CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

Turlock North Valley Laboratory Replacement Project

Draft Environmental Impact Report

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February 2022

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Draft Environmental Impact Report

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Acronyms and Abbreviations

A	
AB	Assembly Bill
AFY	acre feet/year
AHB	Animal Health Branch
AHFSS	Animal Health and Food Safety Services Division
ANSI	American National Standards Institute
APN	assessor's parcel number
AST	above-ground storage tank
ATCM	airborne toxic control measure
ATD	aerosol-transmissible diseases
B	
B.P.	before present
bgs	below ground surface
BMBL	Biosafety in Microbiological and Biomedical Laboratories
BMP	best management practice
BPS	best performance standards
BSL	biosafety level
BSL-2	biosafety level 2
BTU	a unit of measurement for energy
BUOW	burrowing owls
C	
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAHFS	California Animal Health and Food Safety
CalARP	California Accidental Release Prevention
CAL FIRE	California Department of Forestry and Fire Protection
Cal EMA	California Emergency Management Agency
Cal OES	California Governor's Office of Emergency Services
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recovery and Recycling
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring

CBC	California Building Standards Code
CBOC	California Burrowing Owl Consortium
CCAA	California Clean Air Act
CCIC	Central California Information Center
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CDC	Center for Disease Control
CDFA	California Department of Agriculture
CDPH	California Department of Public Health
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also called the Superfund Act)
CESA	California Endangered Species Act
CFC	chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
City	City of Turlock
CIWMA	California Integrated Waste Management Act
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPF	cancer potency factor
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
cy	cubic yards

D

dB	decibel
dBA	a-weighted decibel
DDT	dichlorodiphenyltrichloroethane

DEIR	draft environmental impact report
DGS	California Department of General Services
Diablo Range	Sierra Nevada to the east, the Tehachapi Mountains, and the Coast Range
Division	Animal Health and Food Safety Services Division
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources

E

eBird	eBird.org
EIA	U.S. Energy Information Administration
EIR	environmental impact report
EO	Executive Order
EPCRA	Emergency Planning Community Right-to-Know Act
ESA	Endangered Species Act

F

Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FMD	Foot-and-mouth disease
FMP	Stanislaus County Farmland Mitigation Program
ft^2	square feet
FR	Federal Register
FTA	Federal Transit Administration

G

GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
Geocon	Geocon Consultants, Inc.
GHG	greenhouse gas
gpd	gallons per day
gpy	gallons per year
GSA	Groundwater Sustainability Agency
GSF	gross square feet
GWP	global warming potential

H

H_2S	hydrogen sulfide
HAP	hazardous air pollutant

HCFC	hydrochlorofluorocarbon
HCP	habitat conservation plan
HEPA	high efficiency particulate air
HFC	hydrofluorocarbon
HI	Hazard Index
HMTA	Hazardous Materials Transportation Act
Horizon	Horizon Water and Environment, LLC
hp	horsepower
HQ	hazard quotient
HVAC	heating, ventilation, and air conditioning
Hwy	highway
Hz	Hertz

I

IEPR	Integrated Energy Policy Report
in/sec	inches per second
IS	initial study

K

kHz	kiloHertz
kW	kilowatt
KWh	kilowatt per hour

L

lbs	pounds
lbs/hour	pounds per hour
Lden	day-evening-night noise level
LDL	Larson Davis Laboratories
Ldn	energy average of the A weighted sound levels occurring during a 24-hour period (also DNL)
LEED	Leadership in Energy & Environmental Design
Leq	equivalent sound level (the sound energy averaged over a continuous period of time)
$L_{eq}(h)$	1-hour, A-weighted equivalent sound level
L_{max}	maximum instantaneous sound level
Ln	the sound level exceeded “n” percentage of a specified period
LOS	level of service
LUST	leaking underground storage tank

M

MBTA	Migratory Bird Treaty Act
MDFS	Milk and Dairy Food Safety Branch

MEI	maximally exposed individual
MGD	million gallons per day
MLD	most likely descendant
MMBH	million BTUs per hour
MMBtu/hr	million British thermal units per hour
MMBtu	million British thermal units
MMT	million metric tons
MMT CO_2e/yr	million metric tons of carbon dioxide equivalents per year
MPO	metropolitan planning organization
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
MT	metric ton
MT CO_2e	metric tonnes of carbon dioxide equivalents
MWMA	Medical Waste Management Act
MWMP	Medical Waste Management Program

N

NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NEHRP	National Earthquake Hazards Reduction Program
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NIH	National Institute of Health
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOP	Notice of Preparation
NOX	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSF	National Science Foundation

O

O&M HCP	PG&E San Joaquin Valley Operation & Maintenance Habitat Conservation Plan
O_2	dioxygen
O_3	ground-level ozone
OBD	on-board diagnostic

OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
ozone precursors	ROG and NOx

P

Pb	lead
PCE	tetrachloroethylene
PERP	Portable Equipment Registration Program
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM10	particulate matter of aerodynamic radius of 10 micrometers or less
PM2.5	particulate matter of aerodynamic radius of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPE	personal protective equipment
ppm	parts per million
PPV	peak particle velocity
Proposed Project	CDFA Turlock North Valley Laboratory Replacement Project
PTO	Permit to Operate
Pub. Res. Code	Public Resources Code
PVC	polyvinyl chloride

R

RCRA	Resource Conservation and Recovery Act of 1976
RELs	reference exposure level
RMP	risk management program
RMS	root-mean-squared
ROG	reactive organic gases
RPM	Refrigerant Management Program
RPM	risk management plan
RPS	Renewables Portfolio Standard
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
RWQCF	Turlock Regional Water Quality Control Facility

S

SAFE	Safer Affordable Fuel-Efficient
SARA	Superfund Amendments and Reauthorization Act of 1986
SB	Senate Bill

SBCAPCD	Santa Barbara County Air Pollution Control District
SCAQMD	South Coast Air Quality Management District
SCHSA	Stanislaus County Health Services Agency
SCS	Sustainable Communities Strategy
SDAPCD	San Diego Air Pollution Control District
SGMA	Sustainable Groundwater Management Act
SHMA	Seismic Hazards Mapping Act of 1990
SIP	state implementation plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP Strategy	Short-Lived Climate Pollutant Strategy
SMARA	Surface Mining and Reclamation Act
SMGB	California State Mining and Geology Board
SO_2	sulfur dioxide
SO_4	sulfate
SOx	sulfur oxide
SPCC	Spill Prevention, Control, and Countermeasure
SRA	State Responsibility Area
SRRF	Stanislaus Resource Recovery Facility
SRWA	Stanislaus Regional Water Authority
SWHA TAC	Swainson's Hawk Technical Advisory Committee
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board

T

TAC	toxic air contaminant
TCP	traditional cultural property
TCR	tribal cultural resource
TID	Turlock Irrigation District
TID Lateral Canal	Turlock Irrigation District's Upper Lateral No. 4 Canal
TISG	Vehicle Miles Traveled – Focused Transportation Impact Study Guide
TMDL	Total Maximum Daily Load
TPA	transit priority area

U

UC	University of California
UC Davis	University of California, