crops and orchards. The approximately 20-acre area of disturbance ranges in elevation from 249 to 252 feet.

HABITAT AND VEGETATION

The project site contains predominately agricultural habitat. During the September 12, 2018 site visit, cultivation of cotton was underway; however, other crops, like alfalfa, have also been grown at the site in previous years. The agricultural habitat was disked and irrigated, and one portion of the habitat where cotton plants had not successfully grown contained ruderal grasses and nonnative forbs such as ripgut brome (*Bromus diandrus*), common wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), Russian thistle (*Salsola tragus*), sow thistle (*Sonchus* spp.), and bristly

ox-tongue (*Helminthotheca echioides*). An approximately 2-acre area in the southwest corner of the project site is currently used for equipment storage (e.g., harvesting equipment, irrigation equipment). Because vehicles regularly drive through the area and it has been graded, the area contains no vegetation other than sparse weeds. The project site does not contain any trees.

SENSITIVE BIOLOGICAL RESOURCES

Special-Status Species

Special-status species are plants and animals that are legally protected under CESA (Fish and Game Code, Section 2050 et seq.), the federal ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For this Draft EIR, special-status species are defined as:

- species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12) for listed plants, (50 CFR 17.11) for listed animals, and various notices in the Federal Register for proposed species;
- species that are candidates for possible future listing as threatened or endangered under ESA (75 CFR 69222);
- species that are listed or proposed for listing by the State of California as threatened or endangered under CESA of 1984 (14 Cal. Code Regs., Section 670.5);
- plants considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank;
- species that meet the definition of rare or endangered under the CEQA) Guidelines, Section 15380;
- animals fully protected in California (Fish and Game Code, Section 3511 for birds, Section 4700 for mammals, and Section 5050 for reptiles and amphibians); or
- animals identified by CDFW as species of special concern.

SPECIAL-STATUS PLANTS

Table 4.6-1 provides a list of the special-status plant species that have been documented in the vicinity of the project site, within the California Natural Diversity Database (CNDDB) nine-quad search area or within the California Native Plant Society (CNPS) U.S. Geological Survey nine-quad search area, and describes their regulatory status, habitat, and potential for occurrence within the site. No special-status plants have potential to occur within the project site due to a lack of suitable habitat (Table 4.6-1).

Table 4.6-1 Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]			Habitat	Potential for Occurrence[2]
	Federal	State	CRPR		
heartscale *Atriplex cordulata* var. *cordulata*			1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps. Alkaline flats and scalds in the Central Valley, sandy soils. 10 to 902 ft in elevation. Blooms April-October.	Not expected to occur. The project site does not contain scrub, alkaline flat, or alkaline scald habitat.
brittlescale *Atriplex depressa*			1B.2	Alkali playa, wetland. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 3 to 1,066 ft in elevation. Blooms April-October.	Not expected to occur. The project site does not contain alkali playa or wetland habitat.

Table 4.6-1 Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]			Habitat	Potential for Occurrence[2]
	Federal	State	CRPR		
lesser saltscale *Atriplex minuscula*			1B.1	Alkali playa. Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy, alkaline soils. 0 to 738 ft in elevation. Blooms May-October.	Not expected to occur. The project site does not contain alkaline soil.
subtle orache *Atriplex subtilis*			1B.2	Valley and foothill grassland. Alkaline soils. 66 to 328 ft in elevation. Blooms June-October.	Not expected to occur. The project site does not contain alkaline soil.
succulent owl's-clover *Castilleja campestris* var. *succulenta*	FT	SE	1B.2	Vernal pools, wetland. Moist places, often in acidic soils. 66 to 2,313 ft in elevation. Blooms March-May.	Not expected to occur. The project site does not contain wetland or vernal pool habitat.
California jewelflower *Caulanthus californicus*	FE	SE	1B.1	Chenopod scrub, valley and foothill grassland, pinyon and juniper woodland. Sandy soils. 213 to 6,102 ft in elevation. Blooms February-May.	Not expected to occur. The project site does not contain scrub, grassland, or woodland habitat.
palmate-bracted salty bird's-beak *Chloropyron palmatum*	FE	SE	1B.1	Chenopod scrub, valley and foothill grassland, meadow and seep, wetland. Usually on Pescadero silty clay which is alkaline, with *Distichlis*, *Frankenia*, etc. 16 to 509 ft in elevation. Blooms May-October.	Not expected to occur. The project site does not contain suitable scrub, grassland, meadow, seep, or wetland habitat.
recurved larkspur *Delphinium recurvatum*			1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. On alkaline soils; often in valley saltbush or valley chenopod scrub. 10 to 2,592 ft in elevation. Blooms March-June.	Not expected to occur. The project site does not contain alkaline soil.
Pinnacles buckwheat *Eriogonum nortonii*			1B.3	Chaparral, valley and foothill grassland. Sandy soils; often on recent burns; western Santa Lucias. 984 to 3,199 ft in elevation. Blooms April-September.	Not expected to occur. The project site does not contain chaparral or grassland habitat.
California satintail *Imperata brevifolia*			2B.1	Wetland. Coastal scrub, chaparral, riparian scrub, mojavean desert scrub, meadows and seeps (alkali), riparian scrub. Mesic sites, alkali seeps, riparian areas. 10 to 4,905 ft in elevation. Blooms September-May.	Not expected to occur. The project site does not contain wetland, scrub, or chaparral habitat.
Madera leptosiphon *Leptosiphon serrulatus*			1B.2	Cismontane woodland, lower montane coniferous forest. Dry slopes; often on decomposed granite in woodland. 984 to 4,265 ft in elevation. Blooms April-May.	Not expected to occur. The project site does not contain woodland or forest habitat.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT	SE	1B.1	Vernal pools. 33 to 2,477 ft in elevation. Blooms April-September.	Not expected to occur. The project site does not contain suitable vernal pool or wetland habitat.
hairy Orcutt grass *Orcuttia pilosa*	FE	SE	1B.1	Vernal pools. 148 to 656 ft in elevation. Blooms May-September.	Not expected to occur. The project site does not contain suitable vernal pool or wetland habitat.
California alkali grass *Puccinellia simplex*			1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic soils. Sinks, flats, and lake margins. 3 to 3,002 ft in elevation. Blooms March-May.	Not expected to occur. The project site does not contain sink, flat, lake margin, or vernally mesic habitat.

Table 4.6-1 Special-Status Plant Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]			Habitat	Potential for Occurrence[2]
	Federal	State	CRPR		
Sanford's arrowhead *Sagittaria sanfordii*			1B.2	Standing or slow-moving freshwater ponds, marshes, and ditches. 0 to 2,133 ft in elevation. Blooms May-November.	Not expected to occur. The project site does not contain wetland, marsh, or other aquatic habitat.
caper-fruited tropidocarpum *Tropidocarpum capparideum*			1B.1	Valley and foothill grassland in alkaline clay soils. 0 to 1,181 ft in elevation. Blooms March-April.	Not expected to occur. The project site does not contain alkaline clay soil.

Notes: USFWS = CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:

FE Endangered (legally protected by ESA)

FT Threatened (legally protected by ESA)

State:

SE Endangered (legally protected by CESA)

California Rare Plant Ranks (CRPR):

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks

0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Likely to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Sources: CNDDB 2018; CNPS 2018

SPECIAL-STATUS WILDLIFE

Table 4.6-2 provides a list of the special-status wildlife species that have been documented within the CNDDB nine-quad search area, and describes their regulatory status, habitat, and potential for occurrence within the site. A total of two special-status wildlife species have potential to occur within the project site: burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), and California horned lark (*Eremophila alpestris actia*).

Table 4.6-2 Special-Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Amphibians and Reptiles				
western pond turtle *Actinemys marmorata*		SSC	Aquatic, including artificial flowing waters. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Not expected to occur. Potentially suitable aquatic habitat for western pond turtle is present adjacent to the southern border of the project site within an agricultural ditch. While western pond turtle may be present within the agricultural ditch occasionally, the ditch does not contain suitable basking habitat and the project site does not contain suitable grassy open habitat for nesting. Additionally, project construction plans do not include alteration or other adverse effects to the agricultural ditch.
California glossy snake *Arizona elegans occidentalis*		SSC	Patchily distributed from the eastern portion of San Francisco bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	Not expected to occur. The project site contains predominately disked earth and agricultural habitat. California glossy snake prefers open, sandy habitat with scattered brush, which is not present on the project site.
California tiger salamander *Ambystoma californiense*	FT	ST	Cismontane woodland, meadow and seep, riparian woodland, valley and foothill grassland, vernal pool, and wetlands. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not expected to occur. The project site does not contain wetland, vernal pool, or grassland habitat for this species.
blunt-nosed leopard lizard *Gambelia sila*	FE	SE FP	Chenopod scrub. Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Not expected to occur. The project site does not contain scrub habitat.
coast horned lizard *Phrynosoma blainvillii*		SSC	Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinyon and juniper woodlands, riparian scrub, riparian woodland, valley and foothill grassland. Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low shrubs. Open areas for sunning, shrubs for cover, patches of loose soil for burial, and abundant supply of native ants and other insects.	Not expected to occur. The project site contains predominately disked earth and agricultural habitat. Coast horned lizard prefers open, sandy habitat, which is not present on the project site.
California red-legged frog *Rana draytonii*	FT	SSC	Aquatic, artificial flowing waters, artificial standing waters, freshwater marsh, marsh & swamp, riparian forest, riparian scrub, riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters. Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of	Not expected to occur. The project site does not contain suitable aquatic habitat for this species.

Table 4.6-2 Special-Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
			permanent water for larval development. Must have access to estivation habitat.	
western spadefoot *Spea hammondii*		SSC	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pool, and wetlands. Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not expected to occur. The project site does not contain wetland, vernal pool, or grassland habitat for this species.
giant garter snake *Thamnophis gigas*	FT	ST	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Require adequate water supply through active season (early spring through late fall). Also require upland refugia not subject to flooding during the snake's inactive season.	Not expected to occur. The project site lacks permanent water during the active season, and dredging and vegetation management in the agricultural ditch, and isolation from known populations reduce the potential for the species to occur. The species' current distribution is very fragmented with nine populations occurring in the following areas: Butte Basin, Colusa Basin, Sutter Basin, American Basin, Yolo Basin, Cosumnes-Mokelumne Watershed, Delta Basin, San Joaquin Basin, and Tulare Basin. The only remaining occupied area in the Tulare Basin is the Mendota Wildlife Area located approximately 20 miles west of the project site.
northern California legless lizard *Anniella pulchra*		SSC	Chaparral, coastal dunes, coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential; prefer soils with a high moisture content.	Not expected to occur. The project site does not contain suitable chaparral, coastal dune, or coastal scrub habitat for this species.
Birds				
tricolored blackbird *Agelaius tricolor*		ST SSC	Freshwater marsh, marsh and swamp, swamp, wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Not expected to occur. The project site does not contain suitable nesting habitat for this species.
burrowing owl *Athene cunicularia*		SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	May occur. Potential nesting habitat is present within the edges of agricultural fields and within undeveloped ruderal habitat. Additionally, there have been several recent observations of the species within the vicinity of the project site (eBird 2018).
Swainson's hawk *Buteo swainsoni*		ST	Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	May occur. Potentially suitable large nest trees for Swainson's hawk are present adjacent to the project site, and the project site is within the known range of the species. Additionally, there have been several recent observations of the species within the vicinity of the project site (eBird 2018).

Table 4.6-2 Special-Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
California horned lark *Eremophila alpestris actia*			Marine intertidal and splash zone communities, meadow and seep. Coastal regions, chiefly from Sonoma County to San Diego County. San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	May occur. potential nesting habitat is present along field borders and in ruderal habitat.
yellow-headed blackbird *Xanthocephalus xanthocephalus*		SSC	Marsh and swamp, wetland. Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	Not expected to occur. The project site does not contain suitable marsh, swamp, or wetland habitat for this species.
Fish				
Delta smelt *Hypomesus transpacificus*	FT	SE	Aquatic, estuary. Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities greater than 10 ppt. Most often at salinities less than 2 ppt.	Not expected to occur. The project site does not contain suitable aquatic habitat for this species.
Invertebrates				
California linderiella *Linderiella occidentalis*			Vernal pools. Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	Not expected to occur. The project site does not contain suitable vernal pool habitat for this species.
vernal pool fairy shrimp *Branchinecta lynchi*	FT		Valley and foothill grassland, vernal pool, wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not expected to occur. The project site does not contain suitable vernal pool habitat for this species.
Mammals				
Pallid bat *Antrozous pallidus*		SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in rock crevices, oak hollows, bridges, or buildings.	Not expected to occur. There is no potential roost habitat on the project site.
Fresno kangaroo rat *Dipodomys nitratoides exilis*	FE	SE	Chenopod scrub. Alkali sink-open grassland habitats in western Fresno County. Bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs and grasses.	Not expected to occur. The project site does not contain suitable chenopod scrub or open grassland habitat for this species.
western mastiff bat *Eumops perotis californicus*		SSC	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Not expected to occur. The project site does not contain suitable roosting habitat for this species.

Table 4.6-2 Special-Status Animal Species Known to Occur in the Project Region and their Potential for Occurrence in the Project Site

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
San Joaquin pocket mouse *Perognathus inornatus*			Cismontane woodland, Mojavean desert scrub, valley and foothill grassland. Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. Associated with fine-textured, sandy, friable soils.	Not expected to occur. The project site does not contain woodland or scrub habitat. Most of the project site contains disked earth and cotton crop. A portion of the disked earth contained ruderal grassland; however, the grassland was not open or contiguous with other grassland habitat and would not provide habitat for this species.
American badger *Taxidea taxus*		SSC	Drier open shrub, forest, and herbaceous habitats with friable soils for digging burrows. Needs friable soils and open, uncultivated ground.	Not expected to occur. Agricultural habitats are generally unsuitable for this species. Nearest documented occurrence is a 1989 record of a foraging adult from approximately 2.25 miles west of the project site (west of I-5).
San Joaquin kit fox *Vulpes macrotis mutica*	E	T	Annual grasslands or grassy open areas with scattered shrubs. Needs loose-textured, sandy soils for burrowing and suitable prey base.	Not expected to occur. Agricultural habitats are generally unsuitable for this species.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:		State:	
FE	Endangered (legally protected)	SSC	Species of special concern (no formal protection other than CEQA consideration)
FT	Threatened (legally protected)	SE	Endangered (legally protected)
		ST	Threatened (legally protected)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available in the project area; however, there are little to no other indicators that the species might be present.

Likely to occur: The species, or evidence of its presence, was observed in the project area during reconnaissance surveys, or was reported by others.

Source: CNDDB 2018, eBird 2018, USFWS 2018

4.6.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

This impact evaluation is based on review of existing databases and previously prepared environmental documents, review of aerial photographs, and a reconnaissance-level field survey of the project site conducted in September 2018 described previously in Section 4.6.2, "Environmental Setting." The data reviewed in preparation of this analysis included:

- records search and GIS query of the CNDDB of the Biola, Herndon, Fresno North, Kerman, Kearney Park, Fresno South, Helm, Raisin, and Caruthers U.S. Geological Survey 7.5-minute quadrangles (CNDDB 2018);
- CNPS, Rare Plant Program database search of the Biola, Herndon, Fresno North, Kerman, Kearney Park, Fresno South, Helm, Raisin, and Caruthers U.S. Geological Survey 7.5-minute quadrangles (CNPS 2018);
- reconnaissance-level survey for biological resources of the project site on September 12, 2018;

- official list of threatened and endangered species that may occur in or be affected by the project USFWS Information, Planning, and Conservation System (IPaC) (USFWS 2018); and
- review of the biological resources section of the City of Fresno General Plan and Development Code Update Master Environmental Impact Report (City of Fresno 2014b); and Records search of eBird occurrences (eBird 2018).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on biological resources if it would:

- 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 CDFW or USFWS;
- have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife species to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

ISSUES NOT DISCUSSED FURTHER

Sensitive Natural Communities and Riparian Habitats

No sensitive natural communities or riparian habitat occur within the project site. These habitat types would not be affected by the project. This issue is not discussed further.

Wetlands or other Waters of the United States or State

The project site does not contain any aquatic habitat, including wetlands, ponds, irrigation ditches, or streams. An agricultural ditch is located approximately 70 feet south of the project site and along the western edge of the project site; however, it is outside of the project site and there are no plans to modify or otherwise adversely affect the ditch during project implementation. This issue is not discussed further.

Wildlife Movement Corridors and Nursery Sites

No Essential Connectivity Areas (i.e., important connectivity Areas for wildlife defined by CDFW and California Department of Transportation) or natural landscape blocks have been identified within the project vicinity, and no portion of a known wildlife corridor (e.g., San Joaquin River) or wildlife nursery site is within the project site. Project implementation would not interfere with the movement of any native resident or migratory wildlife species because the project site does not currently provide an important connection between any areas of natural habitat that would otherwise be isolated. This issue is not discussed further.

Consistency with Local Policies or Ordinances

City of Fresno Municipal Code includes a tree preservation policy and the Fresno General Plan includes policies designed to protect and preserve natural habitats within the city. The project site does not contain any trees and project plans do not include any tree removal. Additionally, the project site does not contain natural habitat, nor does any land surrounding the project site. These policies would therefore not apply to the project, and this issue is not discussed further.

Consistency with an Adopted Habitat Conservation Plan

The project site is located within the plan area for the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP) (PG&E 2006). Covered activities under this HCP include routine operations and maintenance activities conducted by PG&E. This project is not under the jurisdiction of PG&E, and thus this HCP would not apply to the project. In addition, the project would not interfere with PG&E's ability to implement its HCP. As a result, no conflicts with the existing HCP would occur. This issue is not discussed further.

Survival of Species

The project area contains no native habitat and provides limited value to wildlife species. Development of the project area would not eliminate any habitat important to the long-term survival of any species or community and would not substantially reduce the number or restrict the range of any species. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.6-1: Cause Disturbance to or Loss of Burrowing Owl

Ground disturbance during project construction, including grading and excavating, could result in disturbance or direct loss of burrowing owl, if present. This would be a **potentially significant** impact.

The nearest known occurrence of burrowing owl is approximately 5.2 miles southwest of the project site (CNDDB 2018), and there have been several recent observations of the species within the project vicinity (eBird 2018). The project site contains potentially suitable nesting habitat for this species within ruderal grassland areas and along the earthen edges of roads and agricultural fields. Similar potential habitat on adjacent parcels could also support these species. Project implementation, including conversion of ruderal and agricultural habitat to other uses may result in loss of this habitat for burrowing owl. Ground disturbance, including grading for site preparation and excavation for utility installation, could result in disturbance or direct loss of burrowing owls and burrows, if present on the project site. Burrowing owls need burrows at all life stages and displacing individuals from their burrows can result in indirect impacts such as predation, increased energetic costs, increased stress, and risks associated with having to find and compete for burrows, all of which can lead to take or reduced reproduction. Disturbance may cause nest abandonment or nest failure and subsequent mortality of chicks or eggs. Loss of an active nest or mortality of chicks and eggs of burrowing owl would be a **potentially significant** impact.

Mitigation Measure 4.6-1: Protection of Burrowing Owl

The applicant shall implement the following conditions prior to and during construction:

- The applicant shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within line of sight of construction activities within 1,500 feet of the project site. Surveys shall be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).
- If no occupied burrows are found, a letter report documenting the survey methods and results shall be submitted to CDFW and no further mitigation would be required.
- If an active burrow is found during the nonbreeding season (September 1 through January 31), the applicant shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained

throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion plan shall be developed, as described in Appendix E of CDFW's 2012 Staff Report. Burrowing owls shall not be excluded from occupied burrows until the project's burrowing owl exclusion plan is approved by CDFW. The exclusion plan shall include a plan for creation, maintenance, and monitoring of artificial burrows in suitable habitat that provides substitute burrows for displaced owls.

- If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and will be provided with a 150- to 1,500-foot protective buffer from construction activities unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The size of the buffer shall depend on the time of year and level disturbance as outlined in the CDFW Staff Report (CDFW 2012). The size of the buffer may be reduced if a broad-scale, long-term, monitoring program acceptable to CDFW is implemented to prevent burrowing owls from being detrimentally affected. Once the fledglings are capable of independent survival, the owls can be evicted and the burrow can be destroyed per the terms of a CDFW-approved burrowing owl exclusion plan developed in accordance with Appendix E of CDFW's 2012 Staff Report. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW. Following owl exclusion and burrow demolition, the site shall be monitored by a qualified biologist to ensure burrowing owls do not recolonize the site prior to construction.
- If active burrowing owl burrows are found on the site and are destroyed during project implementation, the applicant shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report, which states that permanent impacts to nesting, occupied and satellite burrows, and burrowing owl habitat shall be mitigated such that habitat acreage, number of burrows, and burrowing owls adversely affected are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The applicant shall retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards:
  - Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat, disturbance levels, potential for conflicts with humans, pets, and other wildlife, density of burrowing owls, and relative importance of the habitat to the species range wide.
  - If feasible, mitigation lands shall be provided adjacent or proximate to the site so that displaced owls can relocate with reduced risk of take. Feasibility of providing mitigation adjacent or proximate to the project site depends on availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity.
  - If suitable habitat is not available for conservation adjacent or proximate to the project area, mitigation lands shall be focused on consolidating and enlarging conservation areas outside of urban and planned growth areas and within foraging distance of other conservation lands. Mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank and mitigation lands are not available adjacent to other conservation lands, alternative mitigation sites and acreage shall be determined in consultation with CDFW.
  - If mitigation is not available through an approved mitigation bank and will be completed through permittee-responsible conservation lands, the mitigation plan shall include mitigation objectives, site selection factors, site management roles and responsibilities, vegetation management goals, financial assurances and funding mechanisms, performance standards and success criteria, monitoring and reporting protocols, and adaptive management measures. Success shall be based on the number of adult burrowing owls and pairs using the site and if the numbers are maintained over time. Measures of success, as suggested in the CDFW 2012 Staff Report, shall include site tenacity, number of adult owls present and reproducing, colonization by burrowing owls from elsewhere, changes in distribution, and trends in stressors.

Significance after Mitigation

Implementing Mitigation Measure 4.6-1 would reduce potential impacts to burrowing owl to a **less-than-significant** level because burrowing owls would be avoided and protected from construction activities, or the applicant would relocate owls and compensate for project-related loss of suitable occupied habitat in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

Impact 4.6-2: Cause Disturbance to or Loss of Swainson's Hawk and Other Nesting Raptors

Project implementation could result in indirect disturbance of nesting Swainson's hawks potentially resulting in nest abandonment if nests are present in the trees along West Jensen Avenue. This would be a **potentially significant** impact.

There is only one known historic (1956) nesting Swainson's hawk occurrence within approximately 5 miles of the project site (CNDDB 2018); however, there have been several recent observations of the species within the vicinity of the project site (eBird 2018). Potentially suitable nesting habitat for Swainson's hawk is present within large landscape trees along West Jensen Avenue and several smaller trees along South Cornelia Avenue. These trees are approximately 0.25 mile north and east of the proposed facilities. However, West Jensen Avenue would serve as the access point for trucks, and would be approximately 100 feet from the nearest tree. While these trees may provide habitat for Swainson's hawk, they would not provide optimal habitat because of their relatively small size and immaturity. The project site itself does not contain trees, and project implementation does not include tree removal; therefore, no direct impacts to Swainson's hawk would occur. In addition, because the site is currently cultivated in cotton, it is not considered suitable foraging habitat for Swainson's hawk or other nesting raptors. Although the project would not result in direct nest removal, if a nesting Swainson's hawk is present within the trees along West Jensen Avenue or South Cornelia Avenue, project implementation (e.g., presence of construction crews, increased vehicle traffic, and loud noise from construction equipment) could result in indirect nest disturbance. Indirect disturbance to nesting Swainson's hawks could result in nest abandonment and subsequent mortality of eggs or chicks. This would be a **potentially significant** impact.

Mitigation Measure 4.6-2: Protection of Nesting Swainson's Hawk

The applicant shall implement the following measures prior to and during construction:

- If construction activities are conducted outside of the breeding season (September 1 through February 28), then preconstruction surveys are not required.
- For construction activities conducted during the breeding season (March 1 through August 31), the applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site to avoid, minimize, and mitigate potential impacts on Swainson's hawk nesting adjacent to the project site. The surveys shall be conducted no more than 30 days before the beginning of construction. If no nests are found, no further mitigation will be required.
- If active Swainson's hawk nests are found within the nest survey area, the construction contractor shall avoid impacts on such nests by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. CDFW guidelines recommend implementation of 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest.
- No construction activity shall occur within the buffer area of a particular nest until a qualified biologist, in consultation with CDFW, confirms that the chicks have fledged or the nesting cycle has otherwise completed. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Significance after Mitigation

Implementing Mitigation Measure 4.6-2 would reduce potential impacts to nesting Swainson's hawks to a **less-than-significant** level because Swainson's hawks would be avoided and protected from indirect disturbance from construction activities.

Impact 4.6-3: Cause Disturbance to or Loss of California Horned Lark

Project implementation could result in disturbance of nesting California horned lark or direct loss of nests, if present on the project site. This would be a **potentially significant** impact.

California horned lark have been observed recently within the project vicinity (eBird 2018). California horned lark build cup-like nests on the ground in open areas. Potentially suitable nesting habitat for California horned lark is present within ruderal grassland and edges of agricultural habitat within the project site. Project implementation (e.g., ground disturbance, presence of construction crews, increased vehicle traffic, and loud noise from construction equipment) could result in direct or indirect disturbance to California horned lark nests, if present. This could result in nest abandonment and subsequent mortality of eggs or chicks and would be a **potentially significant** impact.

Mitigation Measure 4.6-3: Protection of Nesting California Horned Lark

The applicant shall implement the following conditions prior to and during construction:

- If construction activities are conducted completely outside of the California horned lark breeding season (August 1 through February 28), then preconstruction surveys are not required.
- For construction activities conducted during the California horned lark breeding season (March 1 through July 31), the applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 300 feet of the project site to avoid, minimize, and mitigate potential impacts on California horned lark nesting within the project site. The surveys shall be conducted no more than 30 days before the beginning of construction. If no nests are found, no further mitigation will be required.
- If active California horned lark nests are found within the nest survey area, the construction contractor shall avoid impacts on such nests by establishing a no-disturbance buffer around active nest sites identified during preconstruction surveys. The appropriate buffer size shall be determined by a qualified biologist in consultation with CDFW, based on the nature of the project activity, the extent of existing disturbance in the area, visibility of the disturbance from the nest site, and other relevant circumstances.
- No construction activity shall occur within the buffer area of a particular nest until a qualified biologist, in consultation with CDFW, confirms that the chicks have fledged or the nesting cycle has otherwise completed. Monitoring of the nest by a qualified biologist during construction activities shall be required if the activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Significance after Mitigation

Implementing Mitigation Measure 4.6-3 would reduce potential impacts to nesting California horned lark to a **less-than-significant** level because nest disturbance would be avoided and protected from construction activities.

4.7 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions; a summary of climate change science and GHG sources in California; and quantification of project-generated GHG emissions and discussion about their contribution to global climate change. In addition, mitigation measures are recommended to reduce the project's potential impacts.

4.7.1 Regulatory Setting

FEDERAL PLANS, POLICIES, LAWS, AND REGULATIONS

In *Massachusetts et al. v. Environmental Protection Agency et al.,* 549 U.S. 497 (2007), the Supreme Court of the United States ruled that carbon dioxide (CO_2) is an air pollutant as defined under the federal Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions.

In 2010, EPA started to address GHG emissions from stationary sources through its New Source Review permitting program, including operating permits for "major sources" issued under Title V of the federal Clean Air Act.

In 2015, EPA unveiled the Clean Power Plan. The purpose of the plan was to reduce CO_2 emissions from electrical power generation by 32 percent relative to 2005 levels within 25 years. EPA is proposing to repeal the Clean Power Plan because of a change to the legal interpretation of Section 111(d) of the federal Clean Air Act, on which the Clean Power Plan was based. The comment period on the proposed repeal closed April 26, 2018. A final ruling by EPA has not yet been issued.

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy standards for light-duty vehicles for model years 2017 and beyond (77 Federal Register [FR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630). However, on April 2, 2018, the EPA administrator announced a final determination that the current standards are not appropriate and should be revised. It is not yet known what revisions will be adopted or when they will be implemented (EPA 2018).

STATE PLANS, POLICIES, LAWS, AND REGULATIONS

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades (State of California 2018). GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected (United Nations 2015).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste).

The State has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

Cap-and-Trade Program

CARB administers the State's Cap-and-Trade program, which covers GHG emission sources that emit more than 25,000 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year), such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions. Stationary sources that emit more than 10,000 $MTCO_2e$/year are required to report their GHG emissions annually to CARB pursuant to the Mandatory Reporting Regulation but are not required to reduce GHG emissions until the 25,000 $MTCO_2e$/year cap is exceeded. The existing Darling Ingredients Rendering Plant reported its 2016 GHG emissions to CARB as approximately 11,500 $MTCO_2e$ and is thus not considered a "covered" entity under the Cap-and-Trade program required to reduce GHG emissions. Stationary source emissions are included in the State's GHG emissions inventory and the 2017 Scoping Plan identifies the Cap-and-Trade program as one of the emission sectors that must be reduced to meet the State's 2030 GHG target.

Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles. In addition, the program's zero-emission vehicle (ZEV) regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2016a:15). By 2025, when the rules will be fully implemented, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2016b:1).

Executive Order B-48-18, signed into law in January 2018, requires all state entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and by off-road vehicles, including construction equipment (Wade, pers. comm., 2017).

In addition to regulations that address tailpipe emissions and transportation fuels, the state legislature has passed regulations to address the amount of driving by on-road vehicles. Since the passage of SB 375 in 2008, CARB requires metropolitan planning organizations (MPOs) to adopt plans showing reduction in GHG emissions from passenger cars and light-duty trucks in their respective regions of 2020 and 2035 (CARB 2018a:1). These plans link land use and housing allocation to transportation planning and related mobile-source emissions. The project site is in Fresno County, and the Fresno Council of Governments (Fresno COG) serves as the MPO for Fresno County. Fresno COG adopted its Sustainable Communities Strategy (SCS) in 2014, and adopted its Regional Transportation Plan and updated SCS in 2018. Fresno COG was tasked by CARB to achieve a 5 percent per capita reduction compared to 2005 emissions by 2020 and a 10 percent per capita reduction by 2035, which CARB anticipated the region would exceed by implementing its SCS (CARB 2018a). In March 2018, CARB adopted the Target Update for the SB 375 targets tasking Fresno COG to achieve a 6 percent and a 13 percent per capita reduction by 2020 and 2035, respectively (CARB 2018a).

Under SB 743 of 2013, the Governor's Office of Planning and Research (OPR) proposed changes to the State CEQA Guidelines, including the addition of Section 15064.3, which would require that CEQA transportation analysis move away from focusing on vehicle delay and level of service (LOS) (OPR 2017a:77–90). The amended CEQA Guidelines are effective as of December 28, 2018. In support of these changes, OPR published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether the project would generate a level of vehicle miles traveled (VMT) per capita (or VMT per employee) that is 15 percent lower than that of existing development in the region (OPR 2017b:12–13). OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017b:18). This metric is intended to replace the use of delay and level of service to measure transportation-relate impacts. More detail about SB 743 is provided in the "Regulatory Setting" section of Section 4.12, "Transportation/Traffic."

Legislation Associated with Electricity Generation

The state has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011) and 50 percent by 2030 (SB 350 of 2015).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards. The California Energy Commission (CEC) updates the standards every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current (2016) standards are scheduled to be replaced by the 2019 standards on January 1, 2020. The 2019 standards will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. Additionally, new residential units will be required to include solar panels, sized to offset the estimated electrical requirements of each unit (CCR, Title 24, Part 6, Section 150.1[c]14). CEC estimates that the combination of required energy-efficiency features and mandatory solar panels in the 2019 standards will result in new residential buildings that use 53 percent less energy than those designed to meet the 2016 standards. The CEC also estimates that the 2019 standards will result in new commercial buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficacy lighting (CEC 2018a).

LOCAL PLANS, POLICIES, LAWS, AND REGULATIONS

San Joaquin Valley Air Pollution Control District

San Joaquin Valley Air Pollution Control District (SJVAPD) is the primary agency responsible for addressing air quality concerns in all of San Joaquin County—its role is discussed further in Section 4.4, "Air Quality." SJVAPD also recommends methods for analyzing project-generated GHGs in CEQA analyses and offers multiple potential GHG reduction measures for land use development projects. SJVAPD developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. SJVAPD's goals in developing GHG thresholds include ease of implementation; use of standard analysis tools; and emissions mitigation consistent with AB 32. However, since the passage of SB 32, which mandates a statewide emissions target of 40 percent below 1990 levels by 2030, SJVAPD has not developed new thresholds in compliance with this target.

City of Fresno

City of Fresno General Plan

The City of Fresno General Plan includes the following policies related to reducing GHG emissions in Fresno (City of Fresno 2014).

- **Objective RC-5:** In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take timely, necessary, and the most cost-effective actions to achieve and maintain reductions in greenhouse gas emissions and all strategies that reduce the causes of climate change in order to limit and prevent the related potential detrimental effects upon public health and welfare of present and future residents of the Fresno community.
- **Objective RC-7:** Promote water conservation through standards, incentives and capital investments.
- **Objective RC-:** Reduce the consumption of non-renewable energy resources by requiring and encouraging conservation measures and the use of alternative energy sources.
- **Objective RC-11:** Strive to reduce the solid waste going to landfills to zero by 2035.

Fresno Greenhouse Gas Reduction Plan

The Fresno Greenhouse Gas Reduction Plan (GHG Plan) was required as a policy in the Fresno General Plan and adopted as an appendix to the General Plan Master EIR in 2014. The GHG Plan includes GHG emission reduction targets, strategies, and implementation measures developed to help the City reach these targets. Reduction strategies address GHG emissions associated with land use and transportation, transportation facilities strategies, transportation demand strategies, energy conservation strategies for new and existing buildings, waste diversion and recycling and energy recovery, strategies for existing development, and municipal strategies.

4.7.2 Environmental Setting

THE PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known, but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

As discussed previously, GHG emissions are attributable in large part to human activities. The total GHG inventory for California in 2016 was 429 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) (CARB 2018b). This is less than the 2020 target of 431 $MMTCO_2e$ (CARB 2018c:1). Table 4.7-1 summarizes the statewide GHG Inventory for California.

Table 4.7-1 Statewide GHG Emissions by Economic Sector

Sector	Percent
Transportation	41
Industrial	23
Electricity generation (in state)	10
Electricity generation (imports)	6
Agriculture	8
Residential	7
Commercial	5
Not specified	<1

Source: CARB 2018b

As shown in Table 4.7-1, transportation, industry, and electricity generation are the largest GHG emission sectors.

Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

A GHG inventory for the City of Fresno is provided in the City's General Plan and Development Code Update and summarized in Table 4.7-2.

Table 4.7-2 City of Fresno Greenhouse Gas Emissions Inventory for 2010 and Adjusted Building-as-Usual Forecast Years ($MTCO_2e$)

Emissions Sector	2010	2020	2035
Motor Vehicles	1,795,666	1,748,773	1,745,843
Electricity – Residential	289,745	209,178	258,766
Electricity – Commercial	319,817	230,591	290,861
Natural Gas – Residential	400,169	468,696	506,670
Natural Gas – Commercial	448,706	497,117	553,452
Solid Waste	123,945	147,628	177,508
Off-Road Equipment	1,051	1,138	1,314
Ozone Depleting Substance Substitutes	273,422	288,392	347,367
Total	3,652,521	3,591,513	3,881,781

Notes: Totals may not add due to rounding.

$MTCO_2e$ = metric tons of carbon dioxide equivalent

Sources: City of Fresno 2014

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is

expected to increase by 3.7 to 4.8 degrees Celsius (°C) (6.7 to 8.6 degrees Fahrenheit [°F]) by the end of the century unless additional efforts to reduce GHG emissions are made (IPCC 2014:10). According to CEC, temperatures in California will warm by approximately 2.7°F above 2000 averages by 2050 and by 4.1°F to 8.6°F by 2100, depending on emission levels (CEC 2012:2).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In recent years, California has been marked by extreme weather and its effects. According to CNRA's *Safeguarding California Plan: 2018 Update,* California experienced the driest 4-year statewide period on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2014 and 2015 (CNRA 2018:55). In contrast, the northern Sierra Nevada experienced its wettest year on record during the 2016-2017 water year (CNRA 2018:64).

The changes in precipitation exacerbate wildfires throughout California with increasing frequency, size, and devastation. As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018:190–192). Furthermore, in the extreme climate scenario, the sea level along California's coastline could rise up to 10 feet by 2100, which is approximately 30 to 40 times faster than sea level rise experienced over the last century (CNRA 2017:102). Changes in temperature, precipitation patterns, extreme weather events, wildfire, and sea-level rise have the potential to threaten transportation and energy infrastructure and crop production (CNRA 2018:64, 116–117, 127).

Cal-Adapt is a climate change scenario planning tool developed by CEC that downscales global climate model data to local and regional resolution under two emissions scenarios. The Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a future with reduced GHG emissions. According to Cal-Adapt, annual average temperatures in the project area are projected to rise by 4.0 to 5.5°F by 2090, with the low and high ends of the range reflecting the lower and higher emissions scenarios (CEC 2018b).

Fresno County experienced an annual average high temperature of 67.7°F between 1950 and 2005. Under the RCP 4.5 scenario, the county's annual average high temperature is projected to increase by 3.2°F to 70.9°F by 2050 and increase an additional 2.2°F to 73.1°F by 2099 (CEC 2018b). Under the RCP 8.5 scenario, the county's annual average high temperature is projected to increase by 3.7°F to 71.4°F by 2050 and increase an additional 4.2°F to 75.6°F by 2099 (CEC 2018b).

Fresno County experienced an average precipitation of 21.8 inches per year between 1950 and 2005. Under the RCP 4.5 scenario, the county is projected to experience an increase of 1.9 inches to 23.7 inches per year by 2050 and decrease to 22.2 inches per year by 2099 (CEC 2018b). Under the RCP 8.5 scenario, the county is projected to experience an increase of 1.2 inches to 23 inches per year by 2050 and increase to 24 inches per year by 2099 (CEC 2018b).

4.7.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

GHG emissions associated with the project would be generated during project construction and during operation after the project is built. Estimated levels of construction- and operation-related GHGs are presented below. The project is evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions, including the 2017 Scoping Plan, Fresno's adopted RTP/SCS, and the City of Fresno General Plan and CAP.

The 2017 Scoping Plan also identifies how GHG emissions associated with projects could be evaluated under CEQA (CARB 2017:101–102). Specifically, it states that achieving "no net increase" in GHG emissions is an appropriate overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction cannot be demonstrated. CARB recognizes that is may not be appropriate or feasible for every development project to mitigate

its GHG emissions to zero and that an increase in GHG emissions due to a project may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change.

Construction-Related Greenhouse Gas Emissions

Short-term construction-generated GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 (California Air Pollution Control Officers Association 2016), as recommended by SJVAPCD and other air districts in California. Modeling was based on project-specific information (e.g., building size, area to be graded, area to be paved, energy information) where available; assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type. Construction of the project was assumed to begin in 2019 and end in 2020.

Operational Greenhouse Gas Emissions

Operation-related emissions of GHGs were estimated for the following sources: area sources (e.g., landscape maintenance equipment), energy use (i.e., electricity and natural gas consumption), water use, solid waste generated, and mobile sources in 2021. Operation-related mobile-source GHG emissions were modeled based on the estimated level of VMT by employees and deliveries. VMT estimates were derived from data generated during the traffic impact analysis conducted for the project (see Section 4.12, "Transportation/Traffic").

Detailed model assumptions and inputs for these calculations are presented in Appendix B.

THRESHOLDS OF SIGNIFICANCE

The issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the project's impact on climate change is addressed only as a cumulative impact.

State CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans and discuss and inconsistencies with applicable regional plans, including plans to reduce GHG emissions. Under Appendix G of the State CEQA Guidelines, implementing a project would result in a cumulatively considerable contribution to climate change if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

SJVAPCD policy provides for a tiered approach in assessing significance of project-specific GHG emission increases, as shown below.

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less-than-significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA-compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement Best Performance Standards (BPS).
- Projects implementing BPS would not require quantification of project-specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project-specific GHG emissions and demonstration that project-specific GHG emissions would be reduced or mitigated by at least 29 percent, and compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period, consistent with GHG emission reduction targets established in the 2017 Scoping Plan. Projects achieving

at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less-than-significant individual and cumulative impact for GHGs.

IMPACT ANALYSIS AND MITIGATION MEASURES

Impact 4.7-1: Generation of Greenhouse Gas Emissions

The project would result in GHG emissions from construction activities including exhaust from worker commute trips, materials delivery, and the use of heavy-duty construction equipment that would result in a total of 619 $MTCO_2e$. The project would result in increases in energy consumption and vehicle trips that would result in approximately 12,800 $MTCO_2e$/year. However, this amount of GHG emissions is below the Cap-and-Trade limit of 25,000 $MTCO_2e$/year. Additionally, the project would implement SJVAPCD-recommended BPS for stationary sources which would result in additional GHG emission reductions of approximately 6 percent. For these reasons project-related GHG emissions would not conflict with applicable plans, policies, or regulations that have been adopted with the goal of reducing GHG emissions. This impact would be **less than significant**.

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the project site, and off-road construction equipment (e.g., dozers, graders, excavators). Project construction would include five primary phases: grading and site preparation; utility installation and connection; roadway, driveway, and parking lot construction; building construction and equipment installation; and landscape installation. Construction equipment would vary by phase, but the entire construction process would include operation of the following types of equipment: graders, dozers, excavators, scrapers, water trucks, cranes, forklifts, generators, pavers, rollers, welders, and air compressors. Construction of the land uses proposed under the project would occur over approximately a 2-year period. Project construction would be anticipated to start in 2019 and continue until late-2020.

Total construction emissions for each year of construction are summarized in Table 4.7-3. Additional details on the modeling assumptions, inputs, and outputs are provided in Appendix B.

Table 4.7-3 Greenhouse Gas Emissions Associated with Project Construction by Year

Construction Year	GHG Emissions ($MTCO_2e$/year)
2019	327
2020	292

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year.
See Appendix B for detailed input parameters and modeling results.
Source: Modeling performed by Ascent Environmental in 2018

As shown in Table 4.7-3, construction activities would result in maximum annual emissions of 327 $MTCO_2e$ per year. For comparison, many air districts in California (e.g., Bay Area Air Quality Management District, Sacramento Metropolitan Air Quality Management District) have adopted construction-related GHG thresholds of 1,100 $MTCO_2e$/year for stationary sources. SJVAPCD has not adopted a construction-related GHG threshold for stationary sources.

Operational activities related to the project would be similar to those of the existing rendering facility but would include an increase in processing capacity. Daily operations would increase from a processing capacity of 850,000 pounds per day to 10 million pounds per week (or approximately 2 million pounds per day). The proposed expansion would result in 40 additional daily delivery truck trips and up to 23 new employees. The proposed facility would be a total of 44,600 square feet (sf), including a larger processing floor, stationary mechanical equipment (e.g., cooker, boiler, presser), and a truck shop/loading dock, approximately 16,800 sf larger than the existing facility.

Emissions would be associated with mobile sources from worker commute and delivery trucks, as well as stationary sources from on-site processing equipment (e.g., rendering units, boilers, generators). The project would relocate next to the existing RWRF, which would provide the project with 18 percent of its natural gas demand through conditioned gas produced from waste methane. This 18 percent was excluded from the project's estimated GHG contribution because it is reuse of otherwise-released GHGs from the RWRF. The emissions quantified for this analysis address only the increase in operations, excluding the existing facility's contribution.

The project's operational GHG emissions were estimated for 2021, which is the year when the proposed land uses would become fully operational. Emissions associated with mobile trips were based on the VMT estimates (provided by Fehr & Peers as part of its traffic analysis for the project), specifically, the increase in vehicle trips for both employees and trucks. The vehicle emissions were estimated using CalEEMod Version 2016.3.2. Water consumption-, wastewater treatment-, and solid waste generation-related GHG emissions were also estimated using CalEEMod. Natural gas and electricity demand data were provided by the project proponent and emissions were calculated using utility provider emission factors. The utility provider was assumed to be Pacific Gas & Electric (PG&E) and 2020 emission factors were used based on PG&E-reported intensities (PG&E 2015).

Table 4.7-4 summarizes all the direct and indirect annual GHG emissions associated with the project upon completion in 2021. These emissions estimates account for existing regulations pertaining to vehicle emissions. See Appendix B for modeling assumptions.

Table 4.7-4 Summary of Annual Greenhouse Gas Emissions Associated with the Project at Completion (2021)

Emissions Activity	GHG Emissions ($MTCO_2e$/year)
Vehicle Trips (Mobile Sources)	1,191
Electricity Consumption	570
Natural Gas (excluding RWRF-provided gas)	10,992
Water Consumption and Wastewater Treatment	57
Solid Waste Generation	28
Total Annual Emissions	12,837

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; RWRF = Fresno-Clovis Wastewater Reclamation Facility.

See Appendix B for detailed input parameters and modeling results.

Source: Modeling performed by Ascent Environmental in 2018

As shown in Table 4.7-4 above, operation of the project would result in annual emissions of 12,837 $MTCO_2e$/year. This is less than the Cap-and-Trade emissions limit of 25,000 $MTCO_2e$/year. (It should be noted that the Cap-and-Trade emissions limit does not consider mobile-source emissions, whereas the project's annual emissions identified in Table 4.7-4 does include them; therefore, this analysis is conservative.) As described in Chapter 2, "Project Description," the project would implement SJVAPCD-recommended BPS for stationary equipment. The application of BPS would, consistent with SJVAPCD guidance, support the determination that the project has a less than significant individual and cumulative impact on global climate change. Because the project has included BPS in the project design, and the project would comply with the Cap-and-Trade program that assists the State in achieving 2030 GHG reduction targets, the project would not conflict with applicable plans, policies, or regulations that have been adopted with the goal of reducing GHG emissions. Therefore, this impact would be **less than significant.**

Mitigation Measures

No mitigation is required for this impact.

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4.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the project's potential impacts related to hazards and hazardous materials. The evaluation provided in this section is based on public databases containing lists of known and significant hazardous waste/hazardous material sites, such as records from the State Water Resources Control Board (SWRCB) GeoTracker and California Department of Toxic Substances (DTSC) EnviroStor.

4.8.1 Regulatory Setting

FEDERAL

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as requiring measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are primarily contained in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the Code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws.

- The Toxic Substances Control Act of 1976 (15 U.S. Code [USC] Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint hazards in paint, dust, and soil.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.
- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The U.S. Department of Transportation (USDOT) regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials transport regulations are enforced by the Federal Highway Administration, U.S. Coast Guard, Federal Railroad Administration, and Federal Aviation Administration.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law

91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials and those required for excavation and trenching.

STATE

Management of Hazardous Materials

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. The federal law, SARA Title III or EPCRA, described above, encourages and supports emergency planning efforts at the state and local levels and to provide local governments and the public with information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities. The provisions of EPCRA apply to four major categories:

- emergency planning,
- emergency release notification,
- reporting of hazardous chemical storage, and
- inventory of toxic chemical releases.

The corresponding state law is Chapter 6.95 of the California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory). Under this law, qualifying businesses are required to prepare a Hazardous Materials Business Plan, which would include hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. At such time as the applicant begins to use hazardous materials at levels that reach applicable state and/or federal thresholds, the plan is submitted to the administering agency.

DTSC, a division of the California Environmental Protection Agency (Cal/EPA), has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. As required by Section 65962.5 of the California Government Code, DTSC maintains a hazardous waste and substances site list for the State, known as the Cortese List. Individual regional water quality control boards (RWQCBs) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks (USTs). The Central Valley RWQCB has jurisdiction over the project site.

Transport of Hazardous Materials and Hazardous Materials Emergency Response Plan

The State of California has adopted USDOT regulations for the movement of hazardous materials originating within the state and passing through the state; state regulations are contained in 26 California Code of Regulations (CCR). State agencies with primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers to transport hazardous waste on public roads.

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the Governor's Office of Emergency Services, which coordinates the responses of other agencies in the project area.

Hazardous Waste Control Law and Universal Waste Rule

Under CCR Title 22 and the California Hazardous Waste Control Law, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. California's Universal Waste Rule allows individuals and businesses to transport, handle, and recycle certain common hazardous wastes, termed universal wastes, in a manner that differs from the requirements for most hazardous wastes. Universal wastes include televisions, computers, and other electronic

devices, as well as batteries, fluorescent lamps, mercury thermostats, and other mercury-containing equipment. The hazardous waste regulations (CCR Title 22, Division 4.5, Chapter 11) identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported and recycled following the simple requirements set forth in the universal waste regulations.

Responsibility for Fire Protection and Hazardous Fire Areas

Public Resources Code (PRC) Sections 4125 to 4137 establish that the California Department of Forestry and Fire Protection (CAL FIRE) has the primary responsibility for preventing and extinguishing wildland fires within the State Responsibility Area. CAL FIRE also has responsibility for enforcement of Fire Safe Standards as required by PRC 4290 relating to road standards for fire equipment access; standards for signs identifying streets, roads, and buildings; minimum private water supply reserves for emergency fire use; and fuel breaks and greenbelts.

California Accidental Release Prevention Program

The goal of the California Accidental Release Prevention Program (CCR Title 19, Division 2, Chapter 4.5) is to reduce the likelihood and severity of consequences of any releases of extremely hazardous materials. Any business that handles regulated substances (chemicals that pose a major threat to public health and safety or the environment because they are highly toxic, flammable, or explosive, including ammonia, chlorine gas, hydrogen, nitric acid, and propane) must prepare a risk management plan. The risk management plan is a detailed engineering analysis of the potential accident factors present at a business and the measures that can be implemented to reduce this accident potential. The plan must provide safety information, hazard data, operating procedures, and training and maintenance requirements. The list of regulated substances is found in Article 8, Section 2770.5 of the program regulations.

California Fire Code

The California Fire Code is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. The California Fire Code also contains requirements related to emergency planning and preparedness, fire service features, building services and systems, fire-resistance-rated construction, fire protection systems, and construction requirements for existing buildings, as well as specialized standards for specific types of facilities and materials.

Management of Construction Activities

Through the Porter-Cologne Water Quality Act and the National Pollution Discharge Elimination System (NPDES) program, RWQCBs have the authority to require proper management of hazardous materials during project construction. For a detailed description of the Porter-Cologne Water Quality Act, the NPDES program, and the role of the Central Valley RWQCB, see Section 4.9, "Hydrology and Water Quality."

The SWRCB adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Worker Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Cal/OSHA conducts onsite evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Title 8 of the CCR also includes regulations that provide for worker safety when blasting and explosives are utilized during construction activities. These regulations identify licensing, safety, storage, and transportation requirements related to the use of explosives in construction.

LOCAL

Fresno General Plan

The City of Fresno General Plan (2014a) includes the following policies that pertain to Hazards and Hazardous materials and are relevant to this analysis:

- **Policy NS-4-a: Processing and Storage:** Require safe processing and storage of hazardous materials, consistent with the California Building Code and Uniform Fire Code, as adopted by the City.
- **Policy NS-4-b: Coordination:** Maintain a close liaison with the Fresno County Environmental Health Department, Cal-EPA Division of Toxics, and the State Office of Emergency Services to assist in developing and maintaining hazardous material business plans, inventory statements, risk management prevention plans, and contingency/emergency response actions plans.
- **Policy NS-4-e: Compliance with County Program**: Require that the production, use, storage, disposal, and transport of hazardous materials conform to the standards and procedures established by the County Division of Environmental Health. Require compliance with the County's Hazardous Waste Generator Program, including the submittal and implementation of a Hazardous Materials Business Plan, when applicable.
- **Policy NS-4-f: Hazardous Materials Facilities:** Require facilities that handle hazardous materials or hazardous wastes to be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.
- **Policy NS-6-f: Emergency Vehicle Access:** Require adequate access for emergency vehicles in all new development, including adequate widths, turning radii, hard standing areas, and vertical clearance.

Fresno Municipal Code

Section 15-2514 Fire and Explosive Hazards

Pursuant to Section 15-2514 all activities involving the processing, use, or storage of flammable and explosive materials shall be equipped with adequate safety devices in accordance with the Fire Code and shall be approved by the Fresno Fire Department. In addition, the use, handling, storage, and transportation of hazardous materials shall comply with the provisions of applicable federal and state laws.

Fresno County Department of Public Health

A Certified Unified Program Agency (CUPA) is a local agency that has been certified by Cal/EPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. The Fresno County Department of Public Health is the certified CUPA for the City of Fresno and vicinity. As such, Fresno County provides oversight of businesses that (CERS 2015):

- require hazardous materials business plans;
- require California accidental release prevention plans;
- operate underground storage tanks;
- operate aboveground storage tanks;
- generate aboveground storage tanks;
- generate hazardous waste(s); and
- have onsite treatment of hazardous waste/tiered permits.

Compliance is achieved through routine inspections of regulated facilities, and investigation of citizen-based complaints and inquiries regarding improper handling and/or disposal of hazardous materials and/or hazardous waste.

4.8.2 Environmental Setting

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined in the CFR as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> "Hazardous material" means 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 if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.
>
> "Hazardous wastes" are defined in California Health and Safety Code Section 25141(b) as wastes that:
>
> > … because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

LAND USE HISTORY

Historical uses on the project site include crop cultivation. Chemicals formerly used in agriculture included heavy metals and organic compounds, such as dichloro-diphenyl-trichloroethane (DDT), which may persist in soil for decades; therefore, residue from pesticides, fertilizers, and other agricultural chemicals may be present on the site. Current agricultural practices do not generally employ toxic chemicals with long persistence.

HAZARDOUS MATERIALS SITES

In California, regulatory databases listing hazardous materials sites provided by federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. The Cortese List is located on Cal/EPA website and is a compilation of the following lists:

- list of Hazardous Waste and Substances sites from DTSC's EnviroStor database;
- list of Leaking Underground Storage Tank (LUST) sites from SWRCB's GeoTracker database;
- list of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- list of active Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB; and
- list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed in the EnviroStor database.

The SWRCB GeoTracker database includes LUSTs; permitted underground storage tanks; and spills, leaks, investigations, and cleanup database sites. The DTSC EnviroStor database includes federal and state response sites; voluntary, school, and military cleanups and corrective actions; and permitted sites. The five databases cited above identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The status of these sites change as identification, monitoring, and clean-up of hazardous materials progress. Typically, a site is closed once it has been demonstrated that existing site uses combined with the levels of identified contamination on-site present no significant risk to human health or the environment.

Based on a review of the SWRCB GeoTracker database, the EPA Envirofacts/Enviromapper website, and the state Cortese list via the DTSC EnviroStor database, no hazards were identified on-site. There was a LUST located near the project site at 5607 Jensen Avenue West; however, cleanup was completed in 2000 (SWRCB 2018, EPA 2016, DTSC 2016).

AIRPORTS AND AIR HAZARDS

Airport influence areas are used in land use planning to identify areas commonly overflown by aircraft as they approach and depart an airport, or as they fly within established airport traffic patterns. The closest airport, Fresno Chandler Executive airport, is 3.5 miles northeast of the project site. Bland Field, a small privately-owned airport, is approximately 8 miles west of the project site and Fresno-Yosemite International Airport is approximately 10 miles northeast of the project site. The project site is not located within any airport planning area zones.

EMERGENCY RESPONSE

The City of Fresno has an Emergency Operations Plan that describes actions the City would take in response to an emergency. This plan establishes requirements for the emergency management organization to mitigate emergency disasters affecting the City of Fresno. This includes the operation concepts and procedures associated within initial response operations to emergencies, the extended response operations, and the recovery process (City of Fresno 2014b:5.8-8).

WILDLAND FIRE HAZARD

The project site is surrounded by industrial development and irrigated agricultural land. The site is not located within a designated urban-wildland interface area and is not in or near the State Responsibility Area. According to maps published by CAL FIRE, the City of Fresno does not contain any land classified as a "Very High Fire Hazard Severity Zone." The project site is classified as "Unzoned" (CAL FIRE 2007).

4.8.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

For the purpose of this assessment, hazardous materials are defined as any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a substantial present or potential hazard to human health and safety, or to the environment, if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code, Section 25501[o]).

The following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions on or near the project site to determine the potential for project implementation to result in an increased health or safety hazard to people or the environment. This includes SWRCB and EPA hazardous materials database information.

The analysis below has been written recognizing the direction from a CEQA California Supreme Court decision addressing the scope of analysis required in environmental impact reports for potential impacts resulting from existing environmental hazards in the vicinity of a site for a proposed project. In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377 ("CBIA"), the Court held that:

> "In light of CEQA's text, statutory structure, and purpose, we conclude that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or

> conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users." (*Id*. at pp. 377-378).

The court directed that CEQA does not routinely require in all circumstances the consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project site. But if the project might exacerbate an existing hazard, the lead agency must then analyze the exposure of future residents and users to the hazard. Also, the court did not prohibit an agency from considering how existing hazards might impact a project's future users, so for publicly sponsored and implemented projects, the lead agency retains this discretion. For the proposed project, the City is addressing the potential for exposure of nearby sensitive receptors to reasonably foreseeable future environmental hazards.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact related to hazardous materials and public health if it would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site that is included on a list of hazardous-materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- 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, result in a safety hazard or excessive noise for people residing or working in the project area;
- impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

ISSUES NOT DISCUSSED FURTHER

There are no schools located within 0.25 mile of the project site. The nearest school, Westpark Elementary, is located more than 1.5 miles southeast of the project site. Therefore, there would be no impact on nearby schools, and this issue will not be discussed further.

The project site does not contain known hazards and is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, there would be no impact related to hazardous materials sites, and this issue will not be discussed further.

The project site is not located within an adopted airport land use plan nor within 2 miles of a public airport or private airstrip. Therefore, there would be no impact, and these issues are not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.8-1: Create a Significant Hazard Through Transport, Use, or Disposal of Hazardous Materials

The proposed project would involve routine transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) during construction activities. Additionally, long-term operation activities include processing food byproducts generated by local packers, restaurants, food service establishments, butchers, and grocers into animal- and vegetable-derived fats and proteins. However, compliance with existing, applicable rules and regulations specifically designed to protect the public health would be sufficient to preclude significant hazardous materials impacts. This impact would be **less than significant**.

Short-term Construction Impacts

Proposed construction activities would temporarily involve transportation, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) that are commonly used at construction sites. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the USDOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the state and followed by private state-licensed, certified, and bonded transportation companies and contractors.

Further, pursuant to 40 CFR 112, the project would be required to prepare a spill prevention and treatment plan for rapidly, effectively, and safely cleaning up and disposing of any spills or releases that may occur during construction at the project site. As required under state and federal law, notification and evacuation procedures for site workers and local residents would be included as part of the plan in the event of a hazardous materials release during on-site construction.

In addition to 40 CFR 112, SWRCB Construction General Permit (2009-0009 DWQ) requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and BMPs to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas. Compliance with the aforementioned regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction.

Long-Term Operational Impacts

The project would relocate an existing rendering, recycling, and recovery operation that collects and processes raw material (primarily beef fat, bone, and offal) into bone meal and purified fat that can be used to make animal feed, oleo chemicals (e.g., soaps, cosmetics), fuel (e.g., biodiesel), and lubricants. The primary activities at the facility include processing food byproducts generated by local packers, restaurants, food service establishments, butchers, and grocers into animal- and vegetable-derived fats and proteins. These finished products would be sold as ingredients to produce animal feed, fertilizer, and biofuels.

In addition, operation of the facility would require raw materials to be collected and delivered to the facility for processing 6 to 7 days per week. Processing would typically begin on Monday and run through Saturday. The regional collection routes and delivery schedules would be variable and would likely change day to day depending on the work schedules of the byproduct generators. Raw materials would be delivered to the facility by way of applicant-owned trucks, contract haulers, and customer-owned trucks. Although the truck route would be locally limited to Jensen Avenue, the routes may vary for the portions of truck trips that occur outside the city. Delivery

schedules would be relatively stable with only limited seasonal fluctuations. The equipment used in the collection and delivery of these of raw materials to the facility would be maintained in good operating condition and travel in a closed/covered condition, consistent with industry standards.

The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government. Hazardous materials are required to be stored in designated areas designed to prevent accidental release to the environment. CBC requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal and state laws related to the storage of hazardous materials would be implemented to maximize containment and to provide for prompt and effective clean-up if an accidental release occurs.

As described above for construction, conformance with established policies would reduce the potential for improper handling of materials and wastes that could result in accidental releases. Commercial uses on the project site would prepare and implement hazardous materials plans, such as the following, to avoid occurrences, and minimize the effects of, hazardous materials spills and releases:

- Fresno County hazardous materials business plan (pursuant to General Plan Policy NS-4-e), which requires businesses to properly store and use chemicals.
- California hazardous materials business plan (pursuant to California Health and Safety Code Section 25500), which specifies requirements for material inventory management, inspections, training, recordkeeping, and reporting.
- A spill prevention, containment, and countermeasures plan (pursuant to 40 CFR 112) or, for smaller quantities, a spill prevention and response plan, which identifies BMPs for spill and release prevention and provides procedures and responsibilities for rapidly, effectively, and safely cleaning up and disposing of any spills or releases.

Pursuant to Fresno Municipal Code Section 15-2514, the facility would be equipped with adequate safety devices approved by the Fresno Fire Department. Further, operation of the facility (and associated use of fuels, oils, and other industrial-related hazardous materials) would be located farther away from existing sensitive uses than the current location of the rendering facility. Therefore, potential for the project to release hazardous materials and expose sensitive user groups to such releases to would be unlikely. The use and handling of any hazardous materials by the facility would be in accordance with applicable laws and regulations and therefore would not create a significant hazard to the public or the environment. This would be a **less-than-significant** impact.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.8-2: Create Potential Human Hazards from Exposure to Existing On-Site Hazardous Materials

Construction activities that disturb subsurface materials could encounter previously unidentified contamination from historic agricultural use of the site. Encountering these hazardous materials could expose workers, the public, or the environment to adverse effects depending on the volume, materials involved, and concentrations. This would be a **potentially significant** impact.

Data on historic and documented releases of hazardous materials in the surrounding area were obtained through internet searches including review of the SWRCB GeoTracker database, the EPA Envirofacts/Enviromapper website, and the state Cortese list via the DTSC EnviroStor database. No hazards were identified on-site. However, because of the historic agricultural use of the site, residue from pesticides, fertilizers, and other agricultural chemicals may be present, including potential metals and organic compounds, such as DDT (which were historically common in agrochemicals, but are no longer used). If concentrations of these toxic compounds in the soil are high, the project could expose individuals coming into contact with the soil, such as construction workers, to increased health risk.

Because potentially toxic chemicals associated with previous agricultural activities may be present in project site soils and, when soil is disturbed during construction activities, could expose construction workers or residents in the vicinity to increased health risk, the impact would be **potentially significant**.

Mitigation Measure 4.8-2: Prepare Environmental Site Assessment

Before initiation of grading or other groundwork, the project applicant shall retain a qualified environmental professional to conduct a Phase I environmental site assessment (ESA), consistent with the American Society for Testing and Materials standards (ASTM E1527). The Phase I ESA will evaluate the likelihood that hazardous chemicals are present and whether soil sampling is necessary. If the Phase I ESA indicates that contamination is unlikely, no further mitigation is necessary other than any recommendations identified in the Phase I ESA (such as stopping work if stained soil is encountered). If the Phase I ESA indicates that additional soil sampling or other further evaluation is necessary, the project proponent shall hire a qualified environmental professional to conduct a Phase II ESA to determine the presence and extent of contamination. The assessment will include soil sampling consistent with DTSC's guidelines for development of former agricultural properties. (The investigation may include borings and composite samples for organochlorine pesticides and samples for arsenic.) If the results indicate that contamination exists at levels above regulatory action standards, then the site will be remediated in accordance with recommendations made by applicable regulatory agencies, including Fresno County Environmental Health Department, RWQCB, and DTSC. The agencies involved shall depend on the type and extent of contamination. If remediation is necessary, the applicant shall hire a qualified environmental professional to prepare a work plan that identifies necessary remediation activities, including excavation and removal of on-site contaminated soils, appropriate dust control measures, and redistribution of clean fill material on the project site. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil removed from the site. The plan shall also identify when and where soil disturbing construction activities may safely commence.

Significance after Mitigation

Implementation of Mitigation Measure 4.8-2 would reduce this impact to a **less-than-significant** level by requiring the project applicant to appropriately identify, and if present, remediate any on-site soil contamination related to prior use of the site.

Impact 4.9-3 Impair Emergency Response or Evacuation Plans

The project site plans would be required to meet all Fire Department and General Plan Policy requirements for emergency vehicle access. Compliance with these regulations would ensure the proposed access points would meet requirements for emergency vehicle access, turnaround, and vertical clearance, as well as secure evacuation routes. Vehicle traffic generated by the proposed project would not substantially increase traffic on local roadways. Therefore, the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. This impact would be **less than significant**.

The City has an Emergency Operations Plan; however, the City does not identify formal evacuation routes. Implementation of the project would result in construction of industrial structures on-site and would include two dedicated access points. The access point along Jensen Avenue would serve as the dedicated truck route, and employees would access the site via Cornelia Avenue. Having two access points would reduce potential obstruction of emergency vehicle access. The site plan would be reviewed by the City Fire Department and the final site plan would be required to meet all Fire Department and General Plan Policy NS-6-f requirements for emergency vehicle access, turnaround, and vertical clearance, as well as secure evacuation routes. As discussed in Section 4.12, "Transportation," the project would not substantially increase traffic on local roadways. Accordingly, the roadway traffic generated by the proposed project would not obstruct emergency vehicle response, an adopted emergency response plan, or evacuation plan. Therefore, implementation of the project would result in a **less-than-significant** impact.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.9-4 Create a Significant Risk from Wildfires

The project site is surrounded by existing development and irrigated agricultural land, the likelihood for wildland fire in this area is low. Compliance with existing regulations would ensure proposed development meets the standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards. Therefore, the project would not create a significant risk from wildfires and this impact would be **less than significant**.

The City of Fresno is composed of largely urbanized areas and agricultural land. Although the city is near high and very high fire hazard designated areas, wildfire threat in the city is considered low to moderate due to its developed nature (City of Fresno 2014a:9-31). Further, according to maps published by CAL FIRE, the City of Fresno does not contain land classified as "Very High Fire Hazard Severity Zones." The project site is surrounded by existing development and irrigated agricultural land. Accordingly, the likelihood for wildland fire in this area is low. Implementation of the project would result in construction of several structures that would be occupied by humans; therefore, all constructed buildings would be required to meet the building standards in Chapter 7A of the CBC, which includes safety measures to minimize the threat of wildfire (CAL FIRE 2007). In addition, the proposed project would be required to comply with Title 14 of the CCR which sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply that help reduce risks associated with wildfires. The project would also be served by well water in the case of emergency. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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4.9 HYDROLOGY AND WATER QUALITY

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions at the project site, and evaluates the project's potential hydrology and water-quality impacts.

4.9.1 Regulatory Setting

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board (SWRCB) and its nine-regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established under the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

"Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of "State Plans, Policies, Regulations, and Laws" section below).

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a one percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain, if the development is expected to increase flood elevation by 1 foot or more.

STATE

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Clean Water Act. The applicable RWQCB for the proposed project is the Central Valley RWQCB. The SWRCB and the Central Valley RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plan for the Central Valley Region includes a comprehensive list of waterbodies within the region and detailed language about the components of applicable Water Quality Objectives (WQOs). Through the Basin Plan, the Central Valley RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, non-contact and contact water recreation, groundwater recharge, fresh water replenishment, hydroelectric power generation, and preservation and enhancement of wildlife, fish, and other aquatic resources.

The Central Valley RWQCB also administers the adoption of waste discharge requirements (WDRs), manages groundwater quality, and adopts projects within its boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

The SWRCB adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). Stormwater is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains that eventually drain untreated into a local waterbody.

In 2016, the Central Valley RWCQB issued a region-wide MS4 permit (Order No. R5-2016-0040) covering the entire Central Valley Region, including the City of Fresno, to promote greater watershed/drainage shed coordination, water quality measure protections, and program implementation efficiencies (California Water Boards 2018).

California Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the Acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). In 2017, the North Kings Groundwater Sustainability Agency (North Kings GSA) elected to become a GSA pursuant to Water Code Section 10723.8 and undertake sustainable groundwater management in the portion of the Kings Subbasin underlying the agency's boundary. The North Kings Groundwater GSA is a joint powers authority consisting of the following public agencies: Fresno Irrigation District, County of Fresno, City of Fresno, City of Clovis, City of Kerman, Biola Community Services District, Garfield Water District, and International Water District (North Kings GSA 2017). The North Kings Groundwater GSA is currently developing a groundwater management plan for the Kings Subbasin.

LOCAL

Fresno General Plan

The City of Fresno General Plan (2014a) includes the following policies that pertain to hydrology and water quality and are relevant to this analysis.

- **Policy NS-3-h Runoff Controls:** Implement grading regulations and related development policies that protect area residents from events that exceed the capacity of the Storm Drainage and Flood Control Master Plan system of facilities.
- **Policy NS-3-i New Development Must Mitigate Impact:** Require new development to not significantly impact the existing storm drainage and flood control system by imposing conditions of approval as project mitigation, as authorized by law. As part of this process, closely coordinate and consult with the FMFCD to identify appropriate conditions that will result in mitigation acceptable and preferred by FMFCD for each project.
- **Policy PU-7-a Reduce Wastewater:** Identify and consider implementing water conservation standards and other programs and policies, as determined appropriate, to reduce wastewater flows.
- **Policy PU-7-f Food and Drink Industry:** Ensure adequate provision of facilities for the appropriate management of wastewater from wineries and food processing and beverage facilities, including conformance with Waste Discharge Requirements issued by the Regional Water Quality Control Board.

- **Policy PU-8-g Review Project Impact on Supply:** Mitigate the effects of development and capital improvement projects on the long-range water budget to ensure an adequate water supply for current and future uses.
- **Policy RC-7-c Best Practices for Conservation:** Require all City Facilities and all new private development to follow U.S. Bureau of Reclamation Best Management Practices for water conservation, as warranted and appropriate.

Fresno Municipal Code

Chapter 6 Municipal Services and Utilities

Chapter 6 of the Fresno Municipal Code contains the following regulations pertaining to hydrology and water quality.

Article 7 Urban Storm Water Quality Management and Discharge Control

This article prohibits illicit discharges and connections to the storm drain system. The chapter also addresses stormwater quality in accordance with the requirements of the NPDES permit, prohibits the discharge of non-stormwater into the storm drain system, and requires the reduction of pollutants in stormwater discharges by implementing BMPs and low impact development features for new development and redevelopment projects.

Article 9 Recycled Water Ordinance

This article regulates residential, commercial, and industrial connections to the City's recycled water service connections. All areas within the Recycled Water Project Area are eligible for recycled water services for approved uses in compliance with applicable federal, state, and local statues.

Grading Plan Check Process

Before obtaining a grading permit, all development projects are required to submit grading plans to the City of Fresno for review and approval. Developers must submit the following to satisfy the grading plan check process (City of Fresno 2018):

- 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.

4.9.2 Environmental Setting

SURFACE WATER

The primary surface water feature within the City of Fresno is the San Joaquin River, which is located approximately 10 miles north of the project site. The San Joaquin River is 366 miles long and spans from the Sierra Nevada Mountains to the San Francisco Bay via the San Joaquin Valley. Much of the water that flows through the San Joaquin River has a variety of uses including municipal and domestic water supply, agricultural, industrial, recreational, freshwater and wildlife habitat, and migration and spawning grounds.

Water quality in the San Joaquin River is affected by both natural and anthropogenic sources, including soil erosion; stormwater runoff; wastewater discharges, industrial, residential, and agricultural runoff; recreational activity; and wildlife. Water quality within the segment of the San Joaquin River that flows through the city is not substantially impaired. A network of agricultural canals and flood control channels traverse the city. Numerous agricultural ponds, recharge basins, irrigation canals, and other similar features dot the city's landscape. Dry Creek Canal, an irrigation canal managed by the Fresno Irrigation District, is located directly south of the project site. The City began to use surface water as a source of potable water supply in 2004 (City of Fresno 2014b:5.9-5).

GROUNDWATER

The City of Fresno is underlain by the Kings River Subbasin, which, along with six other subbasins, comprises the San Joaquin Valley Groundwater Basin. The Kings River Subbasin is 1,530 square miles. Groundwater levels in the city have declined by an average of 1.5 feet per year since 1990. A groundwater mound is located near the RWRF as a result of the disposal of treated effluent near the treatment facility into the percolation basins. Currently, subsurface recharge occurs from the movement of groundwater from external sources such as the Sierra Nevada moving into the local aquifer. Because the groundwater table surrounding the city is higher than inside the city, subsurface water tends to flow from surrounding areas with a higher groundwater table into the aquifer within the city that has a lower groundwater table. However, the City estimates that by 2025, groundwater operations (i.e., subsurface inflows and outflows) would be balanced and subsurface flows will not be directed to the city.

While the groundwater supply within the Kings River Subbasin generally meets drinking water standards, extensive contamination occurs throughout the city (City of Fresno 2014b:5.9-4). Of the City's 272 groundwater wells, 134 are affected by contaminant plumes. Nitrates, pesticides, and nutrients in agricultural drainage are currently found within much of the city's groundwater supply, and their levels exceed some drinking water standards established by the State. While nitrates may occur naturally, their presence is often attributed to anthropogenic reasons. Leaking septic tanks, which are prevalent in the less dense southeast portion of the city, are also a substantial source of nitrate contamination. Other water quality issues facing the city's groundwater supply include the presence of dibromochloropropane, which is a fumigant that was widely used in the 1960s to control nematodes in vineyards, and 1,2,3 Trichloropropane, which is an industrial solvent and pesticide additive (City of Fresno 2014b:5.9-3).

RECYCLED WATER

The RWRF diverts undisinfected secondary effluent for restricted irrigation of nonfood crops on land adjacent to the facility. The practice of using the secondary effluent to irrigate non-food crops has been carried-out for decades and is expected to continue for the foreseeable future. Recycled water is made available to farmers at no charge. Farmers are typically required to install the needed infrastructure to irrigate agricultural land at their expense (City of Fresno 2010:1-4). In 2015, 8,688 acre-feet of recycled water was used to irrigate nonfood crops. In addition to secondary effluent recycled water, the City also has capacity to produce up to 5 million gallons per day of tertiary treated recycled water, which is currently used for irrigation for a park, cemetery, and agriculture (City of Fresno 2016:6-20).

STORMWATER DRAINAGE

Storm drainage facilities within the Fresno-Clovis metropolitan area are planned, implemented, operated and maintained by the Fresno Metropolitan Flood Control District (FMFCD). The storm drainage facilities within a drainage area consist of storm drain inlets, pipeline, retention basins, urban detention (water quality) basins, and stormwater pump stations. However, the project site is outside of the FMFCD service area, and the project site is not connected to the City's municipal drainage system.

FLOODING AND DAM INUNDATION

FEMA prepares maps of the 100-year floodplains for communities in the United States. For areas within the 100-year floodplain, there is a 1 percent chance of flooding for any given year and these areas are considered to be at high-risk. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent. Areas within the 100-year floodplain that are financed by federally-backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage. According to FEMA Map Panel 06019C2085H, the project site is not located within a 100-year flood zone (FEMA 2009).

The Kings River is connected to the San Joaquin River by the James Bypass, a manmade canal. Three dams control flows on the San Joaquin River and the Kings River: the Friant, Mendota, and Pine Flat Dams. In addition to the dams on the two rivers, there are reservoirs and detention basins that have been constructed to prevent flooding (City of

Fresno 2014b:5.9-1). Dam failure is the uncontrolled release of impounded water behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail. There is no historic record of dam failure in Fresno County. While both the unincorporated and incorporated areas of the county are considered at risk for dam failure, there are no dams in the project vicinity and mapping in the County's Hazard Mitigation Plan shows that the direction of water flow in the event of dam failure would be away from the project site (Fresno County 2018).

4.9.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the project. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, ordinances, and regulations.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on hydrology or water quality if it would:

- violate any water-quality standards or waste-discharge requirements or otherwise substantially degrade surface or groundwater quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- 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 that would:
  - result in substantial erosion or siltation on site or off site;
  - substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site; create or contribute runoff water that would exceed the capacity of existing or planned stormwater- drainage systems or provide substantial additional sources of polluted runoff;
  - impede or redirect flood flows;
- in flood hazard, tsunami, or seiche zones risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

According to FEMA FIRM Panel 06019C2085H, the project site is not within a floodplain, a FEMA-designated floodway, or an inundation area (FEMA 2009). Therefore, the project would not result in a flood hazard or impede or redirect flood flows. There would be no impact, and this issue is not discussed further.

The project area is located inland with no large water bodies located in the vicinity, and there is no known history of mud flow in the vicinity. The project would not subject people or structures to a significant risk of inundation from sea level rise, tsunami, seiche, or mudflow. Therefore, there would be no impact, and this issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.9-1: Violate Water Quality Standards or Waste Discharge Requirements, Otherwise Degrade Water Quality, or Interfere with Implementation of a Water Quality Control Plan

Project construction activities such as grading, excavation, trenching, and spoil pile storage could result in erosion and sedimentation, and discharge of other nonpoint source pollutants. In addition, operation of the proposed facility has the potential to generate polluted runoff associated with storage of cleaning chemicals and vehicle/equipment leaks. To avoid or minimize the potential for adverse construction- and operation-related effects on water quality, the project would be required to develop and implement a SWPPP and BMPs that include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution. Therefore, short- and long-term impacts on surface and groundwater quality would be **less than significant**.

Short-term Construction Impacts

All earth-disturbing activities during construction would be subject to NPDES. The NPDES Permit Program, administered by the Central Valley RWQCB, helps control pollution in stormwater by regulating sources of pollution at construction sites that would result in the discharge of pollutants into stormwater and downstream receiving waters during both construction and operations activities. As required by NPDES, the project would be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). The NPDES Construction General Permit identifies limits on discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not adversely affect water quality or human health (EPA 2017). Construction activities subject to the Construction General Permit include clearing, grading, and other ground-disturbing activities such as stockpiling or excavation. The Construction General Permit requires development and implementation of a SWPPP and BMPs such as maintaining or creating drainages to convey and direct surface runoff away from bare areas, and installing physical barriers such as berms, silt fencing, waddles, straw bales, and gabions. Because the project would be required to comply with the provisions of the Construction General Permit, including preparation of a SWPPP and implementation of all identified BMPs, short-term construction impacts associated with water quality standards and waste discharge requirements would be minimized.

Long-Term Operational Impacts

The project includes development of a new industrial use on land that is currently under agricultural production. This development would result in approximately 10 acres of new impervious surface. Additionally, during operation, the project has the potential to generate polluted runoff associated with storage of cleaning chemicals and vehicle/equipment leaks. The City of Fresno is a co-permittee with the FMFCD, the County of Fresno, the City of Clovis, and California State University Fresno under the region-wide Central Valley RWQCB General Permit for Stormwater Discharges from MS4s (Order R5-2016-0040). This Region-wide MS4 Permit requires that the City and its co-permittees implement water quality and watershed protection measures for all development projects. The waste discharge requirements contained in the NPDES Permit have been designed to be consistent with the water quality standards and goals established in the Central Valley RWQCB's Basin Plan. In compliance with Article 7 of the Fresno Municipal Code, the project would manage stormwater quality through a SWPPP in accordance with the requirements of Section B of NPDES General Permit No. CAS000001 for the discharge of stormwater associated with industrial activities, excluding construction activities. Implementation of the SWPPP and BMPs, which include programs, technologies, processes, practices, and devices that control, prevent, remove, or reduce pollution, would reduce impacts to surface waters to acceptable levels and long-term project impacts to surface or groundwater quality would not exceed acceptable levels. Thus, short- and long-term impacts on surface and groundwater quality would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.9-2: Substantially Decrease Groundwater Supplies, Interfere with Groundwater Recharge, or Interfere with Implementation of a Sustainable Groundwater Management Plan

The project would extract groundwater from a new well which could decrease groundwater levels. However, the rendering plant is primarily served by groundwater under current conditions and would be moved from an area in overdraft to an area of recharge created by the presence of treated effluent from the RWRF. In addition, the proposed facility would use non-potable recycled water on an as-needed basis. The project site is in an area with substantial agricultural land and little impervious coverage. The project would develop 10 acres of impervious surface area on the 20-acre site and the remainder of the property would remain pervious, allowing for stormwater infiltration. Therefore, the project would not substantially decrease groundwater levels nor interfere with groundwater recharge. This impact would be **less than significant**.

The project would receive its water supply from a new well located west of the site on the RWRF property. The well would deliver groundwater at a pressure of 50 pounds per square inch. The estimated water demand of the relocated facility would be 75,000 gallons per day (gpd). The existing rendering plant is served by municipal water; however, 75 percent of the City's municipal supply is from groundwater. Although the expansion of the rendering plant would result in an increase in water demand (6.5 percent) compared to current conditions, the rendering plant would be moved from an area of the city that is in overdraft to an area adjacent to a groundwater mound created by the presence of treated effluent from the RWRF. A groundwater management plan is currently being developed for the Kings Subbasin; however, it is not yet available. Additionally, the facility would use non-potable recycled water from the adjacent RWRF on an as-needed basis for irrigation and other uses. Because of the high level of groundwater associated with the RWRF, and the use of recycled water for some portion of the facility's needs, the project would not substantially decrease groundwater levels.

The project site is in an area with substantial agricultural land and little impervious coverage. Implementation of the project would add approximately 10 total acres of impervious surface to the site, and would leave the remaining approximately 10 acres of the project site without impervious surface, including landscape areas and grassy areas that would allow stormwater filtration. The Kings River Subbasin is 1,530 square miles; therefore, the addition of 10 acres of impervious surfaces would not substantially impede groundwater recharge. Impacts related to groundwater levels and recharge would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.9-3: Increase in Surface Water Runoff Potentially Exceeding the Capacity of Existing or Planned Stormwater Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff

The project would add 10 acres of impervious surface to the currently undeveloped site, which would change the existing drainage rate and pattern of the site and could degrade downstream surface waters. Because the project would not drain into a municipal storm drain system, increased stormwater rate and volume could cause increased potential for localized flooding. This would be a **potentially significant** impact.

The project site is undeveloped, does not contain streams or rivers, and does not contain impervious surfaces. However, an irrigation canal is located directly south of the project site. As discussed in Impact 4.9-1 above, construction of the project would result in ground-disturbing activities such as grading, excavation, trenching, and spoil pile storage. The project would add approximately 10 acres of impervious surface to the currently undeveloped site, which would change the existing drainage rate and pattern of the site, and could increase soil erosion that could contribute to degradation of downstream surface waters. However, the project would be required to comply with the City of Fresno grading plan check process and NPDES Construction General Permit Region-wide MS4.

Compliance with the grading plan check process requires that all new development drains properly and is routed to the appropriate location. Additionally, these regulations would result in appropriate handling of stormwater on site to

reduce potential for substantial increased runoff and minimize potential for downstream flooding. Participation in the Region-wide MS4 permit would reduce water quality impacts to surface and groundwater by ensuring that discharged water meets the water quality standards and goals established in the Central Valley RWQCB's Basin Plan through the implementation of BMPs described above. However, because the project would not drain into a municipal storm drain system, and no such system exists in the vicinity of the project site, increased stormwater rate and volume could cause increased potential for localized flooding if stormwater is not appropriately handled. Therefore, impacts would be **potentially significant** related to off-site flooding.

Mitigation Measure 4.9-3: Prepare On-Site Drainage Plan

The project applicant shall prepare an on-site drainage plan for review and approval by the City's utilities department. The plan shall identify on-site stormwater quality and any needed storage features, such as (but not limited to) bioswales, bioretention facilities, and detention facilities. These facilities shall reduce the peak stormwater runoff rates (flowing off the site) to the existing runoff rate, or other appropriate runoff rate consistent with City standards and shall be designed to minimize siltation in stormwater leaving the site.

Significance after Mitigation

Implementation of Mitigation Measure 4.9-3 would result in a reduction in the potential for peak runoff rates to an appropriate adopted City standard or to existing runoff rates. This would reduce the potential impacts related to erosion and downstream flood potential to a **less-than-significant** level.

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4.10 LAND USE AND PLANNING

This land use analysis evaluates the consistency of the project with applicable land use plans and policies adopted by the City of Fresno for the purpose of reducing environmental impacts.

4.10.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to land use are applicable to the project.

STATE

Planning and Zoning Laws

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including at a minimum land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The State Zoning Law (California Government Code, Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan. Local general plan policies and zoning ordinances, as they relate to the proposed project, are summarized below.

LOCAL

Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014a) includes the following policies that pertain to land use and are relevant to this analysis.

- Policy LU-1-b Land Use Definition and Compatibility: Include zoning districts and standards in the Development Code that provide for the General Plan land use designations and create appropriate transitions or buffers between new development with existing uses, taking into consideration the health and safety of the community.
- Policy LU-7-b Business and Industrial Parks: Promote business and industrial park sites that are of sufficient size, unified in design, and diversified in activity to attract a full range of business types needed for economic growth.
- Policy LU-7-c Efficiency of Industrial Uses: Promote industrial land use clusters to maximize the operational efficiency of similar activities.
    - Provide access to a range of transportation modes though plans incentives, ensuring that local, regional, and national connections are available to industrial uses;
    - Develop strategy to promote rail-accessible sites for industries that need such capability; and
    - Ensure timely access to the full range of urban services for industrial development by coordinating proposed plans with the annual and long-range City infrastructure planning.

Fresno Municipal Code

Chapter 15 Citywide Development Code

The Citywide Development Code, Chapter 15, establishes land use classifications and regulations to implement the General Plan. The Development Code is the primary tool that regulates development within the city.

Article 13

Article 13 establishes use regulations, development standards, and design standards for Employment Districts within the City of Fresno. The overall purpose of the Employment Districts is to designate adequate land and provide for the appropriate location of allowed businesses that may have the potential to generate off-site impacts. Allowable uses within the Employment Districts include Office, Business Park, Regional Business Park, Light Industrial, and Heavy Industrial. Pursuant to Section 15-1302, intensive industrial land uses are permitted within the Heavy Industrial zoning designation with approval of a conditional use permit.

4.10.2 Environmental Setting

The project site, currently owned by the City of Fresno, is located within a 3,200-acre area of incorporated land that is separated from the rest of the city by approximately 2 miles. Most of the land to the north, east, and south of the project site is in agricultural use (vineyards, orchards, and various row crops). The RWRF is located directly to the west of the site and occupies 180 acres.

The project site is designated "Public Facility" in the Fresno General Plan (see Figure 3-3 in Chapter 3, "Project Description") and zoned Public and Institutional" (PI) (See Figure 3-4 in Chapter 3, "Project Description"). The Public Facility designation allows for facilities such as City and County buildings, schools, colleges, municipal airports, hospitals, fire and police stations, recycling centers, sewage treatment plants, parks, trails, recreational centers, and golf courses.

Consistent with the General Plan designation, the PI zone allows public or quasi-public facilities, including City facilities, utilities, schools, health services, corporation yards, utility stations, and similar uses. Accessory retail uses and services, including food facilities and childcare, are permitted by right.

4.10.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential land use impacts is based on a review of documents pertaining to the project site, including the *City of Fresno General Plan* (2014a), General Plan MEIR (2014b), and Title 15 Citywide Development Code. In determining the level of significance, this analysis assumes that the project would comply with relevant state and local ordinances and regulations related to land use.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the project would result in a significant impact on land use if it would:

- physically divide an established community; or
- cause a significant environmental impact due to a conflict with any land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

ISSUES NOT DISCUSSED FURTHER

The project site is more than 2 miles from the city proper and would occupy an industrially-zoned island that is surrounded by rural agricultural uses and public facility uses. There are a few scattered agricultural residences in the vicinity, but the nearest two residences are located approximately 2,400 feet east of the site. Because project improvements would be limited to project site, and the proposed use is consistent with the existing character of the adjacent RWRF, the project would not divide an established community. Furthermore, the project would relocate the existing rendering plant from an area near an existing residential community, which would be beneficial for the surrounding community. Therefore, there would be no impact, and this issue will not be discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.10-1: Conflict with Relevant Plans, Policies, and Zoning Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect

The proposed project would require a general plan amendment (GPA), Rezone, and conditional use permit (CUP). Requests for discretionary permits require that the project be evaluated for compliance and consistency with a variety of policy and regulatory programs adopted to avoid or reduce the severity of potential environmental effects. Before approval, the project would be required to demonstrate consistency with General Plan policies and adopted mitigation measures of the General Plan MEIR; development standards for the Industrial-Heavy (IH) zoning district outlined in Article 13 of the Development code; and required findings for hazardous waste facilities per Section 15-2732. Discretionary review would ensure that the proposed project is consistent with these policies, ordinances, or other resolutions. This impact would be **less than significant**.

The *City of Fresno General Plan* and Title 15 Citywide Development Code, are the primary planning documents for the City of Fresno. The proposed project requires a GPA, Rezone, and CUP. The proposed GPA would change the land use designation from Public Facility to Heavy Industrial. The rezone would change the zoning district from PI to Industrial-Heavy (IH). The Heavy Industrial land use designation allows a broad range of industrial uses including manufacturing, assembly, wholesaling, distribution, and storage activities. Consistent with the proposed Heavy Industrial land use designation, the IH zoning designation allows manufacturing, assembly, wholesaling, distribution, storage activities, and small-scale commercial services and ancillary office uses. Pursuant to Section 15-1302 of the Fresno Development Code, a CUP permit is required to operate intensive industrial land uses within the IH zone. Approval of these entitlements would change the underlying land use designation and zoning to be consistent with the proposed industrial land use.

Requests for discretionary permits require that the project be evaluated for compliance and consistency with a variety of policy and regulatory programs adopted to avoid or reduce the severity of potential environmental effects. Such plans, policies, and programs include the General Plan policies and adopted mitigation measures of the General Plan MEIR; development standards for the IH zoning district outlined in Article 13 of the Development code; and required findings for hazardous waste facilities per Section 15-2732. Discretionary review would ensure that the proposed project is consistent with these policies, ordinances, or other resolutions.

Consistent with General Plan Policies LU-1-b, LU-7-b, and LU-7-c, the proposed industrial use would be compatible with adjacent land uses including the RWRF and general agricultural land uses. The current Darling Ingredients Inc. facility has had a history of documented odor complaints. Upon approval of the proposed project the existing facility would be dismantled and removed. Relocation of the rendering facility would allow removal of an industrial land use that is not currently consistent with the surrounding land uses. Therefore, impacts related to land use consistency would be **less than significant.**

Mitigation Measures

No mitigation is required for this impact.

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4.11 NOISE AND VIBRATION

This section includes a summary of applicable regulations related to noise and vibration, a description of ambient-noise conditions, and an analysis of potential short-term construction and long-term operational-source noise impacts associated with the project. Mitigation measures are recommended as necessary to reduce significant noise impacts. Additional data is provided in Appendix C, "Noise Measurement Data and Noise Modeling Calculations."

4.11.1 Regulatory Setting

FEDERAL

U.S. Environmental Protection Agency Office of Noise Abatement and Control

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects.

Federal Transit Administration

To address the human response to ground vibration, the Federal Transit Administration (FTA) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines are presented in Table 4.11-1.

Table 4.11-1 Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/second)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65 [4]	65 [4]	65 [4]
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime uses.	75	78	83

Notes: GBV = Ground-Borne Vibration; VdB = vibration decibels referenced to 1 µ inch/second and based on the root mean square (RMS) velocity amplitude.

1 "Frequent Events" is defined as more than 70 vibration events of the same source per day.

2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

3 "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.

4 This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.

Source: FTA 2006

STATE

California General Plan Guidelines

The State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (2003), provides guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. Citing EPA materials and the State Sound Transmissions Control

Standards, the State's general plan guidelines recommend interior and exterior Community Noise Equivalent Level (CNEL) of 45 and 60 decibels (dB) for residential units, respectively (OPR 2017:378).

California Department of Transportation

In 2013, the California Department of Transportation (Caltrans) published the *Transportation and Construction Vibration Manual* (Caltrans 2013a). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 4.11-2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table 4.11-2 Caltrans Recommendations Regarding Levels of Vibration Exposure

PPV (in/sec)	Effect on Buildings
0.4-0.6	Architectural damage and possible minor structural damage
0.2	Risk of architectural damage to normal dwelling houses
0.1	Virtually no risk of architectural damage to normal buildings
0.08	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Vibration unlikely to cause damage of any type

Notes: PPV= Peak Particle Velocity; in/sec = inches per second

Source: Caltrans 2013a

LOCAL

Fresno County General Plan

The Fresno County General Plan (Fresno County 2000) addresses noise within the Health and Safety Element. The noise-related policies applicable to the project include:

- **Policy HS-G.1:** The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.
- **Policy HS-G.4:** So that noise mitigation may be considered in the design of new projects, the county shall require an acoustical analysis as part of the environmental review process where:
  - Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to Chart HS-1 "Land Use Compatibility for Community Noise Environments" of the County's General Plan; or,
  - Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.
- **Policy HS-G.5:** Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as soundwalls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.
- **Policy HS-G.8:** The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1: "Land Use Compatibility for Community Noise Environments" of the County's General Plan.

Fresno County Code of Ordinances

Fresno County establishes noise regulations in Chapter 8.40: "Noise Control" of the Code of Ordinances (Fresno County 2018). Relevant regulations to the project include:

Chapter 8.40.020(B): Definitions - Ambient Noise Level

"Ambient Noise Level" means the composite noise from all sources excluding the alleged offensive noise. In this context it represents the normal or existing level of environmental noise at a given location for a specific time of day or night.

Chapter 8.40.040-050: Exterior and Interior Noise Standards

A. Exterior Noise: It is unlawful for any person including an owner, whether through the owner or the owner's agent, lessee, sublessor, sublessee or occupant, at any location within the unincorporated area of the county, to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, hospital, church or public library situation in either the incorporated or unincorporated area to exceed the noise level standards as set forth in Table [4.11-3].

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category in Table 4.11-3, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

Table 4.11-3 Fresno County Ambient Noise Level Standards

Use Category[1]	Exterior Noise			Interior Noise		
	Minutes[2]	Noise Standard Level (dB)		Minutes[1]	Noise Standard Level (dB)	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
1	30	50	45	5	45	35
2	15	55	50	1	50	40
3	5	60	55	0	55	45
4	1	65	60	-	-	-
5	0	70	65	-	-	-

Notes: dB = A-weighted decibels

[1] Land Use Categories as defined in FTA *Traffic Noise and Vibration Assessment* (FTA 2006) Table 3-4 for Exterior Noise and Table 3-2 for Interior Noise Standards.

[2] Represents the cumulative number of minutes in any 1-hour time period.

Source: Fresno County 2000

Chapter 8.40.060: Noise Source Exemptions

Chapter 8.40 of the Fresno County Code of Ordinance includes the following exemption for construction:

- Noise sources associated with construction, provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) addresses noise and vibration within the Noise and Safety Element. The noise-related policies applicable to the project include:

- **Policy NS-1-a:** Desirable and Generally Acceptable Exterior Noise Environment. Establish 65 dB L_{dn} or CNEL as the standard for the desirable maximum average exterior noise levels for defined usable exterior areas of residential and noise-sensitive uses for noise, but designate 60 dB L_{dn} or CNEL (measured at the property line) for noise generated by stationary sources impinging upon residential and noise sensitive uses. Maintain a 65 dB L_{dn} or CNEL as the maximum average exterior noise levels for non-sensitive commercial land uses, and maintain 70 dB L_{dn} or CNEL as maximum average exterior noise level for industrial land uses, both to be measured at the property line of parcels where noise is generated which may impinge on neighboring properties.
- **Policy NS-1-b:** Conditionally Acceptable Exterior Noise Exposure Range. Establish the conditionally acceptable noise exposure level range for residential and other noise sensitive uses to be 65 dB L_{dn} or require appropriate noise reducing mitigation measures as determined by a site specific acoustical analysis to comply with the desirable and conditionally acceptable exterior noise level and the required interior noise level standards set in Table 4.11-4.

Table 4.11-4 Transportation (Non-Aircraft) Noise Source

Noise Sensitive Land Use[1]	Outdoor Activity Areas (L_{dn} dB)[2]	Interior Spaces (L_{dn} dB)[2]
Residential	65	45
Transient Lodging	65	45
Hospitals, Nursing Homes	65	45
Theaters, Auditoriums, Music Halls	-	35
Churches, Meeting Halls	65	45
Office Buildings	-	45
Schools, Libraries, Museums	-	45

Notes: dB = decibel, L_{dn} = day-night average sound level

[1] Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] As determined for a typical worst-case hour during periods of use.

Source: Fresno General Plan, Noise and Safety Element 2014:9-17

- **Policy NS-1-c:** Generally Unacceptable Exterior Noise Exposure Range. Establish the conditionally acceptable noise exposure level range for residential and other noise sensitive uses to be 65 dB L_{dn} or CNEL to be generally unacceptable for residential and other noise sensitive uses for noise generated by sources in Policy NS-1-a, and study alternative less noise-sensitive uses for these areas if otherwise appropriate. Require appropriate noise reducing mitigation measures as determined by a site specific acoustical analysis to comply with the generally desirable or generally acceptable exterior noise level and the required 45 dB interior noise level standards set in Table 4.11-4 as conditions of permit approval.
- **Policy NS-1-g:** Noise mitigation measures which help achieve the noise level targets of the General Plan include, but are not limited to, the following:
  - Facades with substantial weight and insulation;
  - Installation of sound-rated windows for primary sleeping and activity areas;
  - Installation of sound-rated doors for all exterior entries ant primary sleeping and activity areas;
  - Greater building setbacks and exterior barriers;

- Acoustic baffling of vents for chimneys, attic, and gable ends;
- Installation of mechanical ventilation systems that provide fresh air under closed window conditions.

The aforementioned measures are not exhaustive and alternative designs may be approved by the City, provided that a qualified Acoustical Consultant submits information demonstrating that the alternative design(s) will achieve and maintain the specific targets for outdoor activity areas and interior spaces.

- **Policy NS-1-i:** Mitigation by New Development. Require an acoustic analysis where new development of industrial, commercial or other noise generating land uses (including transportation facilities such as roadways, railroads, and airports) may result in noise levels that exceed the noise level exposure criteria established by Table 4.11-4 to determine impacts, and require developers to mitigate these impacts in conformance with Tables 4.11-4 and 4.11-5 as a condition of permit approval through appropriate means. Noise mitigation measures may include:
  - The screening of noise sources such as parking and loading facilities, outdoor activities, and mechanical equipment;
  - Providing increased setbacks for noise sources from adjacent dwellings;
  - Installation of walls and landscaping that serve as noise buffers;
  - Installation of soundproofing materials and double-glazed windows; and
  - Regulating operations, such as hours of operation, including deliveries and trash pickup.

  Alternative acoustical designs that achieve the prescribed noise level reduction may be approved by the City, provided a qualified Acoustical Consultant submits information demonstrating that the alternative designs will achieve and maintain the specific targets for outdoor activity areas and interior spaces. As a last resort, developers may propose to construct noise walls along roadways when a compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility, with no City funding.

Table 4.11-5 Stationary Noise Sources

Category	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dB	50	45
Maximum Sound Level (L_{max}), dB	70	65

Notes: dB = decibel

Source: Fresno General Plan, Noise and Safety Element 2014:9-17

- **Policy NS-1-j: Significance Threshold**. Establish, as a threshold of significance for the City's environmental review process, that a significant increase in ambient noise levels is assumed if the project would increase noise levels in the immediate vicinity by 3 dB L_{dn} or CNEL or more above the ambient noise limits established in the City's General Plan.
- **Policy NS-1-k: Proposal Review**. Review all new public and private development proposals that may potentially be affected by or cause a significant increase in noise levels, per Policy NS-1-I, to determine conformance with the policies of the General Plan's Noise and Safety Element. Require developers to reduce the noise impacts of new development on adjacent properties through appropriate means.
- **Policy NS-1-l: Enforcement**. Continue to enforce applicable State Noise Insulation Standards and Uniform Building Code noise requirements, as adopted by the City.
- **Policy NS-1-m: Transportation Related Noise Impacts**. For projects subject to City approval, require that the project sponsor mitigate noise created by new transportation and transportation-related station noise sources, including roadway improvement projects, so that resulting noise levels do not exceed the City's adopted standards for noise sensitive land uses.

- **Policy NS-1-n: Best Available Technology**. Require new noise sources to use best available control technology to minimize noise emissions.
- **Policy NS-1-o: Sound Wall Guidelines**. Acoustical studies and noise mitigation measures for projects shall specify the heights, materials, and design for sound walls and other noise barriers. Aesthetic considerations shall also be addressed in these studies and mitigation measures such as variable noise barrier heights, a combination of a landscaped perm with wall, and reduced barrier height in combination with increased distance or elevation differences between noise source and noise receptor, with a maximum allowable height of 15 feet. The City will develop guidelines for aesthetic design measures of sound walls, and may commission area wide noise mitigation studies that can serve as templates for acoustical treatment that can be applied to similar situation sin the urban area.

City of Fresno Municipal Code

Chapter 10e, Article 1 (Noise Regulations) of the Fresno Municipal Code (City of Fresno 2013) establishes excessive noise guidelines and exemptions.

Section 10-102(b): Definitions, Ambient Noise

"Ambient Noise" is the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. For the purpose of this ordinance ambient noise level is the level obtained when the noise level is averaged over a period of fifteen minutes, without inclusion of the offending noise, at the location and time of day at which comparison with the offending noise is to be made. Where the ambient noise level is less than that designated in this section, however, the noise level specified herein shall be deemed to be the ambient noise level for that location (Table 4.11-6).

Table 4.11-6 Acceptable Ambient Noise Level

Land Use	Time	Sound Level (dB)
Residential	10 p.m. to 7 a.m.	50
	7 p.m. to 10 p.m.	55
	7 a.m. to 7 p.m.	60
Commercial	10 p.m. to 7 a.m.	60
	7 a.m. to 10 p.m.	65
Industrial	Anytime	70

Notes: dB = decibel

Source: Municipal Code of the City of Fresno 2013

Section 10-105: Excessive Noise Prohibited

No person shall make, cause, or suffer or permit to be made or caused upon any premises or upon any public street, alley, or place within the city, any sound or noise which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing or working in the area, unless such noise or sound is specifically authorized by or in accordance with this article. The provisions of this section shall apply to, but shall be limited to, the control, use, and operation of the following noise sources:

(a) Radios, musical instruments, phonographs, television sets, or other machines or devices used for the amplification, production, or reproduction of sound or the human voice.

(b) Animals or fowl creating, generating, or emitting any cry or behavioral sound.

(c) Machinery or equipment, such as fans, pumps, air conditioning units, engines, turbines, compressors, generators, motors or similar devises, equipment, or apparatus.

(d) Construction equipment or work, including the operation, use or employment of pile drivers, hammers, saws, drills, derricks, hoists, or similar construction equipment or tools.

Section 10-109: Exceptions

The provisions of this article shall not apply to:

(a) Construction, repair or remodeling work accomplished pursuant to a building, electrical, plumbing, mechanical, or other construction permit issued by the city or other governmental agency, or to site preparation and grading, provided such work takes place between the hours of 7 a.m. and 10 p.m. on any day except Sunday.

(b) Emergency work.

(c) Any act or acts which are prohibited by any law of the State of California or the United States.

4.11.2 Environmental Setting

ACOUSTIC FUNDAMENTALS

Prior to discussing the noise setting for the project, background information about sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms referenced throughout this section.

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz, or thousands of hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dB.

Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one idling truck generates an SPL of 70 dB, two trucks idling simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than one source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within this range better than sounds of the same amplitude with frequencies outside of this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of A-weighted decibels) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels. All sound levels discussed in this section are expressed in A-weighted decibels. Table 4.11-7 describes typical A-weighted noise levels for various noise sources.

Table 4.11-7 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, Bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013b: Table 2-5

Human Response to Changes in Noise Levels

The doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear can discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives both higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013b:2-18). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness

(Caltrans 2013b:2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or in millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006:7-5, Caltrans 2013b:6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-4; Caltrans 2013a:7). This is based on a reference value of 1 micro inch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006:7-8, Caltrans 2013a:27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006:7-5).

Vibrations generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations are generated by vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Table 4.11-8 summarizes the general human response to different ground vibration-velocity levels.

Table 4.11-8 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 µ inch/second and based on the root mean square (RMS) velocity amplitude.

Source: FTA 2006:7-8

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors used throughout this section.

- **Equivalent Continuous Sound Level (L_{eq}):** L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013b:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period and is the basis for noise abatement criteria used by Caltrans and FTA (Caltrans 2013b:2-47; FTA 2006:2-19).
- **Percentile-Exceeded Sound Level (L_X):** L_X represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time) (Caltrans 2013b:2-16).
- **Maximum Sound Level (L_{max}):** L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013b:2-48; FTA 2006:2-16).
- **Day-Night Level (L_{dn}):** L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB "penalty" applied to sound levels occurring during nighttime hours between 10 p.m. and 7 a.m. (Caltrans 2013b:2-48; FTA 2006:2-22).

Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. (Caltrans 2013b:2-48).

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which a noise level decreases with distance depends on the following factors:

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provides additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuation rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased over

large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also affect sound attenuation.

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receiver attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction (Caltrans 2013b:2-41; FTA 2006:5-6, 6-25). Barriers higher than the line of sight provide increased noise reduction (FTA 2006:2-12). Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier unless there are multiple rows of vegetation (FTA 2006:2-11).

EXISTING NOISE ENVIRONMENT

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses generally include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, transient lodging, historic sites, cemeteries, and places of worship are also generally considered sensitive to increases in noise levels. These land use types are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance. The nearest noise-sensitive receptors are single family homes located along Cornelia Avenue approximately 2,440 feet east of the project site.

The predominant noise source in the project vicinity is vehicle traffic on the surrounding roadway network (i.e., Jensen Avenue, Cornelia Avenue, Brawley Avenue, Marks Avenue, West Avenue) and the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) to the west. The activities at the RWRF include mobile noise sources from maintenance vehicles and employee vehicles, as well as stationary noise sources associated with pumps and motors that run the various processes at the RWRF. Additional noise sources in the project vicinity are associated with the surrounding agricultural uses. Noise generated by these uses included stationary equipment (e.g., pumps) and off-road equipment operation.

Existing traffic noise levels on roadway segments in the project vicinity modeled using calculation methods consistent with Federal Highway Administration (FHWA) Traffic Noise Model, Version 2.5 (FHWA 2004) and using average daily traffic volumes provided in the *Fresno Rendering Plan Relocation Transportation Impact Analysis (Transportation Study)* (Appendix D)Table 4.11-9 summarizes the modeled existing traffic noise levels at 100 feet from the centerline of each area roadway segments, and lists distances from each roadway centerline to the 70, 65, and 60 L_{dn} traffic noise contours. For further details on traffic-noise modeling inputs and parameters, refer to Appendix C.

Table 4.11-9 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment/Segment Description	Existing Roadway L_{dn} (dB)	Distance to Contour (feet) with Existing Volumes		
		70 dB	65 dB	60 dB
Jensen Avenue from Project Access to Cornelia Avenue	56.4	12	27	58
Jensen Avenue from Cornelia Avenue to Brawley Avenue	65.9	13	29	62
Jensen Avenue from Brawley Avenue to Marks Avenue	68.3	15	33	72
Jensen Avenue from Marks Avenue to West Avenue	59.4	16	34	73

Table 4.11-9 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment/Segment Description	Existing Roadway L_{dn} (dB)	Distance to Contour (feet) with Existing Volumes		
		70 dB	65 dB	60 dB
Cornelia Avenue from Church Avenue to Jensen Avenue	60.0	16	35	75
Cornelia Avenue from Jensen Avenue to North Avenue	56.8	6	13	28
Brawley Avenue from Church Avenue to Jensen Avenue	57.1	6	13	29
Brawley Avenue from Jensen Avenue to North Avenue	59.9	5	11	24
Marks Avenue from Church Avenue to Jensen Avenue	60.1	4	9	20
Marks Avenue from Jensen Avenue to North Avenue	56.3	6	12	26
West Avenue from Church Avenue to Jensen Avenue	55.4	4	9	19
West Avenue from Jensen Avenue to North Avenue	45.5	2	5	11

Notes: dB = decibels; Ldn = Day-Night Average Sound Level
All modeling assumes average pavement, level roadways (less than 1.5 percent grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels. For additional details, refer to Appendix C for detailed traffic data, and traffic-noise modeling input data and output results.
Source: Data modeled by Ascent Environmental in 2019

4.11.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Construction Noise and Vibration

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference emission levels, and usage factors from FTA's *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2006) and FHWA's *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and the usage thereof common practice in the field of acoustics.

Operational Noise and Vibration

Non-transportation noise sources (e.g., stationary) associated with projects are generated by on-site equipment and activities associated with project operation. For the proposed project, on-site vehicle operation would generate the greatest amount of audible noise at nearby sensitive receptors as all stationary, on-site machinery and equipment would be located indoors.

To assess potential long-term (operation-related) noise impacts from project-related traffic, noise levels were estimated in using calculations consistent with the FHWA's Traffic Noise Model Version 2.5 (FHWA 2004) and project-specific traffic data (Appendix C). The analysis is based on the reference noise emission levels for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Heavy vehicle usage was assumed based on standard usage for similar roadway classifications, and vehicle speeds on area roadways were estimated based on a review of existing data. Note that the modeling conducted does not account for any natural or human-made shielding (e.g., the presence of walls or buildings) or reflection off building surfaces.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, a noise impact is considered significant if implementation of the proposed project would result in:

- exposure of persons to or generation of noise levels in excess of applicable standards;
- exposure of persons to or generation of excessive ground vibration or ground noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- a substantial temporary (or periodic) increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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 expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of an active private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

The project site is located within the City of Fresno, not within the city proper, but within a large island of unincorporated, City-owned property. The City and County have established noise standards to protect citizens from potential hearing damage and other adverse physiological and social effects from noise exposure. The nearby noise sensitive receptors are located within the county; therefore, construction and operational stationary source noise impacts were compared to County noise standards. The noise impacts resulting from operational truck traffic to the project site were assessed based on the City's noise standards because the City's standards are more stringent than the County's. The following considerations apply to the first three significance thresholds identified above:

- Short-term construction-related activity occurring outside of daytime hours between 6:00 a.m. and 9:00 p.m. on weekdays and 7:00 a.m. and 9:00 p.m. on weekends (Fresno County Municipal Code 8.40.060);
- Expose sensitive receptors to long-term operational exterior noise levels greater than 55 dB during daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) when measured at the property line of the receiving property (Fresno County Municipal Code 8.40.040, Category 2);
- Expose sensitive receptors to long-term operational interior noise levels of greater than 50 dB during daytime hours (7:00 a.m. to 10:00 p.m.) and 35 dB during nighttime hours (10:00 p.m. to 7:00 a.m.) when measured inside of the receiving dwelling unit (Fresno County Municipal Code 8.40.050, Category 2);
- Expose residential sensitive receptors to interior CNEL of 45 dB and exterior CNEL of 60 dB; and
- A long-term permanent increase in operational traffic noise levels by at least three (3) dB in the immediate vicinity (City of Fresno General Plan Policy NS-1-j).

ISSUES NOT DISCUSSED FURTHER

The project is not located within an airport land use plan, or within 2 miles of a public airport or public use airport. Additionally, the project is not located within 2 miles of a private airstrip; Fresno Chandler Executive Airport is the closest airport and is located approximately 3.75 miles south of the project site. Thus, the project would not result in noise impacts related to the exposure of people residing or working on the project site to excessive aircraft-related noise levels. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.11-1: Construction Noise

While all construction would occur within the city limits, sensitive receptors within the county could be affected by noise from the project. The construction hours included in the County Noise Ordinance are more stringent than the City's. The County of Fresno Noise Ordinance (Chapter 8.40 of the County of Fresno Ordinance Code), exempts construction-related noise, provided that all construction activities are performed between 6:00 a.m. and 9:00 p.m., Monday through Friday, and between 7:00 a.m. and 9:00 p.m., Saturday and Sunday. Construction activities would be limited to the less noise-sensitive hours (e.g. daytime), consistent with the limitations of the County Noise Ordinance. Therefore, the impact of short-term on-site construction noise would be **less than significant**.

Construction activities would result in short-term noise. Construction activities would consist of grading and site preparation; utility installation and connection; roadway, driveway, and parking lot construction; building construction and equipment installation; and landscape installation. As discussed in Chapter 2, "Project Description," the construction staging area would be located on-site. All construction would be limited to the hours of 6:00 a.m. through 9:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m. on Saturday and Sunday. No pile driving or blasting would take place.

Construction-generated noise levels would fluctuate depending on the type, number, and duration of equipment used. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the ambient noise environment at nearby receptors. Construction equipment would vary by phase, but the entire construction process would include operation of the following types of equipment: graders, rubber-tired dozers, tractors, loaders, backhoes, cranes, forklifts, cement and mortar mixers, pavers, rollers, and air compressors. Noise generated from these pieces of equipment would be intermittent and short in duration as typical use is characterized by short periods of full-power operation followed by extended periods of lower power, idling, or powered-off conditions.

The grading and site preparation phases typically generate the most substantial noise levels because of the on-site equipment associated with grading, compacting, and excavation are the noisiest. Site preparation equipment and activities include grader, dozers, and excavators. Minimal site preparation and trenching would be required for offsite construction activities. Offsite construction activities would be limited to: connection to the existing natural gas line and recycled water line, both located west of the site within the Jensen Avenue right-of-way; connection to the conditioned gas pipeline located to the southwest of the site on the RWRF; and construction of and connection to a new potable water well and new sewer manhole, both located west of the site on the RWRF property.

Although a detailed construction equipment list is not currently available, based on the types of construction activities associated with the proposed project it is expected that the primary sources of noise would include graders, dozers, and excavators. Though unlikely, it was conservatively assumed that two of each of equipment type could operate on-site simultaneously. Noise emission levels from these types of construction equipment are shown in Table 4.11-10, below. Based on the reference noise levels listed in the table and accounting for typical usage factors for each piece of equipment, on-site construction activities could generate a combined average noise level of approximately 89 dB L_{eq} and 93 dB L_{max} at 50 feet from the project boundary. Calculations of these combined noise levels are provided in Appendix C.

The daytime noise exposure level was estimated for the closest noise-sensitive receptor that could be adversely affected by construction noise. The attenuated noise levels at the nearest noise-sensitive receptor, the residence located approximately 2,440 feet from the project area, would be 55 L_{eq} and 59 L_{max}. These estimates are conservative because the modeling assumes that the noise-generating equipment could operate simultaneously in proximity to each other near the boundaries of the project site. Detailed inputs and parameters for the estimated construction noise attenuation calculations are also provided in Appendix C.

Table 4.11-10 Noise Levels Generated by Typical Construction Equipment

Equipment Type[1]	Maximum Noise Level (dB L_{max}) at 50 feet[2]	Typical Noise Level (dB L_{eq}) at 50 feet[3]
Grader	85	81
Dozer	85	81
Excavator	85	81
Combined Noise Level at 50 feet	93	89
Attenuated Noise Level at 2,440 feet	59	55

Notes: dB = decibels; Lmax = maximum sound level; Leq = equivalent continuous sound level

[1] Equipment Type assumes two of each vehicle type would be present and operating simultaneously.

[2] Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacturer-specified noise levels for each piece of heavy construction equipment.

[3] Assumes typical usage factors

Source: FTA 2006; data modeled by Ascent Environmental 2017

The County of Fresno Noise Ordinance (Chapter 8.40 of the County of Fresno Ordinance Code), exempts construction-related noise, provided that all construction activities are performed between 6:00 a.m. and 9:00 p.m., Monday through Friday, and between 7:00 a.m. and 9:00 p.m., Saturday and Sunday. As described in the project description, construction activities would be limited to the less noise-sensitive hours (e.g. daytime) and would be consistent with the limitations of the County Noise Ordinance. Therefore, short-term on-site construction noise would not result in the exposure of persons to or generation of noise levels in excess of applicable standards.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.11-2: Exposure of Person to or Generation of Excessive Vibration

Operation of the project would not result in any new long-term operational sources of ground vibration. Construction activities would require the use of heavy-duty off-road equipment that could generate ground vibration in excess of state and federal standards. Because all construction activity would take place at least 2,400 feet from sensitive receptors, there would be no exceedance of Caltrans or FTA standards. Therefore, the project's exposure of persons to excessive levels of groundborne vibration would be **less than significant**.

Operation of the project would not result in any new long-term operational sources of ground vibration. Some ground vibration would be generated during project construction. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Construction-related ground vibration is normally associated with impact equipment such as jackhammers and the operation of some heavy-duty construction equipment, such as dozers and trucks. The effects of ground vibration may be unnoticeable at the lowest levels, result in low-rumbling sounds and detectable vibrations at moderate levels, and high levels of vibration can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions and sleeping.

Construction activities would require the use of heavy-duty off-road equipment such as dozers, graders, excavators, and various trucks (e.g., material and equipment haul trucks, water trucks). No pile driving or blasting would take place. Table 4.11-11 presents the levels of ground vibration that could be generated by the types of heavy-duty equipment that could be used during construction of the project.

Table 4.11-11 Representative Ground Vibration and Noise Levels for Construction Equipment

Equipment Type	PPV at 25 feet (in/sec)	Approximate L_V (VdB) at 25 feet
Small Dozer	0.003	58
Loaded Trucks	0.76	86
Large Dozer	0.089	87
Vibratory Roller (Compactor)	0.210	94

Notes: PPV = peak particle velocity; L_V = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4; VdB = vibration decibel

Source: FTA 2006

As shown in Table 4.11-11, of the heavy-duty equipment that could be used during project construction, the highest level of ground vibration would be generated by a vibratory roller. A vibratory roller operated within approximately 25 feet of an existing building or structure could expose that structure to levels of ground vibration that exceed Caltrans' recommended level of 0.2 inches per section (in/sec) PPV with respect to the prevention of structural damage. Also, a vibratory roller operated within 75 feet of a building could expose the building occupants to ground vibration levels that exceed the FTA maximum-acceptable vibration standard of 80 VdB with respect to human annoyance for residential uses. Because all construction activity would take place approximately 2,400 feet from sensitive receptors, there would be no exceedance of Caltrans' recommended level of 0.2 in/sec PPV with respect to the prevention of structural damage and FTA's standard of 80 VdB with respect to human annoyance for residential uses. Therefore, the project's exposure of persons to excessive levels of groundborne vibration would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.11-3: Long-Term Operational Non-Transportation Noise Levels

The primary source of on-site noise would be delivery-related activities occurring near the rendering building. Though noise associated with trucks and vehicles is typically considered a mobile source, delivery-activities would occur primarily on-site, in one location and behave more like stationary noise sources. It is expected that operational activities would occur over a 24-hour period. The project would generate exterior noise levels at nearby sensitive receptors in exceedance of County standards during nighttime operations. Therefore, the project's impact would be **potentially significant**.

Raw materials would be delivered to the site by way of operator-owned trucks, contract haulers, and customer-owned trucks. The rendering process would be continuous and typically operate 24 hours per day, 6 to 7 days per week. Processing would typically begin on Monday and run through Saturday or as needed on Sunday. Delivery schedules would be relatively stable with only limited seasonal fluctuations. Mechanical equipment would be located indoors; therefore, operational noise would be generated primarily from truck deliveries and on-site equipment (e.g., fork lifts, man lifts, pickup trucks, yard trucks, front-end loaders).

While trucks are typically mobile noise sources, delivery-related activities would occur primarily on-site, in one location and would behave more like a stationary noise source (e.g., various operational modes including short periods of full-power operation followed by extended periods of operation at lower power, idling, powered-off conditions, or extended presence at a given location to perform continuous or periodic operations). The fleet of vehicles operating on-site would include, but not be limited to, barrel trucks, pump trucks, end dumps, hopper trailers, and tankers. The types and numbers of vehicles would vary based on customer needs, type of service being provided, and economic conditions, but it is anticipated that up to approximately 75 trucks could access the site daily.

As shown in table 4.11-12, modeling anticipated that operational equipment would include fork lifts, man lifts, pickup trucks, and front-end loaders. Flatbed trucks were included to account for the noise generated by delivery trucks while operating on-site. When occurring concurrently and in close proximity, such activities could result in noise levels of approximately 85 dB L_{eq} and 90 dB L_{max} at a distance of 50 feet. Because the facility would operate over a 24-hour period, these activities would not be limited to the less noise-sensitive daytime hours.

Table 4.11-12 Noise Levels Generated by Typical Operational Equipment

Equipment Type	Maximum Noise Level (dB L_{max}) at 50 feet[1]	Typical Noise Level (dB L_{eq}) at 50 feet[2]
Man Lift	85	81
Pickup Truck	55	51
Pickup Truck	55	51
Front End Loader	80	76
Flatbed Truck	84	80
Flatbed Truck	84	80
Combined Noise Level at 50 feet	90	85
Attenuated Noise Level at 2,440 feet[3]	56	51

Notes: dB = decibels; L_{max} = maximum sound level; L_{eq} = equivalent continuous sound level

[1] Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacturer specified noise levels for each piece of equipment.

[2] Assumes typical usage factors

[3] Distance from location of on-site, operational activity to the nearest sensitive receptor.

Source: Federal Transit Administration (FTA) 2006; data modeled by Ascent Environmental 2019.

Operational activity by on-site vehicles would occur in the delivery/loading area in front of the rendering building. This location is approximately 2,440 feet from the nearest residential sensitive receptor. Estimates provided in this analysis are considered conservative as it is unlikely all analyzed machinery would operate continuously on-site over a 24-hour period. Detailed inputs and parameters for the estimated operational noise attenuation calculations are provided in Appendix C.

The project's stationary noise analysis was conducted using L_{eq} and L_{max} noise levels. These noise levels were adjusted to provide a comparison to County and OPR thresholds for interior and exterior noise levels. The County standards, show previously in Table 4.11-3, provide thresholds based on continuous noise over "X" minutes during a 1-hour period. It was conservatively assumed, for the purpose of this analysis, that the L_{max} value calculated for the project could occur continuously over "X" minutes during a 1-hour period to provide a comparison to County standards. Category 2 of the County's standards represents residential land uses. Therefore, the project would be required to generate exterior noise levels below 55 dB L_{max} during the daytime and 50 dB L_{max} during the nighttime. As shown in Table 4.11-12, the project would generate operational exterior noise levels at the nearby sensitive receptor of 56 dB L_{max}, which would be in excess of the County's daytime and nighttime exterior noise thresholds.

OPR standards indicate that a project should not expose a residential sensitive receptor to exterior CNEL noise levels greater than 60 dB. CNEL for the project was conservatively calculated assuming the project would generate the estimated L_{eq} continuously over a 24-hour period. Based on these assumptions, the project would generated CNEL of 58 dB, which would be less than the OPR exterior noise level standard.

Interior noise levels at the nearby sensitive residential receptor were calculated assuming the average exterior-to-interior noise level reduction of 24 dB (Caltrans 2007:7-37). The project would be required to generate interior noise levels below the County threshold of 50 dB L_{max} and the OPR CNEL threshold of 45 dB. As discussed above, the project would generate exterior noise levels at the nearby sensitive residential receptor of 56 dB L_{max} and 58 dB CNEL. With the 24-dB reduction applied, the project would generate interior noise levels at the nearest sensitive receptor of

32 dB L_{max} and 34 dB CNEL. Therefore, the project would generate interior levels below both the County and OPR thresholds.

However, as discussed above, project stationary sources could exceed applicable exterior noise standards and, thus, could result in a substantial increase in ambient noise levels at existing noise sensitive receptors in the vicinity. As a result, this impact is considered **potentially significant**.

Mitigation 4.11-3: Prepare a Noise Minimization Plan

The applicant shall hire a qualified acoustical specialist to prepare a noise minimization plan that will identify design strategies and noise attenuation features to reduce noise generated by the proposed project to below 45 dB L_{50} at the primary outdoor gathering area (i.e., yard associated with sensitive receptor) of all residencies in the vicinity of the project where project operational noise could result in excess noise levels. The noise minimization plan shall include, but not be limited to, a combination of the following measures (or other measures demonstrated to be equally effective) to reduce the effect of noise levels generated by on-site operational noise sources.

- Orient the building such that the building serves as a barrier protecting off-site receptors to noise generated by on-site operational equipment including fork lifts, man lifts, pickup trucks, front-end loaders, and delivery trucks. The typical sound level reduction a building could provide ranges from 12 dB with windows open to 27 dB with windows closed (EPA 1978:11) and additional reduction is achievable if masonry exterior walls are used in the building's construction (Caltrans 2002:7-37).
- Enclose the area where operational equipment would operate with one or more walls. Generally, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction.
- Construct a sound barrier along the sides of the project site between the sensitive receptors and the facility. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof). Scenic quality factors shall be taken into account during design and the barriers shall be designed to blend into the landscape on the project site, to the extent feasible. Generally, a barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction.
- Measures identified in the noise minimization plan shall be incorporated into the project design and identified on the site plan. The City shall verify that these measures are included in the site plan prior to approval of the final site plan.

Significance after Mitigation

Implementation of Mitigation Measure 4.11-3 would incorporate noise reduction measures detailed above into the final site plan to result in a noise reduction of at least 10 dB. With this reduction, the project would generate exterior noise levels at the nearby sensitive residential receptor of 46 L_{max}, which would comply with the County's exterior noise standard. This would reduce the impact to a **less-than-significant** level.

Impact 4.11-4: Exposure of Existing Sensitive Receptors to Excessive Traffic Noise Levels

Traffic related to project operation would increase the noise levels along these two roadway segments by no greater than 0.4 dB. Thus, increases in project-related traffic would not result in a substantial permanent increase in ambient noise levels in the project vicinity. This impact would be **less than significant**.

Project implementation would result in an increase in average daily traffic volumes on affected roadway segments and, potentially, an increase in traffic noise levels. Generally, a doubling of a noise source is required to result in an increase of 3 dB, which is perceived as barely noticeable by humans (Egan 2007:21). The City General Plan establishes a 3 dB increase in the immediate vicinity of the noise source as a substantial noise increase. The City's standard for noise increase is more stringent than the County's standard of 5 dB in this area. Thus, using the City's more stringent standard regarding traffic noise, an increase in 3 dB or more in traffic noise would be considered substantial.

Traffic noise levels on the study roadway segments were analyzed based on the existing traffic volumes and added traffic as a result of the project. The existing and existing plus project traffic volumes for the modeled roadway segments were provided in the project Transportation Study (Appendix D). Existing volumes and traffic noise levels are discussed above in Section 4.11.2, "Environmental Setting," and shown in Table 4.11-9. Existing plus project traffic volumes were estimated by adding project generated traffic to the existing volumes. The existing plus project traffic volumes were used to evaluate the degree to which project-generated vehicle trips would result in a change in traffic noise levels. Table 4.11-13 summarizes the modeled traffic noise levels along these roadway segments under existing plus project conditions, along with the change in noise levels from existing conditions.

Table 4.11-13 Summary of Modeled Existing Plus Project Traffic Noise Levels

Roadway Segment/Segment Description	Existing Plus Project Roadway L_{dn} (dB)	Distance to Contour (feet) with Existing Plus Project Volumes			ΔL_{dn} (dB) from Existing Conditions
		70 dB	65 dB	60 dB	
Jensen Avenue from Project Access to Cornelia Avenue	56.7	13	28	60	+0.3
Jensen Avenue from Cornelia Avenue to Brawley Avenue	66.3	14	31	66	+0.4
Jensen Avenue from Brawley Avenue to Marks Avenue	68.7	16	35	76	+0.3
Jensen Avenue from Marks Avenue to West Avenue	59.8	17	36	77	+0.3
Cornelia Avenue from Church Avenue to Jensen Avenue	60.3	17	36	79	+0.3
Cornelia Avenue from Jensen Avenue to North Avenue	56.8	6	13	28	0.0
Brawley Avenue from Church Avenue to Jensen Avenue	57.7	7	15	32	+0.6
Brawley Avenue from Jensen Avenue to North Avenue	59.9	5	11	25	0.0
Marks Avenue from Church Avenue to Jensen Avenue	60.2	4	10	21	+0.1
Marks Avenue from Jensen Avenue to North Avenue	56.4	6	12	26	0.0
West Avenue from Church Avenue to Jensen Avenue	55.5	4	9	19	0.0
West Avenue from Jensen Avenue to North Avenue	45.5	2	5	11	0.0

Notes: dB = decibels; L_{dn} = Day-Night Average Sound Level
All modeling assumes average pavement, level roadways (less than 1.5 percent grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. All noise levels are reported as A-weighted noise levels. For additional details, refer to Appendix C for detailed traffic data, and traffic-noise modeling input data and output results.
Source: Data modeled by Ascent Environmental in 2019

As shown by the modeling above, the additional trips along the study roadway segments generated by the project would not result in a substantial increase (i.e., 3 dB or greater) in traffic noise on any roadway segments. This is primarily because the increase in trips along the roadway would be relatively minor in comparison to existing traffic volumes. Two study roadway segments would experience noise levels in excess of the County's 65 L_{dn} dB standard; however, the project would not significantly increase these noise levels. Project related traffic would increase the noise levels along these two roadway segments by no greater than 0.4 dB. Thus, increases in project-related traffic would not result in a substantial permanent increase in ambient noise levels in the project vicinity. Therefore, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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4.12 TRANSPORTATION/TRAFFIC

This section describes the existing transportation system in the vicinity of the project site and evaluates the potential impacts on the system associated with implementation of the project. Roadway, transit, bicycle, and pedestrian components of the overall transportation system are included in the analysis. Impacts are evaluated under near-term (present-day) conditions with and without the project, and cumulative (year 2036) conditions with and without the project.

This section is based on information presented in the *Fresno Rendering Plan Relocation Transportation Impact Analysis (Transportation Study)* prepared by Fehr & Peers in 2019. The full Transportation Study is included as Appendix D and provides additional detailed information related to the transportation and circulation analysis. The traffic analysis focuses on a specific project transportation study area, which is defined in Section 4.12.2, "Environmental Setting," below.

- Comments were received on the Notice of Preparation (NOP) related to transportation from California Department of Transportation (Caltrans) indicating that more information is needed prior to Caltrans providing specific comments on the transportation element. Specifically, it was requested that Caltrans be provided with additional information related to site access, work schedules, and delivery timing.

4.12.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws pertaining to transportation are applicable.

STATE

Senate Bill 743

Senate Bill 743, passed in 2013, required the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

In December 2018, OPR and the State Natural Resources Agency submitted the updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The Office of Administrative Law subsequently approved the updated CEQA Guidelines; thus, implementing SB 743 and making vehicle miles traveled (VMT) the primary metric used to analyze transportation impacts. However, local agencies have until July 1, 2020, to opt-in and implement the updated guidelines.

LOCAL

City of Fresno 2035 General Plan

The City of Fresno adopted the Fresno General Plan in December 2014 as an update to the previous 2002 Fresno General Plan and serves as the community's guide for the continued development, enhancement, and revitalization of the Fresno metropolitan area (City of Fresno 2014). The following policies related to transportation and circulation are applicable to the project:

- **MT-2-i: Transportation Impact Studies.** Require a Transportation Impact Study (TIS), currently named Traffic Impact Study, to assess the impacts of new development projects on existing and planned streets for projects meeting one or more of the following criteria, unless it is determined by the City Traffic Engineer that the project site and surrounding area already has appropriate multimodal infrastructure improvements.

- When a project includes a General Plan amendment that changes the General Plan Land Use Designation.
- When the project will substantially change the off-site transportation system (auto, transit, bike, or pedestrian) or connection to the system, as determined by the City Traffic Engineer.
- Transportation impact criteria are based on a project's location within the City's Sphere of Influence. This is to assist with areas being incentivized for development. The four zones are listed below; the following criteria apply:
    - Traffic Impact Zone I (TIZ-I): represents the Downtown Planning Area. Maintain a peak hour LOS standard of F or better for all intersections and roadway segments. A TIS will be required for all development projected to generate 200 or more peak hour vehicle trips.
    - Traffic Impact Zone II (TIZ-II): generally represents areas of the City currently built up and wanting to encourage infill development. Maintain a peak hour LOS standard of E or better for all intersections and roadway segments. A TIS will be required for all development projected to generate 200 or more peak hour new vehicle trips.
    - Traffic Impact Zone III (TIZ-III): generally represents areas near or outside of the City Limits but within the sphere of influence (SOI) as of December 31, 2012. Maintain a peak hour LOS standard of D or better for all intersections and roadway segments. A TIS will be required for all development projected to generate 100 or more peak hour new vehicle trips.
    - Traffic Impact Zone IV (TIZ-IV): represents the southern employment areas within and planned by the City. Maintain a peak hour LOS standard of E or better for all intersections and roadway segments. A TIS will be required for all development projected to generate 200 or more peak hour new vehicle trips.

City of Fresno Traffic Impact Study Report Guidelines

The City of Fresno's Traffic Impact Study Report Guidelines (City of Fresno 2009) establish general procedures and requirements for the preparation of traffic impact studies associated with developments within the city. These guidelines include the preferred traffic analysis methodologies, significance criteria, and documentation requirements.

City of Fresno Bicycle Active Transportation Plan

The City of Fresno Active Transportation Plan (ATP) is a comprehensive guide outlining the vision of active transportation in the City of Fresno, and a roadmap for achieving that vision (City of Fresno 2016).

2000 Fresno County General Plan

The 2000 Fresno County General Plan (Fresno County 2000) includes the following policy related to transportation and circulation that is relevant to the project:

- **Policy TR-A.2:** The County shall plan and design its roadway system in a manner that strives to meet LOS D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the County.

4.12.2 Environmental Setting

This section describes the existing environmental setting that is the baseline scenario upon which project-specific impacts are evaluated. The baseline for this analysis represents conditions based on field observations conducted in Spring 2017 and traffic volume data collected in May 2017. The environmental setting for transportation includes baseline descriptions for roadway, bicycle, pedestrian, and transit facilities.

PROJECT STUDY AREA

The project study area was developed by Fehr & Peers with input from the City of Fresno and took into consideration the NOP comment letter. The following factors were considered when developing the study area: the project's

expected travel characteristics (including number of vehicle trips and directionality of those trips), primary travel routes to/from project vicinity, anticipated parking locations, mode split, and other considerations. The study area also includes bicycle, pedestrian, and transit facilities in the project vicinity.

Study Intersections

The study area includes the following existing intersections:

1. Jensen Avenue and Cornelia Avenue (Fresno County intersection)
2. Jensen Avenue and Brawley Avenue (Fresno County intersection)
3. Jensen Avenue and Marks Avenue (Fresno County intersection)
4. Jensen Avenue and West Avenue (Fresno County intersection)

Study Roadway Segments

The study area includes the following existing roadway segments:

1. Jensen Avenue between Project Access and Cornelia Avenue (Fresno County segment)
2. Jensen Avenue between Cornelia Avenue and Brawley Avenue (Fresno County segment)
3. Jensen Avenue between Brawley Avenue and Marks Avenue (Fresno County segment)
4. Jensen Avenue between Marks Avenue and West Avenue (City of Fresno/Fresno County segment)
5. Jensen Avenue between West Avenue and Fruit Avenue (City of Fresno/Fresno County segment)
6. Cornelia Avenue between Church Avenue and Jensen Avenue (Fresno County segment)
7. Cornelia Avenue between Jensen Avenue and North Avenue (Fresno County segment)
8. Brawley Avenue between Church Avenue and Jensen Avenue (Fresno County segment)
9. Brawley Avenue between Jensen Avenue and North Avenue (Fresno County segment)
10. Marks Avenue between Church Avenue and Jensen Avenue (Fresno County segment)
11. Marks Avenue between Jensen Avenue and North Avenue (Fresno County segment)
12. West Avenue between Church Avenue and Jensen Avenue (City of Fresno/Fresno County segment)
13. West Avenue between Jensen Avenue and North Avenue (City of Fresno segment)

For more details regarding jurisdictional control of the study area intersections and roadway segments see Appendix D.

Roadway Network

The roadway network in the city is generally a traditional grid-based network of north/south and east/west streets. Nearly every major street in the Fresno metropolitan area is regularly spaced at half-mile intervals. The grid system provides high levels of accessibility (i.e., travel choices) for travelers.

All of the study intersections have side-street-stop-control with Jensen Avenue being the uncontrolled, east-west approach.

All of the study roadway segments are two lane collectors with the exception of Jensen Avenue, which is classified as an arterial. All of the study roadway segments classified as collectors have 55 miles per hour (mph) posted speed limits. Jensen Avenue has striped and paved shoulders, while Cornelia Avenue, Brawley Avenue, Marks Avenue, and West Avenue do not.

TRAFFIC DATA COLLECTION

The existing traffic volumes at the four study intersections included in the analysis were based on intersection turning-movement counts conducted in May 2017 for both the a.m. and p.m. peak-hours. The Transportation Study used a modified version of the Fresno Council of Governments (Fresno COG) regional travel demand forecasting (TDF) model developed for the City of Fresno General Plan Update (Fresno COG 2012). All traffic volume forecasts were adjusted using the difference method to account for the difference between existing counts and the base year model forecasts. In the study area, the General Plan includes widening of Jensen Avenue east of Marks Avenue from two to four lanes and widening of Marks Avenue from two to four lanes north of Jensen Avenue. Additional detail on the use of the model and the adjustments made to generate existing traffic volumes is provided in Appendix D.

The existing intersection traffic counts collected in May 2017 included a breakdown of passenger vehicles and light trucks, and heavy vehicles at each study intersection. The share of heavy vehicles at each intersection is listed below:

1. Jensen Avenue and Cornelia Avenue: 21 percent heavy vehicles during the a.m. peak-hour and six percent during the p.m. peak-hour.
2. Jensen Avenue and Brawley Avenue: 25 percent heavy vehicles during the a.m. peak-hour and five percent during the p.m. peak-hour.
3. Jensen Avenue and Marks Avenue: 10 percent heavy vehicles during a.m. peak-hour and five percent during the p.m. peak-hour.
4. Jensen Avenue and West Avenue: 12 percent heavy vehicles during the a.m. peak-hour and five percent during the p.m. peak-hour.

Level of Service Definitions

Each study intersection and roadway segment was analyzed using the concept of LOS and the Transportation Research Board's *Highway Capacity Manual* (HCM) methodology. LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

The HCM methodology determines the LOS at signalized intersections by comparing the average control delay (i.e., delay resulting from initial deceleration, queue move-up time, time actually stopped, and final acceleration) per vehicle at the intersection to the established thresholds.

For signalized and all-way-stop controlled intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection. For side-street-stop-controlled intersections, the delay and LOS for the overall intersection is reported along with the delay for the worst-case movement. Table 4.12-1 displays the delay range associated with each LOS category for signalized and unsignalized intersections based on the methodology contained in the HCM 2010 (Fehr & Peers 2019).

Roadway segments LOS is determined by comparing traffic volumes to the roadway's functional capacity. This functional capacity is determined through a variety of factors including: roadway functional classification, number of travel lanes, and presence of two-way left-turn lanes. Table 4.12-2 displays the peak-hour volume for each functional roadway class associated with each LOS category for roadway segments. The thresholds shown in Table 4.12-2 were calculated based on the methodology contained in the HCM 2000 (TRB 2000).

Table 4.12-1 Intersection Level of Service Definitions

Level of Service	Description	Average Delay (Seconds/Vehicle)	
		Signalized Intersections	Stop Controlled Intersections
A	Very low delay. At signalized intersections, most vehicles do not stop.	≤ 10.0	≤ 10.0
B	Generally good progression of vehicles. Slight delays.	> 10.0 to 20.0	> 10.0 to 15.0
C	Fair progression. At signalized intersections, increased number of stopped vehicles.	> 20.0 to 35.0	> 15.0 to 25.0
D	Noticeable congestion. At signalized intersections, large portion of vehicles stopped.	> 35.0 to 55.0	> 25.0 to 35.0
E	Poor progression. High delays and frequent cycle failure.	> 55.0 to 80.0	> 35.0 to 50.0
F	Oversaturation. Forced flow. Extensive queuing.	> 80.0	> 50.0

Source: Fehr & Peers 2019

Table 4.12-2 Roadway Segment Functional Class and Peak-hour Level of Service Thresholds

Functional Class	Median	Lanes	Peak-Hour Level of Service Capacity Thresholds				
			A	B	C	D	E
Freeway	N/A	4	2,720	4,460	6,630	7,720	8,630
		3+Aux	2,360	3,860	5,640	6,730	7,530
		3	2,000	3,270	4,660	5,740	6,430
		2+Aux	1,650	2,700	3,850	4,760	5,340
		2	1,300	2,130	3,050	3,790	4,260
State Expressway	Divided	6	2,410	3,960	5,730	7,450	8,450
		4	1,610	2,650	3,810	4,960	5,630
		2	810	1,340	1,890	2,470	2,810
City Expressway	Raised Median	6	--	--	1,860	6,170	6,520
		5	--	--	1,520	5,110	5,430
		4	--	--	1,180	4,050	4,340
		2	--	--	520	1,910	2,160
Super Arterial	Raised Median	6	--	--	--	4,910	6,240
		5	--	--	--	4,040	5,195
		4	--	--	--	3,170	4,150
Arterial	Raised Median	8	--	--	2,120	7,070	7,490
		6	--	--	1,560	5,270	5,610
		5	--	--	1,280	4,370	4,670
		4	--	--	1,000	3,470	3,730
		3	--	--	720	2,555	2,795
		2	--	--	440	1,640	1,860
	TWLTL	4	--	--	940	3,290	3,550
		2	--	--	420	1,550	1,760
	Undivided	4	--	--	770	2,740	2,980
		2	--	--	340	1,270	1,480

Table 4.12-2 Roadway Segment Functional Class and Peak-hour Level of Service Thresholds

Functional Class	Median	Lanes	Peak-Hour Level of Service Capacity Thresholds				
			A	B	C	D	E
Collector	TWLTL	4	--	--	940	3,290	3,550
		2	--	--	420	1,550	1,760
	Undivided	4	--	--	770	2,740	2,980
		2	--	--	340	1,270	1,480
One-Way	Undivided	3	--	1,960	2,240	2,430	2,610
		2	--	1,250	1,490	1,620	1,740
		1	--	550	740	800	870
Rural State Highway	Undivided	2	310	570	1,020	1,730	2,470
Rural Arterial	Divided	4	--	--	1,950	3,580	3,780
	Undivided	2	--	--	570	1,230	1,310
Rural Collector/Local	Undivided	2	--	--	700	930	1,000

Notes: N/A = Not applicable for operational class; Aux. = Auxiliary Lane; -- = LOS not achievable for type of facility

Source: TRB 2000

Existing Intersection Operations

Table 4.12-3 displays the existing peak-hour intersection operations at the study intersections (refer to Appendix D for technical calculations). As shown below, all of the study intersections currently operate at an acceptable LOS C or better during both the a.m. and p.m. peak-hours.

Table 4.12-3 Intersection Operations – Existing Conditions

Intersection	Traffic Control	LOS Threshold	Peak-Hour	Existing Conditions	
				Delay[1]	LOS
1. Jensen Avenue and Cornelia Avenue	SSSC	C	a.m. p.m.	3 (12) 4 (14)	A (B) A (B)
2. Jensen Avenue and Brawley Avenue	SSSC	C	a.m. p.m.	4 (12) 2 (13)	A (B) A (B)
3. Jensen Avenue and Marks Avenue	SSSC	C/D	a.m. p.m.	4 (14) 5 (16)	A (B) A (C)
4. Jensen Avenue and West Avenue	SSSC	D	a.m. p.m.	1 (12) 1 (13)	A (B) A (B)

Notes: LOS = Level of Service. SSSC = Side-Street Stop-Controlled

1. For SSSC intersections, the LOS and control delay for the worst movement is shown in parentheses next to the average intersection LOS and delay. All results are rounded to the nearest second.

Source: Fehr & Peers 2019:13

Existing Roadway Segment Operations

Table 4.12-4 displays the existing peak-hour roadway segment operations along the study roadway segments. As shown below, all of the study roadways will operate at LOS D or better during both the a.m. and p.m. peak-hours. Additionally, the county roadway segments, which include Cornelia Avenue and Brawley Avenue, currently operate at an acceptable LOS C or better.

Table 4.12-4 Roadway Segment Operations – Existing Conditions

Segment	Between	LOS Threshold	Lanes	Peak-Hour	Existing Conditions		
					Volume	V/C	LOS
Jensen Avenue	Project Access to Cornelia Avenue	C	2	a.m.	257	0.17	C
				p.m.	337	0.23	C
	Cornelia Avenue to Brawley Avenue	C	2	a.m.	268	0.18	C
				p.m.	373	0.25	D
	Brawley Avenue to Marks Avenue	C	2	a.m.	427	0.29	D
				p.m.	468	0.32	D
	Marks Avenue to West Avenue	D	2	a.m.	405	0.27	D
				p.m.	483	0.33	D
	West Avenue to Fruit Avenue	D	2	a.m.	412	0.28	D
				p.m.	499	0.34	D
Cornelia Avenue	Church Avenue to Jensen Avenue[1]	C	2	a.m.	84	0.06	C
				p.m.	112	0.08	C
	Jensen Avenue to North Avenue[1]	C	2	a.m.	83	0.06	C
				p.m.	119	0.08	C
Brawley Avenue	Church Avenue to Jensen Avenue[1]	C	2	a.m.	93	0.06	C
				p.m.	83	0.06	C
	Jensen Avenue to North Avenue[1]	C	2	a.m.	71	0.05	C
				p.m.	39	0.03	C
Marks Avenue	Church Avenue to Jensen Avenue	C/D	2	a.m.	168	0.11	C
				p.m.	201	0.14	C
	Jensen Avenue to North Avenue	C/D	2	a.m.	96	0.06	C
				p.m.	127	0.09	C
West Avenue	Church Avenue to Jensen Avenue	D	2	a.m.	44	0.03	C
				p.m.	55	0.04	C
	Jensen Avenue to North Avenue	D	2	a.m.	25	0.02	C
				p.m.	41	0.03	C

Notes: V/C = volume-to-capacity ratio; LOS = level of service

1. Indicates roadway segment within Fresno County jurisdiction

Source: Fehr & Peers 2019:14

TRANSIT SYSTEM

Public transportation in the city consists of public buses, express bus services, demand-response paratransit, and passenger rail.

Fresno Area Express (FAX) is the principal transit provider in the city. FAX operates 20 routes and provides more than 17,000,000 annual passenger boardings, averaging about 41,000 passenger trips per day. The FAX system runs about 1,000 bus operations per day. Ridership trends in recent years have shown an increase in the number of people using transit, which may be attributable to poor economic conditions and the rising cost of travel.

Handy Ride is a demand-response service for seniors and persons with disabilities, as required by the Americans with Disabilities Act. This paratransit service serves up to 12,500 eligible individuals in the FAX service area and provided about 240,000 passenger rides in fiscal year 2010.

The Fresno County Rural Transit Agency (FCRTA) and Amtrak also provide services for regional travel outside of the Fresno-Clovis Metropolitan Area. FCRTA provides service to many of the unincorporated communities in Fresno County such as Coalinga and Mendota. The San Joaquin Line is one of Amtrak's passenger rail services with connections between the San Joaquin Valley, Sacramento Valley, San Francisco Bay Area, and Los Angeles. Greyhound provides similar (more frequent) bus service to these regions.

BICYCLE AND PEDESTRIAN SYSTEM

The city is generally flat, which provides a favorable environment for bicycling and walking as a mode of transportation. Because the project site is located in an industrial area approximately 2 miles from the city proper, there are few bicycle and pedestrian facilities in the project vicinity, and no designated pedestrian facilities exist at any of the study intersections.

The ATP, adopted in March 2017, identifies existing and future planned bicycle and pedestrian facilities and the bicycle and pedestrian index of each area within the City's jurisdiction. The ATP identifies the project vicinity as having a low bicycle and pedestrian index, meaning that it has relatively few bicycle and pedestrian trips. This low bicycle and pedestrian index is consistent with the intensity of land uses in the project vicinity. Beyond the existing bicycle and pedestrian facilities, the City's ATP identifies the following planned improvements in the vicinity of the project: Class II bicycle lanes along Jensen Avenue; Class I bicycle facility along Marks Avenue; and sidewalks along Jensen Avenue and West Avenue.

4.12.3 Environmental Impacts and Mitigation Measures

This section describes the analysis techniques, assumptions, and results used to identify potentially significant impacts of the project on the transportation system. Transportation/traffic impacts are described and assessed, and mitigation measures are recommended for impacts identified as significant or potentially significant.

METHODOLOGY

The project would generally be located on the southwest corner of the Jensen Avenue and Cornelia Avenue intersection and would be set back from the road approximately 160 feet. The project would employ up to 70 full-time employees who would work in three shifts with a maximum of 25 employees on-site per shift. The facility would operate 24-hours per day, up to seven days per week. The transportation analysis methodology uses the anticipated travel characteristics of the project, trip generation assumptions, and trip distribution based on the project description.

Analysis Scenarios

The following scenarios are analyzed in this EIR:

- Existing Conditions – represents the baseline condition, upon which project impacts are measured. The baseline condition represents roadway geometrics observed in Spring 2017 and traffic volumes collected in May 2017.
- Existing Plus Project Conditions – reflects changes in existing travel conditions associated with implementation of the project.
- Cumulative Conditions – analyzes conditions for a cumulative scenario with the effects of reasonably foreseeable future projects, which includes modified traffic forecasts from the Fresno COG regional travel demand forecasting model and planned transportation improvement projects.
- Cumulative Plus Project Conditions – reflects changes in cumulative conditions associated with implementation of the project.

Traffic Forecasts

Traffic volume forecasts for the project analysis scenarios under Existing and Cumulative conditions were developed by adding the project trip generation to the existing traffic counts and cumulative no project traffic volume forecasts, using the trip distribution for employee and truck trips detailed below.

As discussed previously, the cumulative traffic volume forecasts were developed using the modified version of the Fresno COG regional TDF model developed for the City of Fresno General Plan Update. All traffic volume forecasts were adjusted, using the difference method, to account for the difference between existing counts and the base year model forecasts. In the study area, the General Plan includes widening of Jensen Avenue east of Marks Avenue from two to four lanes and widening of Marks Avenue from two to four lanes north of Jensen Avenue.

Trip Generation

The project is estimated to generate 273 trips per day with 36 trips occurring during the a.m. peak-hour (including 23 employee commute trips and 13 truck trips) and 28 trips occurring during the p.m. peak-hour (including 21 employee commute trips and 8 truck trips). A summary of the estimated project trips is shown in Table 4.12-5. A detailed description of the methodology used to estimate the project's daily and peak-hour trips is included in Appendix D.

Table 4.12-5 Trip Generation

User	Quantity	Vehicle Occupancy[1]	Vehicles per Day	Trip Generation[2]						
				Daily	a.m. peak-hour			p.m. peak-hour		
					Total	In	Out	Total	In	Out
Employee	70	1.14	61	123	23	17	6	21	9	12
Trucks per Day	75	1.00	75	150	13	7	6	8	5	3
		Total	136	273	36	24	12	28	14	15

[1] Vehicle occupancy is measured in persons per vehicle.

[2] Daily vehicle trips were developed by multiplying total vehicles by two to account for vehicles entering and exiting the project. Employee peak-hour trips were based on a.m. and p.m. percent of daily vehicles from the ITE *Trip Generation Manual, 9th Edition* Land Use 140 (Manufacturing). Truck peak-hour trips were based on the Fontana Trip Generation Study.

Source: Fehr & Peers 2019:18

Trip Distribution and Assignment

The distribution of employee trips was developed based on existing counts and the output for the modified version of the Fresno COG travel forecasting model developed for the City of Fresno General Plan. The trip distribution for project traffic is expected to be different for employees and haul trucks. Trucks would enter and exit the site using the project driveway on Jensen Avenue, and employees would enter and exit the site using either the Jensen Avenue driveway or the Cornelia Avenue driveway. Truck trips generated by the project would only travel along eastbound and westbound Jensen Avenue in the project vicinity. A majority of the employee trips would originate to the east of the project site and travel along Jensen Avenue. Employee and truck traffic generated by the project site was assigned to the study roadway segments and intersections based on the trip distribution patterns to generate Existing Plus Project and Cumulative Plus Project conditions. A summary of the assumed trip distribution pattern is shown in Table 4.12-6.

Table 4.12-6 Trip Distribution

Roadway	Trip Distribution			
	North	South	East	West
Jensen Avenue	0 (0%)	0% (0%)	98% (100%)	0% (100%)
Cornelia Avenue (north of project access)	1% (0%)	100% (0%)	0% (0%)	0% (0%)
Cornelia Avenue (south of project access)	1% (0%)	1% (0%)	0% (0%)	0% (0%)

Table 4.12-6 Trip Distribution

Roadway	Trip Distribution			
	North	South	East	West
Brawley Avenue	1% (0%)	1% (0%)	0% (0%)	0% (0%)
Marks Avenue	2% (0%)	2% (0%)	0% (0%)	0% (0%)
West Avenue	1% (0%)	1% (0%)	0% (0%)	0% (0%)

Notes: The trip distribution percentages for trucks is shown in parenthesis next to the trip distribution percentage for employees.

Source: Fehr & Peers 2019:18

Traffic Operations

Traffic operations at the study intersections were analyzed using procedures and methodologies contained in the HCM 2010. These methodologies were applied using Synchro software, Version 9, developed by Trafficware. Synchro, Version 9 incorporates this HCM methodology to calculate intersection LOS. Heavy vehicle percentages from the count data were input into the Synchro software. Synchro uses this information, as well as the HCM recommended passenger car equivalence factor of 2.0, to account for heavy vehicles' effect on intersection operations.

Roadway segment traffic operations was conducted using the roadway segment analysis methodology applied for the City's General Plan update. Traffic volumes on the study roadway segments are used to determine the overall usage and congestion. Note that the roadway segment analysis is based on traffic counts taken at a single location, which was intended to be representative of the entire segment. A link connects two intersections; a segment is a series of links. The segments used in this analysis were developed based on where a series of links had common physical and traffic conditions. Traffic operations for the study roadway segments were analyzed by comparing the segment traffic volumes to the LOS thresholds presented in the Table 4.12-2.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines:

Impacts to signalized intersection operating conditions are considered significant if the project would:

- Cause a signalized study intersection within the City of Fresno currently operating at LOS D or better to degrade to LOS E or worse,
- Increase the average delay for a signalized study intersection within the City of Fresno currently operating at LOS E or worse by 5.0 seconds or more,
- Cause a signalized study intersection within the County of Fresno currently operating at an acceptable level to degrade to an unacceptable level, or
- Increase the average delay for a signalized study intersection within the County of Fresno currently operating at an unacceptable level by more than 5.0 seconds.

Impacts to unsignalized intersection operating conditions are considered significant if the project would:

- Cause a movement or approach at an unsignalized study intersection within the County of Fresno currently operating at an acceptable level to degrade to an unacceptable level, or
- Increase the average delay on a movement or approach at an unsignalized study intersection within the County of Fresno currently operating at an unacceptable level by more than 5.0 seconds.

Impacts to roadway segment operating conditions are considered significant if the project would:

- Cause a study roadway segment within the City of Fresno currently operating at LOS D or better to degrade to LOS E or worse,

- Increase the volume-to-capacity (V/C) ratio of a study roadway segment within the City of operating at LOS E or worse by 0.05 or more,
- Cause a study roadway segment within the County of Fresno currently operating at an acceptable level to degrade to an unacceptable level, and increase the V/C ratio by more than 0.05, or
- Increase the V/C ratio (on a directional peak hour basis) of a study roadway segment within the County of Fresno currently operating at an unacceptable level by more than 0.05.

Impacts to the transit system, bicycle network, and/or pedestrian facilities are considered significant if the project would:

- Disrupt or interfere with existing or planning public transit services or facilities;
- Create an inconsistency with policies concerning transit systems set forth by the City of Fresno General Plan or other applicable adopted policy document;
- Disrupt or interfere with existing or planning bicycle/pedestrian facilities;
- Result in unsafe conditions for pedestrians, including unsafe pedestrian/bicycle or pedestrian/vehicle conflicts;
- Result in unsafe conditions for bicycles, including unsafe bicycle/pedestrian or bicycle/vehicle conflicts; or
- Create an inconsistency with policies related to bicycle or pedestrian systems set forth by the City of Fresno General Plan, the City of Fresno Bicycle, Pedestrian, and Trails Master Plan, or another applicable adopted policy document.

Impacts to transportation hazards are considered significant if the project would:

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

Impacts to emergency access are considered significant if the project would:

- Result in inadequate emergency access.

ISSUES NOT DISCUSSED FURTHER

The airport nearest to the project site is the Fresno Chandler Executive airport approximately 3.5 miles northeast of the project site. The project would include the development of two new 60-foot storage silos, which represent the largest on-site equipment. These silos are not tall enough nor is the project close enough to affect air traffic at the nearest airport. Therefore, the project would not result in any impacts to air traffic patterns. This issue will not be discussed further in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.12-1: Impacts to Intersection Operating Conditions

All study intersections are projected to operate at an acceptable LOS under Existing Plus Project conditions during both peak-hours. Thus, this impact would be **less than significant**.

Existing Plus Project traffic volumes account for the addition of vehicle trips generated by the project to the existing volumes in accordance with the trip distribution and assignment previously presented. Table 4.12-7 displays the a.m. and p.m. peak-hour study intersection operating conditions under the Existing and Existing Plus Project scenarios. For technical calculations refer to Appendix D.

Table 4.12-7 Intersection Operations – Existing Plus Project Conditions

Intersection	Traffic Control	LOS Threshold	Peak-Hour	Existing Conditions		Existing Plus Project Conditions	
				Delay[1]	LOS	Delay[1]	LOS
1. Jensen Avenue and Cornelia Avenue	SSSC	C	a.m.	3 (12)	A (B)	4 (12)	A (B)
			p.m.	4 (14)	A (B)	4 (15)	A (B)
2. Jensen Avenue and Brawley Avenue	SSSC	C	a.m.	4 (12)	A (B)	3 (13)	A (B)
			p.m.	2 (13)	A (B)	2 (13)	A (B)
3. Jensen Avenue and Marks Avenue	SSSC	C/D	a.m.	4 (14)	A (B)	4 (15)	A (C)
			p.m.	5 (16)	A (C)	5 (17)	A (C)
4. Jensen Avenue and West Avenue	SSSC	D	a.m.	1 (12)	A (B)	1 (12)	A (B)
			p.m.	1 (13)	A (B)	1 (14)	A (B)

Notes: SSSC = side-street-stop-controlled; LOS = level of service.

1. Delay is represented in seconds. For SSSC intersections, the delay and LOS for the most delayed individual movement is shown in parentheses next to the average intersection delay and LOS.

Source: Fehr & Peers 2019: 19

As shown in Table 4.12-7, all four study intersections would continue to operate at acceptable levels with the addition of project related traffic under Existing Plus Project conditions. Therefore, the project's impacts to intersection operating conditions under Existing Plus Project conditions would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.12-2: Impacts to Roadway Segment Operations

All study roadway segments are projected to operate at an acceptable LOS during both peak-hours under all analysis conditions. Thus, this impact would be **less than significant**.

Table 4.12-8 shows the Existing and Existing Plus Project a.m. and p.m. peak-hour operating conditions for the study roadway segments. As shown in Table 4.12-8, all of the study roadway segments except for the five study segments along Jensen Avenue would operate at an acceptable LOS under Existing Plus Project conditions. The addition of project trips to the County roadway segment of Jensen Avenue between the project access and Cornelia Avenue would result in the degradation of LOS from an acceptable level (i.e., LOS C) to and unacceptable level (i.e., LOS D) in the p.m. peak-hour. Additionally, the segments of Jensen Avenue from Cornelia Avenue to Fruit Avenue would operate at unacceptable levels (i.e., LOS D) during at least one peak-hour with the addition of project trips. However, the volume-to-capacity ratio will not increase by more than 0.05 along any of these roadway segments with the addition of project generated traffic. Thus, this impact would be **less than significant.**

Table 4.12-8 Roadway Segment Operations – Existing Conditions

Segment (Jurisdiction)	Between	Lanes	LOS Threshold	Peak-Hour	Existing Conditions			Existing Plus Project Conditions		
					Volume	V/C	LOS	Volume	V/C	LOS
Jensen Avenue	Project Access to Cornelia Avenue	2	C	a.m.	257	0.17	C	288	0.19	C
				p.m.	337	0.23	C	360	0.24	D
	Cornelia Avenue to Brawley Avenue	2	C	a.m.	268	0.18	C	232	0.22	C
				p.m.	373	0.25	D	413	0.28	D
	Brawley Avenue to Marks Avenue	2	C	a.m.	427	0.29	D	481	0.32	D
				p.m.	468	0.32	D	507	0.34	D
	Marks Avenue to West Avenue	2	D	a.m.	405	0.27	D	457	0.31	D
				p.m.	483	0.33	D	521	0.35	D
	West Avenue to Fruit Avenue	2	D	a.m.	412	0.28	D	462	0.31	D
				p.m.	499	0.34	D	536	0.36	D
Cornelia Avenue	Church Avenue to Jensen Avenue	2	C	a.m.	84	0.06	C	85	0.06	C
				p.m.	112	0.08	C	112	0.08	C
	Jensen Avenue to North Avenue	2	C	a.m.	83	0.06	C	108	0.07	C
				p.m.	119	0.08	C	137	0.09	C
Brawley Avenue	Church Avenue to Jensen Avenue	2	C	a.m.	93	0.06	C	94	0.06	C
				p.m.	83	0.06	C	83	0.06	C
	Jensen Avenue to North Avenue	2	C	a.m.	71	0.05	C	72	0.05	C
				p.m.	39	0.03	C	39	0.03	C
Marks Avenue	Church Avenue to Jensen Avenue	2	C/D	a.m.	168	0.11	C	169	0.11	C
				p.m.	201	0.14	C	202	0.14	C
	Jensen Avenue to North Avenue	2	C/D	a.m.	96	0.06	C	97	0.07	C
				p.m.	127	0.09	C	128	0.09	C
West Avenue	Church Avenue to Jensen Avenue	2	D	a.m.	44	0.03	C	45	0.03	C
				p.m.	55	0.04	C	55	0.04	C
	Jensen Avenue to North Avenue	2	D	a.m.	25	0.02	C	26	0.02	C
				p.m.	41	0.03	C	41	0.03	C

Notes: V/C = volume-to-capacity ratio; LOS = level of service.

Source: Fehr & Peers 2019:21

Mitigation Measures

No mitigation is required for this impact.

Impact 4.12-3: Impacts to Transportation Hazards

The project design would not result in a substantial increase in transportation hazards (i.e. sharp curves or dangerous intersections) or add incompatible vehicles to existing or planned transportation facilities (i.e., farm equipment). Thus, this impact would be **less than significant**.

The project would include separate access points for employees/visitors and trucks; therefore, ingress/egress is designed to avoid conflicts between these vehicle types. Additionally, final site design will require review and approval by the City of Fresno Public Works Department, which would include a review of all access points, driveways, and parking areas to ensure consistency with City design and safety standards. Thus, impacts to transportation hazards would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.12-4: Impacts to Emergency Access

The project would be designed according to City of Fresno standards would be reviewed and approved by the City of Fresno and the appropriate emergency service providers; and thus, would provide adequate emergency access. This is impact would be **less than significant**.

The project includes two access points: one on Jensen Avenue for trucks and one on Cornelia Avenue for employees and visitors. All driveways and internal roads would be required to be designed to City of Fresno standards and generally accepted engineering standards (including width and turning radius requirements for safe access by emergency vehicles). Additionally, project access and design would be reviewed and approved by the City of Fresno and the appropriate emergency service providers; thus, ensuring adequate emergency access would be provided. Therefore, impacts to emergency access would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 4.12-5: Impacts to Alternative Transportation Modes

The project would not conflict with any adopted policies, plans, or programs related to transit, bicycle, or pedestrian facilities, nor would the project decrease the performance or safety of any existing facilities. Thus, this impact would be **less than significant**.

Consistent with the rural agricultural and industrial setting of the project, there are very few existing or planned bicycle or pedestrian facilities in the vicinity of the project site. The City of Fresno's ATP identifies the project vicinity as having a low bicycle and pedestrian index, which indicates a low level of trips being made by walking and biking. Given the remote location of the project site and the type of land use, it is not likely that employees or visitors would travel to the site by foot or bicycle. Thus, the project would not disrupt existing or planned bicycle or pedestrian facilities or create any policy inconsistencies related to bicycle- or pedestrian-related policies.

There are no existing or planned transit routes in the vicinity of the project; and thus, the project would not disrupt any existing or planned transit facilities. Additionally, the relocation of the plant would not place any additional demand on transit and would not conflict with transit policies for the area. Thus, impacts to alternative transportation modes would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

4.13 ENERGY

This section was prepared pursuant to the State CEQA Guidelines Section 15126 and Appendix F of the State CEQA Guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether implementing the project would result in inefficient, wasteful, and unnecessary consumption of energy.

4.13.1 Regulatory Setting

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the U.S. Environmental Protection Agency's [EPA] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the State provides rebates/tax credits for installation of renewable energy systems, and offers the Flex Your Power program promotes conservation in multiple areas. At the local level, individual cities and counties establish policies in their general plans and climate action plans related to the energy efficiency of new development and land use planning and to the use of renewable energy sources.

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act (1992 and 2005) and Energy Independence and Security Act of 2007

The Energy Policy Act of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. The Act includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally-fueled fleets in metropolitan areas. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

The Energy Independence and Security Act of 2007 increased the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent. By addressing renewable fuels and CAFE standards, the Energy Independence and Security Act of 2007 will build on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

STATE

State of California Energy Action Plan

California Energy Commission (CEC) is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update). The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access.

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) establishes a renewables portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcome of this legislation will impact regional transportation powered by electricity. As of 2016, the State has reported that 21 percent of electricity is sourced from certified renewable sources (CPUC 2018). The outcome of this legislation will affect regional transportation powered by electricity.

SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. The state met the 2016 target and is on track to meet the 2020 target.

Senate Bill 100: California Renewables Portfolio Standard Program

SB 100 requires that all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, supply 44 percent of retail sales from renewable resources by December 31, 2024, 50 percent by December 31, 2026, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The law requires that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Assembly Bill 1007: State Alternative Fuels Plan

Assembly Bill (AB) 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with the California Air Resources Board (CARB) and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

California Green Building Standards

The 2019 Title 24 Part 6 Building Energy Efficiency Standards were adopted by the CEC on May 9, 2018, and will take effect on January 1, 2020. The standards are designed to move the state closer to its zero net energy goals for new

residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (California Code of Regulations, Title 24, Part 6, Section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018b). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24 Part 6.

Executive Order S-06-06

Executive Order (EO) S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The Executive Order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The Executive Order also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- increase environmentally- and economically-sustainable energy production from organic waste;
- encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- create jobs and stimulate economic development, especially in rural regions of the state; and
- reduce fire danger, improve air and water quality, and reduce waste.

As of 2015, 3.2 percent of the total electricity system power in California was derived from biomass.

Assembly Bill 32, Climate Change Scoping Plan and Update

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve a reduction of approximately 118 million metric tons (MMT) of carbon dioxide-equivalent (CO_2e) emissions, or approximately 21.7 percent from the State's projected 2020 emission level of 545 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 47 MMT CO_2e, or almost 10 percent, from 2008 emissions). In May 2014, CARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate progress that has been made between 2000 and 2012 (CARB 2014). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014). The update also reports the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

After releasing multiple versions of proposed updates in 2017, CARB adopted the final version titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan), which lays out the framework for achieving the 2030 reductions as established in more recent legislation (discussed below). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 level before 2030.

The measures identified in the 2017 Scoping Plan will have the co-benefit of reducing California's dependency on fossil fuels and making land use development and transportation systems more energy efficient. More details about the statewide GHG reduction goals and scoping plan measures are provided in the regulatory setting of Section 4.7, "Greenhouse Gas Emissions and Climate Change."

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. Implementation of SB 375 will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

The project site is in Fresno County, and the Fresno Council of Governments (Fresno COG) serves as the MPO for Fresno County. Fresno COG adopted its Sustainable Communities Strategy (SCS) in 2014, and is currently undergoing an update scheduled for adoption in 2018. Fresno COG was tasked by CARB to achieve a 5 percent per capita reduction compared to 2005 emissions by 2020 and a 10 percent per capita reduction by 2035, which CARB anticipated the region would exceed by implementing its SCS (CARB 2018). In March 2018, CARB adopted the Target Update for the SB 375 targets tasking Fresno COG to achieve a 6 percent and a 13 percent per capita reduction by 2020 and 2035, respectively (CARB 2018).

Executive Order B-30-15

On April 20, 2015, Executive Order (EO) B-30-15 was signed into law to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (Assembly Bill 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, SB 32 and AB 197 were signed into law, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050. Achievement of these goals will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

LOCAL

City of Fresno

City of Fresno General Plan

The City of Fresno General Plan (2014) includes the following policies applicable to the energy efficiency of new development and reducing community-wide energy consumption in Fresno.

- **Policy RC-8-a Existing Standards and Programs:** Continue existing beneficial energy conservation programs, including adhering to the California Energy Code in new construction and major renovations.
- **Policy RC-8-c Energy Conservation in New Development:** Consider providing an incentive program for new buildings that exceed California Energy Code requirements by fifteen percent.
- **Policy HC-3-f New Drive-Through Facilities:** Include in the Development Code design review to reduce vehicle emissions resulting from queued idling vehicles at drive-through facilities in proximity to residential neighborhoods.
- **Policy MT-2-b Reduce Vehicle Miles Traveled and Trips:** Partner with major employers and other responsible agencies, such the San Joaquin Valley Air Pollution Control District and the Fresno Council of Governments, to implement trip reduction strategies, such as eTRIP, to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips, thereby making better use of the existing transportation system.
- **Policy MT-8-b Transit Serving Residential and Employment Nodes:** Identify the location of current and future residential and employment concentrations and Activity Centers throughout the transit service area in order to facilitate planning and implementation of optimal transit services for these uses. Work with California State University, Fresno to determine locations within the campus core for bus stops.

4.13.2 Environmental Setting

PHYSICAL SETTING

Energy Facilities and Services in the Project Area

Electric and natural gas services in the City of Fresno are provided by Pacific Gas and Electric Company (PG&E).

Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides one third of the electricity used in California, coming from both California-based power plants, as well as Pacific Northwest- and Southwest-based power plants outside the state. After natural gas generation, electricity in California is mostly generated by renewables (29 percent), large hydroelectric (15 percent), and nuclear (9 percent) (CEC 2018a). The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount hydroelectric power that is available, and other factors. PG&E is the primary electricity and natural gas supplier in the City of Fresno. As of 2016, PG&E was powered by 33 percent renewables (CPUC 2018).

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, AB 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- biodiesel,
- electricity,

- ethanol (E-10 and E-85),
- hydrogen,
- natural gas (methane in the form of compressed and liquefied natural gas),
- propane,
- renewable diesel (including biomass-to-liquid),
- synthetic fuels, and
- gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of CEC, CARB, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of December 2018, Fresno County contained over 150 alternative fueling stations (AFDC 2018).

COMMERCIAL AND RESIDENTIAL ENERGY USE

Homes built between 2000 and 2015 used 14 percent less energy per square foot than homes built in the 1980s, and 40 percent less energy per square foot than homes built before 1950. However, the increase in size of newer homes has offset these efficiency improvements. Primary energy consumption in the residential sector total 21 quadrillion Btu in 2009 (the latest year the EIA's *Residential Energy Consumption Survey* was completed), equal to 54 percent of consumption in the buildings sector and 22 percent of total primary energy consumption in the U.S. Energy consumption increased 24 percent from 1990 to 2009. However, because of projected improvements in building and appliance efficiency, the EIA 2017 Annual Energy Outlook forecast a 5-percent increase in energy consumption from 2016 to 2040 (EIA 2017).

In aggregate, commercial buildings consumed 46 percent of building energy consumption and approximately 19 percent of U.S. energy consumption. In comparison, the residential sector consumed approximately 22 percent of U.S. energy consumption (EIA 2012).

ENERGY USE FOR TRANSPORTATION

On-road vehicles use about 90 percent of the petroleum consumed in California. The California Department of Transportation (Caltrans) projected 511 million gallons of gasoline and diesel were consumed in Fresno County in 2015, an increase of approximately 64 million gallons of fuel from 2010 levels (Caltrans 2008).

ENERGY USE AND CLIMATE CHANGE

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of the earth's temperature. For an analysis of greenhouse gas production and the project's impacts on climate change, refer to Section 4.7, "Greenhouse Gas Emissions and Climate Change."

4.13.3 Impacts and Mitigation Measures

METHODOLOGY

Levels of construction- and operation-related energy consumption by the project were estimated, including the number of megawatt-hours of electricity, therms of natural gas, gallons of gasoline, and gallons of diesel fuel. Modeling was based on project-specific information, including the total square footage of the project and number of new employees and delivery trucks. Where project-specific information was not known, energy consumption

estimates were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program, based on the project's location. The impact analysis summarizes the levels of energy consumption for each year of construction and for the first year of operation at 2021 buildout. It also summarizes the gasoline and diesel consumption estimated for construction and operational mobile trips.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix F (Energy Conservation) of the State CEQA Guidelines, the project would result in a significant impact related to energy if it would:

- result in wasteful, inefficient, or unnecessary consumption of energy.

However, neither CEQA nor the State CEQA Guidelines establish thresholds that define wasteful, inefficient, or unnecessary use. Therefore, this section includes a qualitative discussion of the potential for the project to result in the unnecessary, inefficient, or wasteful consumption of energy.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 4.13-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy During Construction or Operation

The project would increase electricity and natural gas consumption at the project site relative to existing conditions. However, the project would be located adjacent to the RWRF, which would supply a portion of the project's natural gas with conditioned gas produced from waste methane. Fuel consumption associated with stationary equipment would be reduced by using Best Performance Standards. The project would be constructed in accordance with the California Building Energy Efficiency Standards that are in effect at the time of construction. For these reasons, the project would not result in wasteful, inefficient, and unnecessary consumption of energy during construction or operation. This impact would be **less than significant**.

Appendix F of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient, and unnecessary" energy usage (Public Resources Code Section 21100(b)(3)). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with the 2016 California Building Energy Efficiency Standards would result in energy-efficient buildings compared with those built to previous iterations of the building standards. Through the federal CAFE standards and the state's Low Carbon Fuel Standards, fuel consumption would be reduced over the life of the project. However, compliance with building codes and vehicle/fuel standards does not adequately address all potential energy impacts during construction and operation.

Construction-Related Energy

Energy would be required to construct, operate, and maintain construction equipment and to produce and transport construction materials associated with the construction of the project. The one-time energy expenditure required to construct the physical buildings and infrastructure associated with the project would be nonrecoverable. Most energy consumption would result from operation of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks supplying materials.

An estimated total of 6.3 million gallons of gasoline and nearly 90,000 gallons of diesel would be consumed for construction of the project, as show in Table 4.13-1. The energy needs for this construction would be temporary. Construction contractors are financially motivated to complete construction projects in an efficient manner to meet project schedules and minimize cost. Thus, it would not be typical for fuel to be consumed in a wasteful manner during construction of the project. Use of construction equipment and associated energy consumption would be typical of that associated with construction of industrial projects in a rural setting elsewhere in California.

Table 4.13-1 Construction Energy Consumption

	Gasoline (Gallons)	Diesel (Gallons)
2019	3,295,502	48,447
2020	2,968,923	41,474
Total	6,264,426	89,921

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.

Source: Calculations by Ascent Environmental in 2018, see Appendix B.

Transportation Energy

Fuel use estimates were calculated from the combination of fuel consumption rates and fuel mix by vehicle class from CARB's EMFAC2017 model with overall VMT and mode share by vehicle class based on CalEEMod defaults for Fresno County. State and federal regulations regarding standards for vehicles in California are designed to reduce wasteful, unnecessary, and inefficient use of energy for transportation.

The estimated daily VMT of 6,379 miles generated by the project would consume 70,557 gallons of gasoline per year and 51,312 gallons of diesel per year, as shown in Table 4.13-2.

Table 4.13-2 Gasoline and Diesel Consumption in 2021

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger Vehicles	53,340	222
Trucks	17,217	51,091
Total	70,557	51,312

Notes: gal/year = gallons per year.

Source: Calculations by Ascent Environmental in 2018, see Appendix B.

Building Energy

Operation of the rendering facility would include electricity and natural gas usage from lighting, space and water heating, appliances, and landscape maintenance activities. Indirect energy use would include wastewater treatment and solid waste removal. The rendering facility would use waste methane generated at the RWRF to replace 18 percent of its demand for natural gas.

The facility would be constructed to meet the California Building Energy Efficiency Standards that are in effect at the time of construction. The project would also implement San Joaquin Valley Air Pollution Control District-recommended Best Performance Standards for stationary equipment. Therefore, this mitigation has a co-benefit of reducing energy demand once the project is operational. Operational energy consumption is summarized in Table 4.13-3.

Table 4.13-3 Operational Energy Consumption

Energy Type	Energy Consumption	Units
Electricity	4,350	MWh/year
Natural Gas	200,579	MCF/year
Renewable Natural Gas	44,029	MCF/year

Notes: MWh/year = megawatt hours per year; MCF/year = thousand cubic feet per year.

Source: Calculations by Ascent Environmental in 2018, see Appendix B.

Conclusion

Implementation of the project would result in a temporary increase in fuel consumption. However, it is anticipated that fuel would not typically be consumed in a wasteful manner during construction, as it is in the interest of construction contractors to meet project schedules and minimize costs through efficient energy use. Fuel consumption associated with vehicle trips generated by the project would not be considered inefficient, wasteful, or unnecessary in comparison to that associated with other, similar rural counties. The project would offset a portion of its natural gas demand through utilization of renewable natural gas generated by the RWRF, as well as implementing Best Performance Standards in stationary equipment. The project's energy consumption through construction, building operation, or transportation would not be considered wasteful, inefficient, or unnecessary. This impact would be **less than significant.**

Mitigation Measures

No mitigation is required for this impact.

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5 CUMULATIVE IMPACTS

5.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This Draft EIR provides an analysis of cumulative impacts of the proposed Fresno Rendering Plant Relocation and Expansion Project (project) taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the incremental contribution to any such cumulatively significant impacts by the project would be "cumulatively considerable" (and thus significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], Section 15064[h], and Section 15065[c]; and Communities for a Better Environment v. California Resources Agency [2002] 103 Cal. App. 4th 98, 120.) In other words, the required analysis intends first to create a broad context in which to assess cumulative impacts, viewed on a geographic scale beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable").

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "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" (State CEQA Guidelines Section 15355[b]).

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines provides, in part, the following:

> [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

For purposes of this Draft EIR, the project would have a significant cumulative effect if it meets either one of the following criteria:

- the cumulative effects of development without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- the cumulative effects of development without the project are already significant and the project contributes measurably to the effect.

The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person, or must exceed an established threshold of significance (defined throughout the resource sections in Chapter 4 of this Draft EIR).

5.2 CUMULATIVE SETTING

5.2.1 Geographic Scope

The geographic area that could be affected by the project and is appropriate for a cumulative impact analysis varies depending on the environmental resource topic, as presented in Table 5-1.

Table 5-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Aesthetics	Local (project vicinity)
Agricultural Resources	Fresno County
Air Quality	Regional (San Joaquin Valley Air Pollution Control District—pollutant emissions that have regional effects) Local (immediate vicinity—pollutant emissions that are highly localized)
Archaeological, Historical, and Tribal Cultural Resources	Local (project vicinity)
Biological Resources	Regional
Greenhouse Gas Emissions and Climate Change	Global
Hazards and Hazardous Materials	Local (immediate project vicinity)
Hydrology and Water Quality	Regional and local
Land Use and Planning	City of Fresno and Fresno County
Noise	Local (immediate project vicinity where effects are localized)
Transportation/Traffic	Regional and local
Energy	Local

Source: Data compiled by Ascent Environmental in 2018

5.2.2 Cumulative Impact Approach

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects (the "list approach") or the use of adopted projections from a general plan, other regional planning document, or certified EIR for such a planning document (the "plan approach").

Probable future projects are those in the project vicinity that have the possibility of interacting with the project to generate a cumulative impact and either:

1. are partially occupied or under construction,
2. have received final discretionary approvals,
3. have applications accepted as complete by local agencies and are currently undergoing environmental review, or
4. have been discussed publicly by an applicant or otherwise have become known to the lead agency, provided sufficient information is available about the project to allow at least a general analysis of environmental impacts and an evaluation of the likelihood of implementation.

No past, present, or probable future projects were identified in the project vicinity or that would have effects that would combine with the proposed project. Therefore, for this Draft EIR, the plan approach have been used to generate the most reliable future projections possible.

5.2.3 Planning Documents

FRESNO COUNTY GENERAL PLAN

The current *Fresno County General Plan* was adopted by the County on October 3, 2000. The County General Plan is a comprehensive, long-range framework for protection of the county's agricultural, natural, and cultural resources, and for development within the county. The planning horizon for the County General Plan is 2000 through 2020 and beyond. The vision of the General Plan incorporates the following themes: economic development, agricultural land protection, growth accommodation, urban-centered growth, efficient and functional land use patterns, service efficiency, recreational development, resource protection, health and safety protection, and enhanced quality of life (County of Fresno 2000).

CITY OF FRESNO GENERAL PLAN

The *Fresno General Plan* was adopted by the City on December 18, 2014. The General Plan provides a long-range vision for physical development of the city. The plan includes policies and implementation strategies for current community needs, neighborhood character, economic development challenges and opportunities, mixed-use and infill development strategies, development considerations outside the city limits, and fiscal resources through a 2035 planning horizon. The vision of the General Plan is to preserve the desirable qualities that make the city of Fresno an ideal place to live, work, and play (City of Fresno 2014a).

CITY OF FRESNO 2015 URBAN WATER MANAGEMENT PLAN

The City adopted the *2015 Urban Water Management Plan* (UWMP) on June 23, 2016. The UWMP was prepared in accordance with the Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Sections 10610–10656), and applies to urban water suppliers with 3,000 or more connections or supplying more than 3,000 acre-feet of water annually. The UWMP describes the City's water demands and supplies, reliability and water conservation strategies, and presents projects that comprise City's long-term water supply strategy (City of Fresno 2016).

5.3 ANALYSIS OF CUMULATIVE IMPACTS

The following sections contain a discussion of the cumulative effects anticipated from implementation of the Fresno Rendering Plant Relocation and Expansion Project, together with related projects and planned development in the county, for each of the environmental issue areas evaluated in this Draft EIR. The analysis conforms with Section 15130(b) of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

When considered in relation to other reasonably foreseeable projects, cumulative impacts to some resources would be significant and more severe than those caused by the proposed project alone.

For purposes of this Draft EIR, the project would result in a significant cumulative effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the Fresno Rendering Plant Relocation and Expansion Project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or

- the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the Fresno Rendering Plant Relocation and Expansion Project makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance.

This cumulative analysis assumes that all mitigation measures identified in Chapter 4 to mitigate project impacts are adopted and implemented, and all elements of the design build performance criteria that would minimize environmental effects are implemented. The analysis herein analyzes whether, after implementation of project-specific mitigation and performance criteria that minimize environmental effects, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects. Where the project would so contribute, additional mitigation is recommended where feasible.

5.3.1 Aesthetics

The project site is surrounded by farmland to the north, east, and south, and the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) to the west. Development of the project would substantially alter the visual character of the project site from primarily active farmland to industrial development. However, the visual character of the project site is not unique or distinctive relative to the visual character of the surrounding region, which is also dominated by farmland. In addition, there are no scenic vistas or scenic highways with views of the project site. As discussed in Impact 4.2-1, the project would include landscaping as well as large sections of undeveloped areas, which would soften the industrial character of the project.

The project facilities include exterior nighttime lighting, including parking lot lighting, used during nighttime operation. Although the adjacent RWRF as well as scattered rural residences are existing sources of nighttime lighting, the addition of nighttime lighting from the project could result in skyglow and light pollution if lights is are cast in an upward direction. This would be a potentially significant impact. Implementation Mitigation Measure 4.2-2, Prepare a Lighting Plan, would require the applicant to prepare a detailed lighting plan that demonstrates that all exterior lighting is directed downward and includes full shielding to minimize the project's contribution to light pollution and skyglow impacts. With implementation of mitigation, the project would not result in a substantial increase in light and glare. Therefore, the project's overall contribution to cumulative visual impacts **would not be cumulatively considerable**.

5.3.2 Agricultural Resources

Development in Fresno county along with implementation of the City of Fresno General Plan and the Fresno County General Plan would result in the continued loss of farmland in the region. The City of Fresno General Plan Master Environmental Impact Report (MEIR) identified that implementation of General Plan planned land uses would result in the loss of up to 15,903 acres of FMMP-designated farmland (City of Fresno 2014b:5.2-12). This cumulative impact would be significant.

Although the site is not zoned for agriculture and is not under Williamson Act Contract, it is designated as Prime Farmland and Farmland of Statewide Importance and is currently in agricultural production. The relocation of the rendering plant to the project site would result in permanent conversion of Important Farmland. Therefore, the project **would result in a considerable contribution to the overall significant cumulative effect** on conversion of agricultural lands.

5.3.3 Air Quality

Construction and operation of the project would result in emissions of criteria air pollutants (e.g., particulate matter with an aerodynamic diameter of 10 microns of less [PM_{10}] and with an aerodynamic diameter of 2.5 microns or less [$PM_{2.5}$]) and precursors (e.g., oxides of nitrogen [NO_X] and reactive organic gases [ROG]) in Fresno County, within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Fresno County is currently in

nonattainment for ozone and $PM_{2.5}$ with respect to the National Ambient Air Quality Standards (NAAQS) and for ozone, PM_{10}, and $PM_{2.5}$ with respect to the California Ambient Air Quality Standards (CAAQS).

Ozone impacts are the result of cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is formed in chemical reactions involving NO_X, ROG, and sunlight. Only the largest individual sources emit NO_X and ROG in amounts that could have a measurable effect on ambient ozone concentrations by themselves. However, when all sources throughout the region are combined, they can result in severe ozone problems. Because the region is in nonattainment for either CAAQS or NAAQS for ozone precursors (i.e., NO_X and ROG), and criteria air pollutants (PM_{10} and $PM_{2.5}$), emissions from cumulative development are considered to be cumulatively considerable.

CEQA-related air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health.

In consideration of new and more stringent NAAQS and CAAQS adopted since 2000, SJVAPCD identified numerical thresholds for construction and operational emissions of criteria air pollutants and precursors that would determine whether a project's discrete emissions would result in a cumulative, regional contribution (i.e., significant) to the baseline nonattainment status of the SJVAPCD. In developing thresholds of significance for individual project emissions, SJVAPCD analyzed emissions values against the SJVAPCD's Offset thresholds to ozone precursors, which, when applied, which prevent further deterioration of ambient air quality within the SJVAB. Thresholds for PM_{10} and $PM_{2.5}$ were adapted from the SJVAPCD's PM_{10} New Source Review offset thresholds (SJVAPCD 2015:82). Using these parameters, SJVAPCD has developed quantitative thresholds of significance for project-level CEQA evaluation that may be used to determine the extent to which a project's emissions of criteria air pollutants and precursors would contribute to the regional degradation of ambient air quality within the SJVAB.

The emissions level of ROG and NO_X do not exceed the SJVAPCD-recommended thresholds of significance and would not contribute to an increase in nonattainment days in the SJVAB for ozone. By evaluating ROG and NO_X emissions against SJVAPCD's thresholds of significance, it is not foreseeable that the health complications associated with ozone exposure would be exacerbated by project-generated construction emissions. Therefore, the short-term contribution of criteria air pollutants and precursors from project construction, combined with other cumulative sources of ozone precursors in the region would not be cumulatively considerable.

Long-term operation of the project would result in regional emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ from area, energy, and mobile sources. Area-source emissions include those from the combustion of natural gas. Energy-source emissions include those from the consumption of electricity. Mobile-source emissions, for the purpose of this analysis, include the vehicle miles travelled (VMT) associated with the net increase in employees from project operation. VMT estimates were derived from data generated in the traffic impact analysis conducted for the project. (See Section 4.12, "Transportation/Traffic," and the discussion of cumulative transportation impacts). Long-term operation-related emissions generated by the project would not exceed SJVAPCD's significance thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$. Project-generated emissions would not violate or contribute substantially to an existing or projected air quality violation such that adverse health impacts would occur or conflict with air quality planning efforts of the SJVAPCD. Therefore, the project's contribution to operational criteria air pollutants and precursors would not contribute to the exceedance of the NAAQS or CAAQS in the SJVAPCD nor result in greater acute or chronic health impacts compared to existing conditions.

Consequently, long-term operation of the proposed project would not contribute to an increase in regional emissions of ROG, NO_X, PM_{10}, or $PM_{2.5}$ that would conflict with adopted air quality plans, and therefore would not be cumulatively considerable.

Local carbon monoxide (CO) impacts typically relate to severe traffic congestion. Under Cumulative-Plus-Project conditions, all intersections would continue to operate at level of service (LOS) D or better overall. The project would not result in the degradation of a street or intersection to LOS E or F nor contribute to a street or intersection already operating at LOS F (the screening criteria for determining significance by SVJAPCD). Therefore, 1- and 8-hour CO concentrations for the future cumulative conditions would not be anticipated to exceed the significance thresholds of

20.0 and 9.0 parts per million, respectively. Consequently, the project would not result in cumulatively considerable incremental contribution such that a significant cumulative impact related to CO concentrations would occur.

Operation of the project would result in a new natural gas-powered boiler and operation of diesel delivery trucks. Levels of TACs from project-related construction would not result in a substantial increase in health risk exposure at offsite sensitive receptors, increases in cancer risk that are greater than 20 in 1 million, or a hazard index greater than one, however, operation of the new boiler could result in a substantial increase in health risk exposure at offsite sensitive receptors. Implementation of Mitigation Measure 4.4-4 would reduce TAC emissions associated with boiler use by 76 percent. Results from the SJVAPCD Prioritization Calculator indicated a maximum prioritization score of between 4 and 8 for receptor located between 1,640 feet and 3,280 feet. Therefore, with implementation of mitigation, this project would not exceed SJVAPCD's prioritization score of 10 and would not expose nearby sensitive receptors to substantial levels of pollutants. Consequently, the project would not result in cumulatively considerable incremental contribution such that a significant cumulative impact related to TACs would occur.

Implementing the project would result in the generation of odor emissions from the various stages of raw material handling and processing operations that could affect nearby residences. These odor emissions could combine with odor emissions from other sources in the area, including the RWRF and nearby agricultural operations. However, the project would be required to comply with SJVAPCD permit requirements, which include odor control. The project would also implement Mitigation Measure 4.4-5, which requires an odor control plan to minimize the potential for a substantial odor increase at residences within 1 mile of the project site. This would prevent the project from generating a level of odor emissions that would contribute to a substantial cumulative odor effect. Therefore, the project would not result in a considerable contribution to cumulative air quality impacts.

5.3.4 Archaeological, Historical, and Tribal Cultural Resources

The geographic scope for the analysis of cumulative impacts to archaeological resources and human remains is the historic lands of the Yokuts. Most of the San Joaquin Valley and the foothills of the western slope of the Sierra Nevada were occupied by 40 or so groups classified together as the Yokuts. The geographic scope for the analysis of cumulative impacts to paleontological resources is the central San Joaquin Basin.

Because all significant cultural and paleontological resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological or paleontological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the system of which they are a part. Cultural and paleontological systems are represented by the total inventory of all sites and other remains in the region. As a result, a meaningful approach to preserving and managing cultural and paleontological resources must focus on the likely distribution of resources, rather than on a single project or parcel boundary.

The historic lands of the Yokuts have been affected by development since Spanish explorer Gabriel Moraga crossed Yokut territory in 1808. The discovery of gold at Sutter's Mill in Coloma in 1848 was the catalyst that caused a dramatic alteration of Native American cultural patterns as a flood of Euro-Americans entered the region. In 1854, gold was discovered in the upper reaches of the Kern River, which brought a tremendous influx of miners into eastern Kern County. When the Gold Rush was over, many of the miners settled in the Central Valley communities and established farms, ranches, and lumber mills. These activities have resulted in an existing significant adverse effect on archaeological resources and human remains. Paleontological resources in the central San Joaquin Basin have similarly been affected by development. Cumulative development continues to contribute to the disturbance of cultural and paleontological resources.

No known unique archaeological resources, human remains, or paleontological resources are located within the boundaries of the project site; nonetheless, project-related earth-disturbing activities could damage undiscovered resources. The proposed project, in combination with other development in the region, could contribute to ongoing substantial adverse changes in the significance of cultural and paleontological resources resulting from urban

development and conversion of natural lands. Cumulative development could result in potentially significant archaeological and paleontological resource impacts.

Implementation of Mitigation Measures 4.5-1a and 4.5-1b would ensure that the proposed project's contribution to cumulatively significant archeological resource impacts would not be considerable by requiring an archaeological survey prior to ground-disturbing activities and requiring construction work to cease in the event of an accidental find, in accordance with pertinent laws and regulations. With implementation of this mitigation measure, the proposed project's contribution to these impacts would be offset. Mitigation Measure 4.5-4 requires worker awareness training and construction monitoring, if needed, and the appropriate handling, recording, and curation of any significant paleontological resources discovered. Therefore, the proposed project **would not result in a considerable contribution** to a significant cumulative impact related to archaeological resources, human remains, or paleontological resources.

5.3.5 Biological Resources

Past development in the vicinity of the project, ranging from conversion of land to agricultural production more than a century ago to more recent expansion of urban development in the City of Fresno, has resulted in a substantial loss of native habitat to other uses. This land conversion has benefited a few species, such as those adapted to agricultural uses, but the overall effect on native plants, animals, and habitat has been adverse. Although future projects proposed in the City and surrounding unincorporated areas of Fresno County would be required to mitigate significant impacts on biological resources in compliance with CEQA, the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and other state, local, and federal statutes, many types of habitats and species are provided no protection. Therefore, it can be expected that the net loss of native habitat for plants and wildlife, agricultural lands, and open space areas that support important biological resources in the region will continue.

The MEIR for the General Plan and Development Code Update (City of Fresno 2014b, Impacts BIO-1 through BIO-4) indicates that, though future urban growth is expected in the City of Fresno, various General Plan policies will be implemented to protect, preserve, and mitigate sensitive biological resources, and that implementation of these policies will reduce impacts to these resources to a less-than-significant level.

Implementation of the project would result in potentially significant impacts to three special-status species: burrowing owl, Swainson's hawk, and California horned lark as described in Impacts 4.6-1, 4.6-2, and 4.6-3. Implementation of mitigation measures in Section 4.6, "Biological Resources," would require measures that would reduce or avoid the project's impacts. With implementation of mitigation, biological resource impacts of the project would either be entirely avoided or reduced to such an extent that they **would not result in a considerable contribution** to any cumulative biological resource impacts.

5.3.6 Greenhouse Gas Emissions and Climate Change

Greenhouse gas (GHG) emissions generated by project construction and operation, discussed under Impact 4.7-1 of this Draft EIR, are inherently cumulative. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions. The project would result in GHG emissions from construction activities including exhaust from worker commute trips, materials delivery, and the use of heavy-duty construction equipment that would result in a total of 619 $MTCO_2e$. The project would result in increases in energy consumption and vehicle trips that would result in approximately 12,800 $MTCO_2e$/year. However, this amount of GHG emissions is below the Cap-and-Trade limit of 25,000 MTCO2e/year. Additionally, the project would implement San Joaquin Valley Air Pollution Control District-recommended BPS for stationary sources which would result in additional GHG emission reductions Thus, the project **would not result in a considerable contribution** to a significant cumulative GHG impact.

5.3.7 Hazards and Hazardous Materials

The project's public health hazard impacts related to the use, handling, and transportation of hazardous materials and contamination, are associated with site-specific issues that would not combine with other hazards to create a cumulative impact in the region.

As discussed in Impact 4.8-2, no existing hazards were identified on the project site. However, because of the agricultural use of the site, residue from pesticides, fertilizers, and other agricultural chemicals may be present and the project could expose individuals coming into contact with the soil, such as construction workers, to increased health risk. Implementation of Mitigation Measure 4.8-2, Prepare Environmental Site Assessment, would require the project applicant to hire a qualified environmental professional to conduct a Phase I environmental site assessment prior to ground-disturbing activity. Implementation of this mitigation would reduce potential impacts associated with exposure to on-site hazardous materials by requiring the project applicant to appropriately identify and remediate any on-site soil contamination. As a result, the project **would not result in a considerable contribution** to a cumulative impact related to hazards.

5.3.8 Hydrology and Water Quality

Previous, on-going, and future development in the City of Fresno and Fresno County have contributed to additional demands on groundwater resources that may further drawdown groundwater elevations and available water supply, surface and groundwater water quality impacts, and regional increases in peak drainage flows from increased impervious surfaces. This cumulative impact would be significant under no-project conditions.

WATER QUALITY

As identified in Impact 4.9-1, all earth disturbing activities during construction would be subject to National Pollutant Discharge Elimination System (NPDES) permit program which would require the project to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). The NPDES Construction General Permit identifies limits on discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not hurt water quality or people's health. Compliance with these provisions, including preparation of a stormwater pollution prevention plan (SWPPP) and implementation of best management practices (BMPs), the construction impacts associated with water quality and waste discharge requirements would be minimized.

Development of the project would add 10 acres of new impervious surface to the project site and during operation, the project has the potential to generate polluted runoff. However, in compliance with local regulations the project would be required to manage stormwater quality through a SWPPP and implementation of BMPs. Therefore, the project's contribution to cumulative water quality impacts **would not be cumulatively considerable.**

GROUNDWATER RESOURCES

Water supply for future development of the project site would be supplied from a new well located near the northwestern corner of the project site. The existing rendering plant is primarily served by groundwater under current conditions and would be moved from an area in overdraft to an area of recharge created by the presence of treated effluent from the RWRF. In addition, the proposed facility would result in a small increase (6.5 percent) in water demand and would use non-potable recycled water on an as-needed basis. A groundwater management plan that will address cumulative groundwater conditions within the Kings Subbasin is currently being developed; however, it is not yet available.

The project site is in an area with substantial agricultural land and little impervious coverage. Implementation of the project would add approximately 10 total acres of impervious surface to the site, and would leave the remaining approximately 10 acres of the project site without impervious surface, including landscape areas and grassy areas that would allow stormwater filtration. The Kings River Subbasin is 1,530 square miles; therefore, the addition of 10 acres of impervious surfaces would not substantially impede groundwater recharge. The project would not substantially deplete groundwater supplies, and the project's contribution to potential groundwater use under cumulative conditions would not be cumulatively considerable.

DRAINAGE

As identified in Impact 4.9-3, future development of the project site would increase the quantity of impervious surfaces, which could alter the drainage pattern, or increase the rate or amount of surface runoff. Compliance with the City's grading plan check process would require that the development project drains properly. However, because the project would not drain into a municipal storm drain system, and no such system exists in the vicinity of the project site, increased stormwater rate and volume could cause increased potential for localized flooding if stormwater is not appropriately handled. Implementation of Mitigation Measure 4.9-3, "Prepare On-Site Drainage Plan," would require the applicant to prepare an on-site drainage plan that identifies on-site stormwater quality and any needed storage features, such as (but not limited to) bioswales, bioretention facilities, and detention facilities. After implementation of mitigation, peak stormwater runoff rates (flowing off the site) would be reduced to a rate consistent with City and County standards and be designed to minimize siltation in stormwater leaving the site. Therefore, the project's contribution to cumulative drainage impacts would not be cumulatively considerable.

5.3.9 Land Use and Planning

As discussed in Impact 4.10-1, the proposed project requires a General Plan Amendment (GPA), Rezone, and conditional use permit (CUP). The proposed amendment would change the land use designation to Heavy Industrial, rezone the property to Industrial-Heavy (IH), and the CUP would authorize the operation of intensive industrial land uses within the IH zoning district. Upon approval of these entitlements by the City, the project would be consistent with the *City of Fresno General Plan* and Title 15 Citywide Development Code. Therefore, the projects contribution to land use consistency impacts would not be cumulatively considerable.

5.3.10 Noise

Short-Term Construction-Generated Noise

Cumulative impacts from construction-generated noise could result if other future planned construction activities were to take place near the project and cumulatively combine with construction noise from the project. However, as described above, no past, present, or probable future projects were identified in the project vicinity or that would result in construction noise that would combine with the proposed project.

Construction activities associated with the project would be short-term and would not include blasting or pile driving. As described under Impact 4.11-1 in Section 4.11, "Noise," construction noise from the project would not result in the exposure of persons to or generation of noise levels in excess of applicable standards. Therefore, because construction activities would be limited to the project site, construction-generated noise would not combine with any other proposed construction activities within the project vicinity nor result in a substantial contribution such that a new significant cumulative construction noise impact would result.

Long-Term Ambient Noise Levels

As discussed under Impact 4.11-2 in Section 4.11, "Noise," impacts associated with the operation of rendering plant would be mitigated to a less-than-significant level. Given the relative quiet of the surrounding rural agricultural area,

implementation of the project would not combine with other noise sources to result in substantial long-term increases in noise. As such, noise generated from project operation **would not be cumulatively considerable**.

5.3.11 Transportation/Traffic

TRAFFIC FORECASTS AND PLANNED IMPROVEMENTS

The cumulative traffic volume forecasts were developed using the modified version of the Fresno Council of Governments (COG) regional travel demand forecasting (TDF) model developed for the City of Fresno General Plan Update. Model adjustments account for the difference between the existing counts (conducted in 2017) and the base year model forecasts. Additional adjustments were made to account for General Plan projects in the study area that could result in changes to travel patterns. In the study area, the General Plan includes widening Jensen Avenue east of Marks Avenue from two to four lanes and widening Marks Avenue from two to four lanes north of Jensen Avenue. Additionally, it was assumed that the installation of traffic signal control at the intersections of Jensen Avenue/Marks Avenue and Jensen Avenue/West Avenue, planned and funded through the City of Fresno City-Wide Traffic Signal Mitigation Impact Fee program, would be constructed under the Cumulative scenario. No additional improvements at study intersections were assumed for the Cumulative and Cumulative Plus Project operations analysis.

Cumulative Traffic Volumes

Cumulative traffic volumes account for the forecasted trips associated with the adjusted Fresno COG TDF model. Cumulative Plus Project traffic volumes were estimated by adding project generated traffic to the adjusted cumulative traffic volumes. Project traffic was added to roadway intersections and segments consistent with the trip generation and distribution described in Section 4.12, "Transportation/Traffic."

CUMULATIVE IMPACTS TO INTERSECTION OPERATIONS

Table 5-2 shows the resulting a.m. and p.m. peak-hour intersection level of service (LOS) and delay under Cumulative and Cumulative Plus Project conditions.

Table 5-2 Intersection Operations – Cumulative and Cumulative Plus Project Conditions

Intersection	Traffic Control	LOS Threshold	Peak Hour	Cumulative Conditions		Cumulative Plus Project Conditions	
				LOS	Delay[1]	LOS	Delay[1]
1. Jensen Avenue and Cornelia Avenue	SSSC	C	a.m.	A (C)	7 (23)	A (C)	8 (27)
			p.m.	**A (F)**	**10 (61)**	**A (F)**	**12 (71)**
2. Jensen Avenue and Brawley Avenue	SSSC	C	a.m.	A (C)	5 (21)	A (C)	5 (23)
			p.m.	**A (E)**	**7 (46)**	**A (F)**	**7 (52)**
3. Jensen Avenue and Marks Avenue	Signal	C/D	a.m.	C	33	C	33
			p.m.	C	26	C	27
4. Jensen Avenue and West Avenue	Signal	D	a.m.	C	24	C	24
			p.m.	C	28	C	28

Notes: SSSC = side-street-stop-controlled; LOS = level of service; **Bold** indicates unacceptable conditions.

[1] Delay is represented in seconds. For SSSC intersections, the delay and LOS for the most delayed individual movement is shown in parenthesis next to the average intersection delay and LOS.

Source: Fehr & Peers 2019:22

As shown in Table 5-2 the study intersections of Jensen Avenue/Cornelia Avenue and Jensen Avenue/Brawley Avenue are forecast to operate at unacceptable levels (LOS E or F) during the p.m. peak-hour under Cumulative and Cumulative Plus Project conditions. Furthermore, the addition of project generated trips would result in an increase in average delay of more than 5 seconds for individual movements at these unsignalized study intersections currently operating at an unacceptable level. Thus, the addition of project-related traffic to these unsignalized intersections that are forecasted to operate at unacceptable levels under cumulative conditions would result in a **cumulatively considerable significant impact**.

Mitigation 5-1a: Jensen Avenue and Cornelia Avenue

Under Cumulative and Cumulative Plus Project conditions, the intersection of Jensen Avenue and Cornelia Avenue would operate at an unacceptable level (LOS F) during the p.m. peak-hour. As detailed in the *Fresno Rendering Plan Relocation Transportation Impact Analysis (Transportation Study)* (Appendix D), the following intersection improvements are recommended at the intersection of Jensen Avenue and Cornelia Avenue:

- Install all-way stop control
- Reconfigure the northbound, southbound, and eastbound approaches to shared left/through/right-turn lanes
- Reconfigure the westbound approach to include a shared left/through lane and separate right-turn lane

At the discretion of the City of Fresno, fair share payment could occur in the form of payment of traffic impact fees, an ad-hoc fee payment, or construction of the improvement with reimbursement or fee credits.

Mitigation 5-1b: Jensen Avenue and Brawley Avenue

Under Cumulative and Cumulative Plus Project conditions the intersection of Jensen Avenue and Brawley Avenue would operate at an unacceptable level (LOS E or F) during the p.m. peak-hour. As detailed in the Transportation Study, the following intersection improvements are recommended at the intersection of Jensen Avenue and Brawley Avenue:

- Install all-way stop control

At the discretion of the City of Fresno, fair share payment could occur in the form of payment of traffic impact fees, an ad-hoc fee payment, or construction of the improvement with reimbursement or fee credits.

Significance after Mitigation

As shown in Table 5-3, the construction of the improvements identified in Mitigation Measures 5-1a and 5-1b would result in the intersections of Jensen Avenue/Cornelia Avenue and Jensen Avenue/Brawley Avenue operating at acceptable levels.

Implementation of these mitigation measures would result in fair share payment toward improvements that would reduce the impact at these intersections to a less-than-significant level. However, because these intersections have not been identified for any planned or programmed future improvements and because these intersections are outside of the City of Fresno's jurisdictional control, it cannot be guaranteed that these improvements would be implemented. Therefore, the project **would have a potentially substantial contribution to a significant cumulative impact**.

Table 5-3 Intersection Operations –Cumulative Plus Project Conditions (Mitigated)

Intersection	LOS Threshold	Peak Hour	Cumulative Plus Project Conditions		Cumulative Plus Project Conditions (Mitigated) [2]	
			LOS	Delay[1]	LOS	Delay[1]
1. Jensen Avenue and Cornelia Avenue[2]	C	a.m.	A (C)	8 (27)	B	14
		p.m.	**A (F)**	**12 (71)**	C	18
2. Jensen Avenue and Brawley Avenue[3]	C	a.m.	A (C)	5 (23)	B	14
		p.m.	**A (F)**	**7 (52)**	C	24

Notes: LOS = level of service; **Bold** indicates unacceptable conditions.

[1] Delay is represented in seconds. For SSSC intersections, the delay and LOS for the most delayed individual movement is shown in parenthesis next to the average intersection delay and LOS.

[2] Mitigation consists of installation of all-way stop control, reconfiguration of the northbound, southbound, and eastbound approaches to shared left/through/right-turn lanes, and reconfiguration of the westbound approach to include a shared left/through lane and separate right-turn lane.

[3] Mitigation consists of installation of all-way stop control.

Source: Fehr & Peers 2019:25

CUMULATIVE IMPACTS TO ROADWAY SEGMENT OPERATIONS

Table 5-4 shows the resulting a.m. and p.m. peak-hour roadway segment traffic volumes, volume-to-capacity ratio, and LOS under Cumulative and Cumulative Plus Project conditions.

As shown in Table 5-4, all study roadway segments would operate at LOS D or better during the a.m. and p.m. peak-hours. The three Jensen Avenue roadway segments from the project access to Marks Avenue, and all of the Marks Avenue study segments will operate at unacceptable levels in the Cumulative and Cumulative Plus Project scenarios. However, the addition of project trips to these roadway segments will not cause the V/C ratio to increase by more than 0.05. Therefore, the addition of project-related traffic to the forecasted Cumulative scenario would not result in an impact to roadway segment operations. Thus, the project would not result in a considerable contribution to a significant cumulative impact.

Table 5-4 Roadway Segment Operations – Cumulative Conditions

Segment	Between	LOS Threshold	Lanes	Peak-Hour	Cumulative Conditions			Cumulative Plus Project Conditions		
					Volume	V/C	LOS	Volume	V/C	LOS
Jensen Avenue	Project Access to Cornelia Avenue	C	2	a.m.	460	0.31	D	490	0.33	D
				p.m.	660	0.45	D	680	0.46	D
	Cornelia Avenue to Brawley Avenue	C	2	a.m.	580	0.39	D	630	0.43	D
				p.m.	980	0.66	D	1,020	0.69	D
	Brawley Avenue to Marks Avenue	C	2	a.m.	670	0.45	D	730	0.49	D
				p.m.	950	0.64	D	990	0.67	D
	Marks Avenue to West Avenue	D	4	a.m.	1,800	0.48	D	1,850	0.50	D
				p.m.	1,990	0.53	D	2,030	0.54	D
	West Avenue to Fruit Avenue	D	4	a.m.	1,620	0.43	D	1,670	0.45	D
				p.m.	1,900	0.51	D	1,940	0.52	D

Table 5-4 Roadway Segment Operations – Cumulative Conditions

Segment	Between	LOS Threshold	Lanes	Peak-Hour	Cumulative Conditions			Cumulative Plus Project Conditions		
					Volume	V/C	LOS	Volume	V/C	LOS
Cornelia Avenue	Church Avenue to Jensen Avenue	C	2	a.m.	170	0.11	C	170	0.11	C
				p.m.	340	0.23	C	340	0.23	C
	Jensen Avenue to North Avenue	C	2	a.m.	90	0.06	C	110	0.07	C
				p.m.	190	0.13	C	200	0.14	C
Brawley Avenue	Church Avenue to Jensen Avenue	C	2	a.m.	150	0.10	C	150	0.10	C
				p.m.	260	0.18	C	260	0.18	C
	Jensen Avenue to North Avenue	C	2	a.m.	80	0.05	C	80	0.05	C
				p.m.	60	0.04	C	60	0.04	C
Marks Avenue	Church Avenue to Jensen Avenue	C/D	4	a.m.	1,070	0.29	D	1,070	0.29	D
				p.m.	1,150	0.31	D	1,150	0.31	D
	Jensen Avenue to North Avenue	C/D	2	a.m.	620	0.42	D	620	0.42	D
				p.m.	730	0.49	D	730	0.49	D
West Avenue	Church Avenue to Jensen Avenue	D	2	a.m.	430	0.29	D	430	0.29	D
				p.m.	580	0.39	D	580	0.39	D
	Jensen Avenue to North Avenue	D	2	a.m.	500	0.34	D	500	0.34	D
				p.m.	600	0.41	D	600	0.41	D

Notes: V/C = volume-to-capacity ratio; LOS = level of service

Source: Fehr & Peers 2019:22

5.3.12 Energy

Implementation of the project would result in an increase in demand for energy; however, the project would offset a portion of its natural gas demand through utilization of renewable natural gas generated by the RWRF and implementing Best Performance Standards. Construction energy use associated with construction of the proposed project would also not be considered inefficient, wasteful, or unnecessary, because the energy needs for the project construction would be temporary and are not anticipated to require additional capacity or substantially increase peak or base period demands for electricity and other forms of energy. Construction equipment use and associated energy consumption would be typical of those associated with industrial projects in a rural setting. Transportation energy use associated with operation of the proposed project would also not be considered inefficient, wasteful, or unnecessary in comparison to that associated with other, similar rural counties.

Similar to the proposed project, other facilities in the area would be required to comply with code and state policy design measure to reduce energy consumption. In addition, planned growth in the area would undergo separate environmental review to ensure that their energy use would not be inefficient, wasteful, or unnecessary. For these reasons, significant cumulative impacts related to energy efficiency would not occur from implementation of the related projects. The project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to inefficient use of energy.

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6 ALTERNATIVES

6.1 INTRODUCTION

The California Code of Regulations (CCR) Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe "… a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that the EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project …"), CCR Section 15126.6(f) (1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body, here the City of Fresno. (See PRC Sections 21081.5, 21081[a] [3].)

6.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

6.2.1 Attainment of Project Objectives

The Fresno Rendering Plant Relocation Project would relocate the Darling facility from its current location on Belgravia Ave to the new 20-acre site near the RWRF and expand its current permitted processing limits from 850,000 pounds per day to a permitted maximum of 10 million pounds per week. The existing facility was constructed and began operation in 1956 as a slaughterhouse and beef packing company, with limited rendering (i.e., processing of animal products for reuse) operations. Rendering gradually expanded, packing operations phased out and the rendering plant site was annexed to the city in 1971. Over the last 60 years, non-industrial urban uses were developed in the surrounding area such that residential neighborhoods are now within 0.25-mile of the rendering plant, with homes as close as 800 feet from the rendering plant structures. The existing Darling facility is a food processing byproduct conversion operation that collects and processes raw material (primarily beef fat, bone, and offal) into proteins and fats that can be beneficially used as ingredients in food, fertilizer, feed, and fuel. The conversion process has the potential to generate odor which is managed through an odor abatement system. The City is considering the relocation of this heavy industrial facility away from the residential neighborhoods that have been developed near the existing facility subsequent to its establishment.

6.2.2 Environmental Impacts of the Fresno Rendering Plant Relocation and Expansion Project

Sections 4.2 through 4.13 of this Draft EIR address the environmental impacts of implementation of the proposed Fresno Rendering Plant Relocation and Expansion Project. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant, and potentially significant, adverse impacts of the project, as identified in Chapter 4 of this Draft EIR and summarized below. If an environmental issue area analyzed in this Draft EIR is not addressed below, it is because no significant impacts were identified for that issue area. The Draft EIR identified the significant environmental effects of the project in the following areas below. Mitigation measures have been identified to address these impacts, where feasible.

- Aesthetics:
  - The project would include nighttime lighting that could result in skyglow and light pollution. Mitigation Measure 4.2-2 (prepare a lighting plan) is included to reduce this impact to a less-than-significant level (Impact 4.2-2).
- Agricultural Resources:
  - The project would convert Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. Mitigation Measure 4.3-1 (farmland preservation) is included to reduce this impact. However, once farmland is removed through development, it is irretrievably lost to future generations. Therefore, the impact would remain significant and unavoidable (Impact 4.3-1).
- Air Quality:
  - Operation of the project would result in a new natural gas-powered boiler and operation of diesel delivery trucks. Levels of TACs from project-related construction would not result in a substantial increase in health risk exposure at offsite sensitive receptors, increases in cancer risk that are greater than 20 in 1 million, or a hazard index greater than one, however, operation of the new boiler could result in a substantial increase in health risk exposure at offsite sensitive receptors. Mitigation Measure 4.4-4 (apply best available control technology for new stationary sources) is included to reduce this impact to a less-than-significant level (Impact 4.4-4).

- The project would introduce new odor sources into the area from various stages of raw material handling and processing operations associated with the rendering facility. In accordance with SJVAPCD permitting requirements, stationary sources are required to maintain and implement odor control technologies. Mitigation Measure 4.4-5 (prepare an odor management plan) is included to reduce this impact to a less-than-significant level (Impact 4.4-5).

- Archaeological, Historical, and Tribal Cultural Resources:
  - Proposed project-related ground-disturbing activities could result in discovery or damage of undiscovered subsurface unique archaeological resources. Mitigation Measures 4.5-1a (conduct archaeological survey) and 4.5-1b (halt ground-disturbing activity upon discovery of subsurface archaeological features) are included to reduce this impact to a less-than-significant level (Impact 4.5-1).
  - Ground disturbance associated with the project could uncover previously undiscovered paleontological resources. Mitigation Measure 4.5-4: (worker training, paleontological survey, and construction monitoring) is included to reduce this impact to a less-than-significant level (Impact 4.5-4).
- Biological Resources:
  - Ground disturbance during project construction, including grading and excavating, could result in disturbance or direct loss of burrowing owl, if present. Mitigation Measure 4.6-1 (protection of burrowing owl) is included to reduce this impact to a less-than-significant level (Impact 4.6-1).
  - Project implementation could result in indirect disturbance of nesting Swainson's hawks potentially resulting in nest abandonment if nests are present within the trees along West Jensen Avenue. Mitigation Measure 4.6-2 (protection of nesting Swainson's hawk) is included to reduce this impact to a less-than-significant level (Impact 4.6-2).
  - Project implementation could result in disturbance of nesting California horned lark or direct loss of nests, if present on the project site. Mitigation Measure 4.6-3 (protection of nesting California horned lark) is included to reduce this impact to a less-than-significant level (Impact 4.6-3).
- Hazards and Hazardous Materials:
  - Construction activities that disturb subsurface materials could encounter previously unidentified contamination from historic agricultural use of the site. Encountering these hazardous materials could expose workers, the public, or the environment to adverse effects depending on the volume, materials involved, and concentrations. Mitigation Measure 4.8-2 (prepare Environmental Site Assessment) is included to reduce this impact to a less-than-significant level (Impact 4.8-2).
- Hydrology and Water Quality:
  - Because the project would not drain into a municipal storm drain system, increased stormwater rate and volume could cause increased potential for localized flooding. Mitigation Measure 4.9-3 (prepare on-site drainage plan) is included to reduce this impact to a less-than-significant level (Impact 4.9-3).
- Noise:
  - Project-generated operational, non-transportation noise levels in exceedance of the County's daytime and nighttime noise levels standards. Mitigation Measure 4.11-3 (prepare a noise minimization plan) is included to reduce this impact to a less-than-significant level (Impact 4.11-3).
- Cumulative Impacts to Intersection Operations:
  - The study intersections of Jensen Avenue/Cornelia Avenue and Jensen Avenue/Brawley Avenue are forecast to operate at unacceptable levels (LOS E or F) during the p.m. peak-hour under Cumulative and Cumulative Plus Project conditions. Furthermore, the addition of project generated trips would result in an increase in average delay of more than 5 seconds for individual movements at these unsignalized study intersections currently operating at an unacceptable level. Mitigation Measures 5-1a (Jensen Avenue and Cornelia Avenue)

and 5-1b (Jensen Avenue and Brawley Avenue) are included to reduce this impact. However, because these intersections have not been identified for any planned or programmed future improvements and these intersections are outside of the City of Fresno's jurisdictional control, it cannot be guaranteed that these improvements would be implemented. Therefore, the project **would have a potentially substantial contribution to a significant cumulative impact.**

6.3 ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

As described above, State CEQA Guidelines Section 15126.6(c) provides that the range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project, and could avoid or substantially lessen one or more of the significant effects. Alternatives that fail to meet the fundamental project purpose need not be addressed in detail in an EIR. (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal. App. 4th 1143, 1165-1167.)

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision-maker(s). (See Pub. Resources Code, Section 21081[a][3].) At the time of action on the project, the decision-maker(s) may consider evidence beyond that found in this EIR in addressing such determinations. The decision-maker(s), for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint, and may reject an alternative on that basis provided that the decision-maker(s) adopts a finding, supported by substantial evidence, to that effect, and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal. App.4th 957, 998.)

The EIR should also identify any alternatives that were considered by the lead agency, but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination. The following alternative was considered by the City but are not evaluated further in this Draft EIR.

6.3.1 W. Jensen Avenue Alternative

Relocation and expansion of the Fresno Rendering Plant to a site immediately south of W. Jensen Avenue and immediately north of the proposed project site was evaluated previously in an Initial Study/Mitigated Negative Declaration (IS/MND). This alternative would be identical to the proposed project, but would be located on a different project site immediate to the north. This alternative would attain the basic objectives of the project; however, it would not avoid any potentially significant impacts associated with the proposed project because the project would be identical, and the site would be very similar to the project site. The IS/MND identified potentially significant impacts related to aesthetics, air quality, biological resources, cultural resources, GHGs, hazards and hazardous materials, hydrology and water quality, noise, and traffic associated with this alternative. The IS/MND identified potential impacts to Important Farmland as less than significant compared to the project, which would have a significant and unavoidable impact on Important Farmland. However, the alternative site is also designated as Prime Farmland and Farmland of Statewide Importance, and the less-than-significant conclusion was based on this impact being identified in the City of Fresno General Plan Master Environmental Impact Report (MEIR) concluded that implementation of the General Plan would result in a significant impact related to farmland conversion and that no mitigation measures are available (beyond implementation of General Plan policies) to reduce the impact to a less-than-significant level. The MEIR ultimately concluded that the impact is significant and unavoidable (City of Fresno 2014b:p. 5.2-1). City Council reviewed the MEIR as part of its decision to approve the General Plan and adopted a statement of overriding considerations for all significant and unavoidable impacts, including the impact related to conversion of Important Farmland. Therefore, this alternative was determined to have a less-than-significant impact on Important Farmland because the project would not result in additional impacts to Important Farmland beyond those evaluated and

disclosed in the MEIR. In addition, while this alternative would be slightly farther from some sensitive receptors, it would be closer to others. Because this alternative would not reduce or avoid any significant impacts associated with the project, this alterative is not evaluated further in this Draft EIR.

6.4 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

The following alternatives evaluated in this Draft EIR.

- Alternative 1: No Project Alternative assumes no demolition of the existing structure nor construction of a new building. The project site would remain in its current condition.
- Alternative 2: Off-Site Alternative would involve relocating the rendering plant to an industrial parcel located near W. Nielsen Avenue and N. Hughes Avenue.
- Alternative 3: No Expansion Alternative would involve relocating the rendering plant to the proposed project site, but would not include expansion of facility operations.

Further details on these alternatives, and an evaluation of environmental effects relative to the proposed project, are provided below.

6.4.1 Alternative 1: No Project–No Development Alternative

Under Alternative 1, the No Project–No Development Alternative, no actions would be taken by the City or project proponent and the project site would remain unchanged from current conditions. The site would remain vacant and in its current condition. The No Project Alternative would not meet the project objectives. However, as required by CEQA, the No Project Alternative is evaluated in this Draft EIR.

Although it is acknowledged that with the No Project Alternative, there would be no discretionary action by the State, and thus no impact, for purposes of comparison with the other action alternatives, conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed project.

AESTHETICS

As discussed in Section 3.2, "Aesthetics," the project site is currently agricultural land cultivated in cotton. Alternative 1 would maintain the site in its current condition. Because land uses on-site would not change, there would be no effects to scenic vistas or changes to the visual character of the site, and Alternative 1 would not create a new source of substantial light or glare that would adversely affect views in the project vicinity. Overall, there would be no impacts to aesthetics when compared to existing conditions. Impacts under the project were determined to be less than significant with implementation of mitigation. Alternative 1 would have no impact to aesthetics, and would avoid the impacts altogether. Therefore, impacts under this alternative would be less than the project. *(Less)*

AGRICULTURAL RESOURCES

Implementation of Alternative 1 would not result in the conversion Prime Farmland and Farmland of Statewide Importance within the project site to nonagricultural use. Consistent with the Fresno General Plan Policy RC-9-c the applicant would be required to provide in-kind or similar resource value protection for land similar to the project site at a ratio of 1:1. This protection may consist of the establishment of farmland easements, or other similar mechanism and will be implemented prior to issuance of the first grading permit for development. This mitigation would reduce the impact on Important Farmland by preserving forever a similar acreage and type of farmland; however, once farmland is removed through development, it is irretrievably lost to future generations, and the impact would remain significant and unavoidable. Therefore, implementation of Alternative 1 would avoid the significant and unavoidable impact of the project on Important Farmland. *(Less, would avoid a significant and unavoidable impact)*

AIR QUALITY

Under Alternative 1, the project site would remain in agricultural production and air pollutants associated with the cultivation of the site would continue. However, there would be no air pollutants generated on-site from construction and operation of the project. There would continue to be operational emissions from the existing rendering plant at the existing location. Under Alternative 1, the rendering plant would not be expanded, so the operational emissions would be slightly less than with the project. Overall, there would be similar impacts to air quality when compared the existing conditions. Impacts under the project were determined to be less than significant with implementation of mitigation. While construction-related air quality impacts would be avoided under Alternative 1, ongoing air quality impacts from agricultural production would continue and operational emissions would be similar. Therefore, overall air quality impacts of Alternative 1 would be similar to the project. *(Similar)*

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Alternative 1 would not result in impacts to archaeological, historical, paleontological, or tribal cultural resources because there would be no construction on the site. The site would continue to be disturbed by agricultural cultivation; however, this would be a continuation of existing disturbance. Section 4.5, "Archaeological, Historical, and Tribal Cultural Resources," concluded that the project would have potentially significant impacts on archaeological and paleontological resources. These impacts would be reduced to a less-than-significant level with mitigation. Although Alternative 1 would include continued disturbance related to agriculture, it would have less potential for impacts to archaeological and paleontological resources. Therefore, Alternative 1 would result in less of an impact to archaeological and paleontological resources. *(Less)*

BIOLOGICAL RESOURCES

While agricultural operations under Alternative 1 would result in ongoing disturbance of the site, this alternative would not result in any new impacts to biological resources. Section 4.6, "Biological Resources," concluded that the project would have potentially significant impacts to burrowing owl, Swainson's hawk and other nesting raptors, and California horned lark. Alternative 1 would not result in new impacts to biological resources because there would be no construction or changes in disturbance on the site. While impacts on biological resources under the project were determined to be less than significant with implementation of mitigation, impacts under Alternative 1 would be slightly less than the project. *(Less)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 1, the project site would remain in agricultural production and the existing rendering plant would continue operation in the current location. Section 4.7, "Greenhouse Gas Emissions and Climate Change," concluded that the project would have a less than significant effect related to generation of GHGs. The project would generate GHGs associated with construction and expansion of the rendering facility. Although Alternative 1 would generate GHGs associated with the existing rendering plant, it would not result in GHG emissions associated with construction and expansion of the relocated rendering plant. While impacts under the project were determined to be less than significant, impacts under Alternative 1 would be less than the project. *(Less)*

HAZARDS AND HAZARDOUS MATERIALS

Section 4.8, "Hazards and Hazardous Materials," concluded that the project would have a potentially significant effect related to encountering previously unidentified contamination from historic agricultural use of the property. This impact would be reduced to less than significant with mitigation. Although Alternative 1 would include hazards associated with continued agricultural operations, it would not expose workers or the public to potential hazards associated with construction of the relocated rendering plant. While impacts under the project were determined to be less than significant with implementation of mitigation, impacts under Alternative 1 would be less than the project. *(Less)*

HYDROLOGY AND WATER QUALITY

Section 4.9, "Hydrology and Water Quality," concluded that the project would have a potentially significant effect related to increased stormwater rate and volume that could cause increased potential for localized flooding. This impact would be reduced to less than significant with mitigation. Alternative 1 would not result in an increase in water demand or potential impacts to groundwater associated with expansion of the project. Alternative 1 would also avoid the increase in impervious surfaces and, therefore, would not increase stormwater runoff or increase the potential for flooding. While impacts under the project were determined to be less than significant with implementation of mitigation, impacts under Alternative 1 would be less than the project. *(Less)*

LAND USE AND PLANNING

Section 4.10, "Land Use and Planning," concluded that the project would not result in any potentially significant effects related to land use and planning. Although Alternative 1 would not result in a General Plan Amendment or rezoning of the project site, this alternative would not reduce any potentially significant impacts associated with the project. Therefore, impacts related to land use and planning under Alternative 1 would be similar to the project. *(Similar)*

NOISE

Noise associated with operation of agricultural equipment on the project site, and noise-related impacts of the existing rendering plant would continue under Alternative 1. However, no construction- or operational-related noise associated with the project would be generated under Alternative 1. Section 4.11, "Noise," concluded that the project would result in less than significant impacts with the incorporation of mitigation. While the project's noise impacts associated with the project would be avoided, existing noise impacts at the project site and existing rendering plant would continue. In addition, the existing rendering plant is closer to sensitive receptors resulting in greater noise impacts that would occur at the project site. Therefore, overall, Alternative 1 would result in greater noise impacts than the project. (*Greater*)

TRANSPORTATION/TRAFFIC

While Alternative 1 would not result in construction- and expansion-related traffic associated with the project, vehicle trips associated with operation of the existing rendering plant would continue. In addition, vehicle trips associated with the existing plant occur in an area with more sensitive receptors and greater existing traffic congestion. Section 4.12, "Transportation/Traffic," concluded that the project would have less than significant impacts related to traffic. While impacts of the project would be avoided, traffic associated with the existing plant affects more sensitive receptors. Overall, Alternative 1 would result in slightly less traffic than the proposed project. (*Less*)

ENERGY

Alternative 1 would not result in construction- and expansion-related energy use; however, the existing rendering plant facility is less energy efficient than the new facility under the proposed project. Section 4.13, "Energy," concludes that the project would not result in any significant effects related to wasteful, inefficient, or unnecessary consumption of energy. Therefore, while short-term energy use related to construction and energy use related to expansion of the project would be avoided, the existing plant would be less energy efficient under Alternative 1. Overall, Alternative 1 would result in slightly less energy usage than the proposed project. (*Less*)

CUMULATIVE

With Alternative 1, the project's considerable contribution to cumulative impacts on Important Farmland and unacceptable intersection operations would not occur. Cumulative impacts on Important Farmland and intersection operations in the project vicinity would continue to be significant cumulative impacts under Alternative 1; however,

the project's contribution to these impacts would be avoided. Mitigation is included to reduce the project's contribution to both of these impacts; however, both impacts would remain significant and unavoidable**.** Therefore, implementation of Alternative 1 would avoid the project's contribution to significant and unavoidable cumulative impacts. *(Less, would avoid considerable contributions to significant and unavoidable impacts)*

6.4.2 Alternative 2: Off-Site Alternative

With Alternative 2, the rendering plant would be expanded and relocated from the existing location to a site within the city proper, west of N. Hughes Avenue and north of W. Nielsen Avenue (Figure 6-1). This alternative site is approximately 26 acres with no existing buildings and is primarily paved. The site is designated as Heavy Industrial in the Fresno General Plan and is zoned as Industrial-Heavy (IH). The Heavy Industrial land use designation allows a broad range of industrial uses including manufacturing, assembly, wholesaling, distribution, and storage activities. Consistent with the proposed Heavy Industrial land use designation, the IH zoning designation allows manufacturing, assembly, wholesaling, distribution, storage activities, and small-scale commercial services and ancillary office uses. This alternative site is surrounded by a mix of industrial, commercial, and residential development. The nearest residence is approximately 220 feet south of the alternative site.

This alternative site would not require a General Plan Amendment or rezoning because the alternative site is designated for industrial use.

AESTHETICS

Alternative 2 would include the same facilities and uses as the project. Thus, Alternative 2 would appear identical to the project as viewed from surrounding viewers. The lighting proposed under Alternative 2 would also be identical to the project and would likewise be subject to mitigation requiring preparation of a lighting plan and requirements to minimize lighting impact on other properties. This alternative would be located in an area with other industrial and commercial uses; however, the site is within the city proper and is surrounded by development including residences and retail uses. Therefore, the alternative site would be visible to a greater number of viewers and would be much closer to viewers (nearest residence is 220 feet to the south). Alternative 2 would result in greater aesthetics impacts than the proposed project. *(Greater)*

AGRICULTURAL RESOURCES

As discussed above, the proposed project would have a significant and unavoidable impact on conversion of Important Farmland. Alternative 2 would be located on a developed site that is designated for industrial uses. In addition, the site is designated by the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) as Urban and Built-Up Land, which is not considered Important Farmland (DOC 2016). Therefore, Alternative 2 would avoid this significant and unavoidable impact related to the project. (*Less, would avoid a significant and unavoidable impact)*

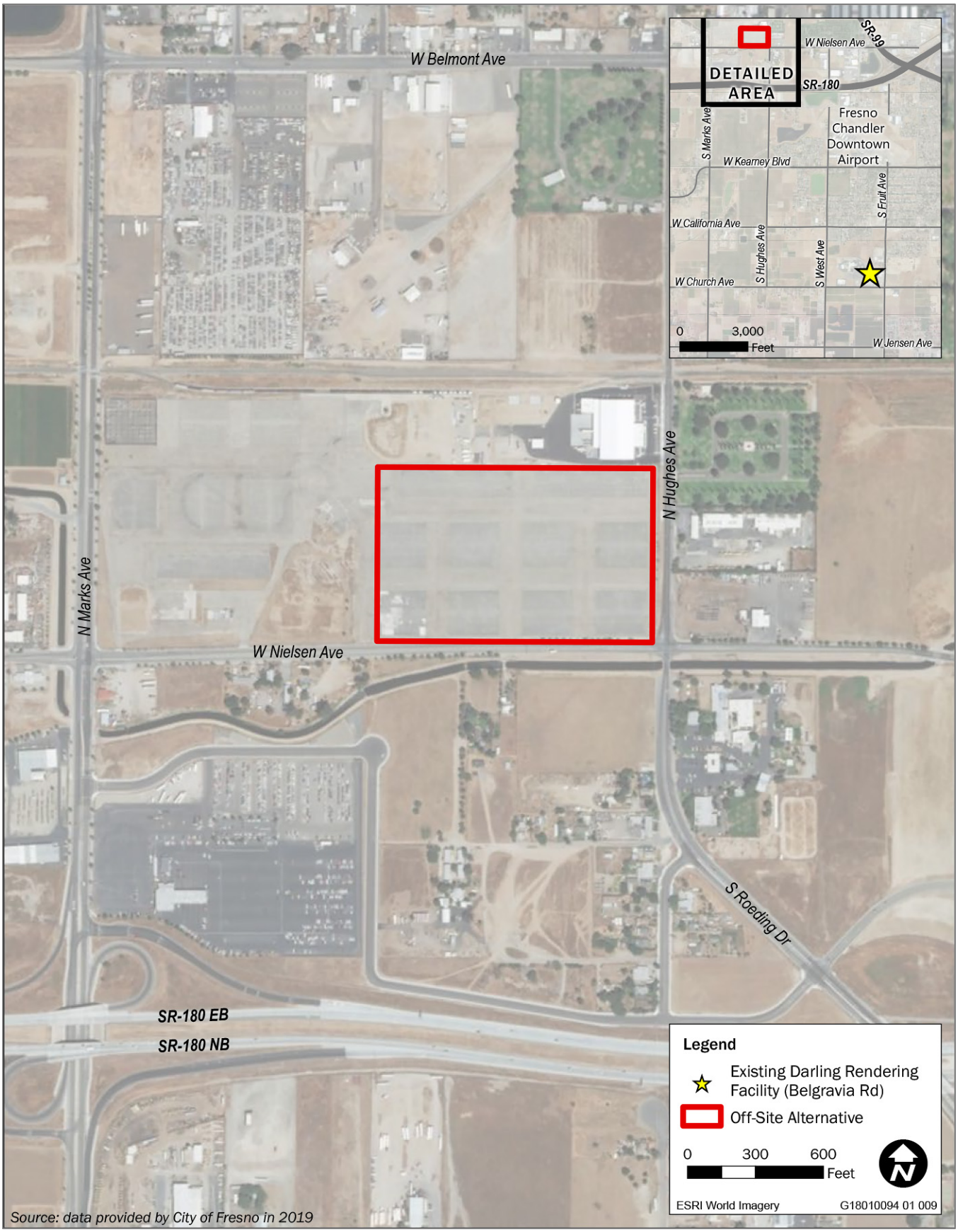

Figure 6-1 Alternative 2: Off-Site Alternative

AIR QUALITY

Construction under Alternative 2 would involve the same number and size facilities; however, pavement currently covering the alternative site would need to be removed. Thus, construction-related air pollutant emissions would be slightly more than those of the project. Construction-related emissions would be subject to the standard construction requirements for reducing construction emissions discussed in discussed in Section 4.4, "Air Quality." The operation-related air quality emissions associated with the expanded facility would be the same under Alternative 2 as with the project. However, the distance to sensitive receptors (220 feet compared to 2,440 feet with the project and 800 feet with the No Project Alternative), and number of sensitive receptors (13 within 1,000 feet compared to 0 within 1,000 feet with the project) that would be exposed to the construction- and operation-related emissions and odors would be much greater under Alternative 2. Therefore, Alternative 2 would result in greater exposure to emissions and odors compared to the project. *(Greater)*

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Alternative 2 would disturb the same size area as the project. Both the alternative site and project site are previously disturbed. The potential for discovery of unknown archaeological or paleontological resources under Alternative 2 would also be identical to the project and would likewise be subject to the same mitigation as the project. There would be no substantial change in the significance of the impact under this alternative. Overall impacts to archeological and paleontological resources would be similar. *(Similar)*

BIOLOGICAL RESOURCES

Alternative 2 would involve the same construction activities as the project and would be subject to mitigation measures requiring surveys prior to disturbance. However, the proposed project site is agricultural land (with several adjacent trees) that could provide potential habitat for Swainson's hawk, burrowing owl, and California horned lark. While there are many trees in the vicinity of the alternative site, the site is currently paved and provides very little habitat value. Mitigation is proposed under the project to reduce impacts to biological resources to less than significant; however, Alternative 2 would have less of an impact on removal of habitat. Therefore, the impacts of Alternative 2 on biological resources would be less than the project. *(Less)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Construction under Alternative 2 would result in slightly more GHG emissions than the project related to pavement removal. The operation-related emissions of Alternative 2 would be the same as the project. Overall, GHG impacts would be slightly greater than the project. *(Greater)*

HAZARDS AND HAZARDOUS MATERIALS

Although construction of Alternative 2 would avoid the potentially significant effect related to encountering previously unidentified contamination from historic agricultural use of the project site, the alternative site was previously occupied by industrial uses and has a similar potential to encounter previously unidentified contamination. This impact would be subject to mitigation requiring preparation of an environmental site assessment and identifying and remediating any on-site soil contamination related to prior use of the site. Operation of Alternative 2 would be the same as the project. Impacts related to hazards under Alternative 2 would be similar to the project. *(Similar)*

HYDROLOGY AND WATER QUALITY

Alternative 2 would include construction of the same number and size of facilities and would result in approximately 10 acres of impervious surfaces. The alternative site is currently paved, so use of the alternative site would not result in an increase in impervious surfaces and the increase in impervious surfaces associated with the project would be

avoided. In addition, Alternative 2 would be served by a municipal storm drain system. Therefore, it is unlikely that Alternative 2 would generate an increase in stormwater volume that could cause increased potential for localized flooding. Alternative 2 would result in a similar water demand to the project, but unlike the project, Alternative 2 would be located within the city-proper, which is in overdraft. While impacts associated with impervious surfaces and flooding would be less than the project, impacts related to groundwater would be greater than the project. Overall, Alternative 2 would have similar impacts to hydrology and water quality compared to the project. *(Similar)*

LAND USE AND PLANNING

Alternative 2 would not result in a General Plan Amendment or rezoning of the alternative site. However, Section 4.10, "Land Use and Planning," concluded that the project would not result in any potentially significant effects related to land use and planning. Although Alternative 2 would not result in a General Plan Amendment or rezoning of the project site, this alternative would not reduce any potentially significant impact associated with the project. Therefore, impacts related to land use and planning under Alternative 2 would be similar to the project. *(Similar)*

NOISE

Construction-related noise generated under Alternative 2 would be slightly greater than the project because of the pavement removal that would be required from the alternative site. The operation-related noise impacts related to Alternative 2 would be the same as the project. However, the distance to sensitive receptors (220 feet compared to 2,440 feet with the project), and number of sensitive receptors (13 within 1,000 feet compared to 0 within 1,000 feet with the project) that would be exposed to the construction- and operation-related noise would be much greater under Alternative 2. Therefore, Alternative 2 would result in greater exposure to noise compared to the project. *(Greater)*

TRANSPORTATION/TRAFFIC

Alternative 2 would result in slightly more construction haul trips associated with pavement removal. Vehicle trips associated with operation of Alternative 2 would be the same as the project; however, the alternative site is in an area surrounded by development that has greater traffic congestion and more sensitive receptors that would be exposed to the construction- and operation-related traffic. Therefore, the traffic-related impacts of Alternative 2 would be slightly greater than the project. *(Greater)*

ENERGY

Alternative 2 would have slightly greater construction energy demands related to pavement removal, and operation-related energy usage would be identical to the project. Section 4.13, "Energy," concluded that the project would have a less-than-significant impact on energy use. Overall, Alternative 2 would result in similar energy demands compared to the project. *(Similar)*

CUMULATIVE

With Alternative 2, the project's considerable contribution to cumulative impacts on Important Farmland would not occur. Alternative 2 would avoid the project's contribution to unacceptable intersection operations in the project vicinity, but would contribute a similar amount of traffic to intersections near the Alternative 2 site. It is expected that these intersections, which are in a more congested area of the city, would also operate at an unacceptable level under the cumulative condition. Therefore, implementation of Alternative 2 would avoid the project's contribution to a significant and unavoidable cumulative impact on Important Farmland, but would not avoid the project's contribution to unacceptable intersection operations. *(Less, would avoid a considerable contribution to a significant and unavoidable impact)*

6.4.3 Alternative 3: No Expansion Alternative

Under Alternative 3, the rendering plant would be relocated from the existing location to the proposed project site, but operations at the plant would not be expanded. The rendering plant would continue to be permitted to process up to 850,000 pounds of material per day and have approximately 38 employees compared to an anticipated daily production rate of 2 million pounds and 60 to 70 employees with the project. The square footage of the relocated facility would be approximately 28,000 square feet (sf) compared to 40,000 sf with the project. Alternative 3 would also result in approximately 40 fewer daily delivery truck trips than the project.

This alternative would require a General Plan Amendment and rezoning similar to the proposed project.

AESTHETICS

Alternative 3 would include the same facilities and uses as the project, but would have a smaller footprint. Although this alternative would include a slightly smaller facility, the viewer groups would be the same as with the project and overall the changes to the visual character would be similar to the project. The lighting proposed under Alternative 3 would be the same as the project and would likewise be subject to mitigation requiring preparation of a lighting plan and requirements to minimize lighting impact on other properties. Therefore, Alternative 3 would result in similar impacts to aesthetic compared to the proposed project. *(Similar)*

AGRICULTURAL RESOURCES

As discussed above, the proposed project would have a significant and unavoidable impact on conversion of Important Farmland. Because Alternative 3 would be located on the same site, it would result in the same significant and unavoidable impact related to Important Farmland. (*Similar)*

AIR QUALITY

Construction under Alternative 3 would be less because the facility would be approximately 12,000 sf smaller than the project. So construction-related air pollutant emissions would be slightly less than those of the project. Construction-related emissions would be subject to the standard construction requirements for reducing construction emissions discussed in discussed in Section 4.4, "Air Quality." The operation-related air quality emissions would also be less with Alternative 3 because there would be fewer emissions associated with mobile sources from employee commute trips and delivery trucks, as well as stationary sources from on-site processing equipment (e.g., rendering units, boilers, and generators). Therefore, Alternative 3 would result in fewer construction- and operation-related emissions compared to the project. *(Less*)

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Alternative 3 would disturb a smaller area compared to the project. However, there would still be the potential for discovery of unknown archaeological or paleontological resources under Alternative 3, and this alternative would likewise be subject to the same mitigation as the project. There would be no substantial change in the significance of archaeological or paleontological impacts under this alternative. Overall impacts to archeological and paleontological resources would the similar. *(Similar)*

BIOLOGICAL RESOURCES

Alternative 3 would disturb a smaller area than the project. However, Alternative 3 would still affect the same species and habitats, and would be subject to the same mitigation measures requiring surveys prior to disturbance. Therefore, the impacts of Alternative 3 on biological resources would be similar to the project. *(Similar)*

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Construction of Alternative 3 would result in fewer GHG emissions than the project related to constructing smaller facilities. The operation-related GHG emissions would be less than the project because there would be fewer emissions associated with mobile sources from employee commute trips and delivery trucks, as well as stationary sources from on-site processing equipment (e.g., rendering units, boilers, and generators). Overall, GHG impacts would be less than the project. *(Less)*

HAZARDS AND HAZARDOUS MATERIALS

Construction of Alternative 3 would involve the same potentially significant effect related to encountering previously unidentified contamination from historic agricultural use of the property. Although the facilities and operations would be reduced with Alternative 3, the potential for hazards would be similar to the proposed project. This impact would be subject to mitigation requiring preparation of an environmental site assessment and identifying and remediating any on-site soil contamination related to prior use of the site. Impacts related to hazards associated with Alternative 3 would be similar to the project. *(Similar)*

HYDROLOGY AND WATER QUALITY

Alternative 3 would disturb a smaller area and result in fewer acres of impervious surfaces. However, the increase in impervious surfaces would still generate an increase in stormwater volume that could cause increased potential for localized drainage issues. This alternative would be subject to the same mitigation requiring preparation of an on-site drainage plan that would result in a reduction in the potential for peak runoff rates to an appropriate adopted City standard or to existing runoff rates. In addition, Alternative 3 would result in less water demand than the project, which would reduce potential impacts to groundwater. Overall, impacts to hydrology and water quality under Alternative 3 would be less than the project. *(Less)*

LAND USE AND PLANNING

Alternative 3 would require a General Plan Amendment and rezoning and would be consistent with relevant policies, ordinances, and other resolutions similar to the project. Therefore, impacts related to land use and planning with Alternative 3 would be similar to the project. *(Similar)*

NOISE

Noise generated by Alternative 3 would be slightly less than the project because there would be less construction and reduced operations. The distance to sensitive receptors would be the same for Alternative 3 compared to the project. Overall, Alternative 3 would result in slightly less noise compared to the project. *(Less)*

TRANSPORTATION/TRAFFIC

Alternative 3 would result in fewer vehicle trips associated with construction of a smaller facility. Vehicle trips associate with operation of Alternative 3 would also be less because there would be fewer employee commute trips and haul trips. The same roadways and intersections would be affected by Alternative 3 as compared to the project; however, the traffic-related impacts of Alternative 3 would be less than the project. *(Less)*

ENERGY

Alternative 3 would result in less energy demands associated with construction and operations. Although Section 4.13, "Energy," concluded that the project would not result in inefficient or wasteful use of energy, Alternative 3 would further reduce energy use compared to the project. (*Less)*

CUMULATIVE

Alternative 3 would make the same considerable contribution to cumulative impacts on Important Farmland as the project. In addition, although Alternative 3 would contribute slightly less traffic, it would still contribute to a significant cumulative impact at the same intersections as the project. Therefore, implementation of Alternative 3 would make a similar contribution to cumulative impacts on Important Farmland and unacceptable intersection operations, and would not avoid the contribution to unacceptable intersection operations. *(Similar)*

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Because the No Project Alternative (described above in Section 6.4.1) would avoid all significant impacts resulting from construction and operation of the Fresno Rendering Plant Relocation Project analyzed in Chapter 4, it is the environmentally superior alternative. However, the No Project Alternative would not meet the objectives the project as presented above in Section 6.2.

When the environmentally superior alternative is the No Project Alternative, the State CEQA Guidelines (Section 15126[d][2]) require selection of an environmentally superior alternative from among the action alternatives evaluated. As illustrated in Table 6-1, below, Alternative 2: Off-Site Alternative would be the environmentally superior action alternative because it would avoid the significant and unavoidable impact on Important Farmland and reduce potentially significant impacts associated with biological resources associated with the project. However, this alternative would result in greater impacts on aesthetics, air quality, GHG emissions, noise, and traffic. In addition, Alternative 2 would not achieve the primary objective of the project to move the rendering plant farther from sensitive receptors.

Table 6-1 Summary of Environmental Effects of the Alternatives Relative to the Proposed Fresno Rendering Plant Relocation Project

Environmental Topic	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Off-Site Alternative	Alternative 3: No Expansion Alternative
Aesthetics	Less than significant (with mitigation)	Less	Greater	Similar
Agricultural Resources	Significant and unavoidable	Less, would avoid SU	Less, would avoid SU	Similar
Air Quality	Less than significant (with mitigation)	Similar	Greater	Less
Archaeological, Historical, and Tribal Cultural Resources	Less than significant (with mitigation)	Less	Similar	Similar
Biological Resources	Less than significant (with mitigation)	Less	Less	Similar
Greenhouse Gas Emissions and Climate Change	Less than significant	Less	Greater	Less
Hazards and Hazardous Materials	Less than significant (with mitigation)	Less	Similar	Similar
Hydrology and Water Quality	Less than significant (with mitigation)	Less	Similar	Less
Land Use and Planning	Less than significant	Similar	Similar	Similar
Noise	Less than significant (with mitigation)	Greater	Greater	Less
Transportation/Traffic	Less than significant	Less	Greater	Less
Energy	Less than significant	Less	Similar	Less
Cumulative	Significant and Unavoidable	Less	Less	Similar

7 OTHER CEQA SECTIONS

7.1 GROWTH INDUCEMENT

California Environmental Quality Act (CEQA) Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an environmental impact report (EIR). Section 15126.2(d) of the State CEQA Guidelines provides the following guidance for assessing growth-inducing impacts of a project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can induce growth directly, indirectly, or both. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but may foreseeably lead to environmental effects. If substantial growth inducement occurs, it can result in secondary environmental effects, such as increased demand for housing, demand for other community and public services and infrastructure capacity, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, conversion of agricultural and open-space land to urban uses, and other effects.

7.1.1 Growth-Inducing Impacts of the Project

The project would foster short-term and long-term economic growth associated with construction and operational employment opportunities. Project construction is expected to take approximately 18 to 24 months. Upon initiation of operational activities, the relocated plant would employ approximately 60 to 70 full-time employees, including 23 new positions created as a result of the project.

GROWTH-INDUCING EFFECTS OF CONSTRUCTION

It is estimated that depending on the phase of construction, there could be up to 50 construction workers on site on a given day. Construction jobs supporting the proposed project would be temporary and it is the nature of construction work that construction contractors bid and work on projects based on their availability and need for work, and in regions that are accessible to their work force. As existing construction projects near completion, contractors may seek out new construction projects to maintain employment for the same workers. Although it is possible that some construction workers could move to the city or the region as a result of the proposed project and cumulative projects,

the existing labor force is anticipated to be sufficient to meet construction employment needs for these projects. In addition, the number of employees residing in Fresno County exceeds the number of jobs available (U.S Census 2017). Therefore, employees who live in Fresno County tend to travel outside the County to their place of employment. The City's General Plan focuses on improving economic growth through encouraging mixed-uses and higher intensities in developed areas (City of Fresno 2014:3-3). It is anticipated that the new employees would most likely reside locally (within the city or county). For these reasons, substantial population growth or increases in housing demand in the region as a result of these construction jobs is not anticipated. Therefore, the project would not directly induce population growth by bringing substantial numbers of construction jobs to the area, or result in associated increases in demand for housing or goods and services.

GROWTH-INDUCING EFFECTS OF OPERATION

The project includes the construction of a relocated and expanded industrial rendering facility. The facility would move from its current location within the southeastern portion of the city to an incorporated island of City-owned property that is west of the city proper and surrounded by unincorporated agricultural land. The project does not include the construction of housing, extending roads, or expanding service infrastructure. As discussed in Chapter 1, "Introduction," there is sufficient water supply and wastewater treatment capacity to serve the project. The project would not require new water entitlements, nor expanded, upgraded, or new water or wastewater infrastructure beyond the new building's connections. The project would therefore not induce growth through extending roadway or utility infrastructure to new areas or from increasing infrastructure capacity.

The expanded rendering plant would provide approximately 23 new long-term employment positions in addition to the current employees, bringing the total to a maximum of 70 employees. However, as discussed above, the number of employees residing in Fresno County exceed the number of jobs available and it is anticipated that the new employees would most likely reside locally (within the city or county). Therefore, the growth in employees would not directly induce population growth by bringing substantial numbers of new jobs to the project vicinity, or result in associated increases in demand for housing or goods and services.

For these reasons, operation of the project is not expected to result in any direct population growth or any substantial indirect population growth.

7.2 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

The State CEQA Guidelines Section 15126.2(b) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. Accordingly, this section provides a summary of significant environmental impacts of the project that cannot be mitigated to a less-than-significant level.

Sections 4.1 through 4.13 of this Draft EIR describe the potential environmental impacts of the project and recommend various mitigation measures to reduce impacts, to the extent feasible. Chapter 5, "Cumulative Impacts," determines whether the incremental effects of this project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. The following impacts were identified as significant and unavoidable under project and cumulative conditions.

- Agricultural Resources Impact 4.3-1: The project would convert Prime Farmland and Farmland of Statewide Importance to a non-agricultural use. As part of the General Plan Update process, the City of Fresno General Plan Master Environmental Impact Report (MEIR) evaluated the potential for future development associated with the General Plan to result in impacts related to conversion of Important Farmland to non-agricultural use. The General Plan identified policies to reduce potential impacts to farmland conversion outside the city limits. Although the project site is on city-owned land and is within the city limits, it is not within the city proper and is surrounded primarily by agricultural uses. Because the project site is outside the city proper in an area dominated by farmland and agricultural operations, and the project would result in a permanent conversion of Important Farmland. This impact would be significant. Mitigation Measure 4.3-1: Farmland Preservation would require that the project shall provide in-kind or similar resource value protection for land similar to the project site at a ratio

of 1:1. While implementation of Mitigation Measure 4.3-1 could reduce the impact on Important Farmland by preserving forever a similar acreage and type of farmland, once farmland is removed through development, it is irretrievably lost to future generations. Therefore, the impact would remain **significant and unavoidable.**

- **Cumulative Impacts to Intersection Operations:** The study intersections of Jensen Avenue/Cornelia Avenue and Jensen Avenue/Brawley Avenue are forecast to operate at unacceptable levels (LOS E or F) during the p.m. peak-hour under Cumulative and Cumulative Plus Project conditions. Furthermore, the addition of project generated trips would result in an increase in average delay of more than 5 seconds for individual movements at these unsignalized study intersections currently operating at an unacceptable level. Thus, the project would result in a cumulatively considerable contribution to a significant impact. While Mitigation Measures 5-1a and 5-1b would result in fair share payment toward improvements that would reduce the impact at these intersections to a less-than-significant level, because these intersections have not been identified for any planned or programmed future improvements and these intersections are outside of the City of Fresno's jurisdictional control, it cannot be guaranteed that these improvements would be implemented. Therefore, the project **would have a potentially substantial contribution to a significant cumulative impact**.

7.3 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the project. Specifically, the State CEQA Guidelines Section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generation to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- construction materials, including such resources as soil, rocks, wood, concrete, glass, roof shingles, and steel;
- land area committed to new project facilities; and
- energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources. Construction contractors would be required to comply with emissions control measures applicable to the project. Long-term project operation would not result in substantial increase in consumption of energy and natural resources.

As described in Chapter 3, "Project Description," an operational goal of the project to improve operational efficiency related to processing materials. To meet this goal, the project would include a new facility with updated technology. Notwithstanding the project benefit of improved efficiency, construction and operational activities related to the project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

With respect to operational activities, compliance with all applicable building codes, as well as project mitigation measures, would require that natural resources are conserved or recycled to the maximum extent feasible. Nonetheless, a long-term increase in the demand for electricity, natural gas, and water would occur. However, as discussed in Impact 4.13-1 in Section 4.13, "Energy," the project would not involve a wasteful or unjustifiable use of energy or other resources, and energy conservation efforts would also occur with the proposed construction and operation of the project. Therefore, the use of energy on site would occur in an efficient manner.

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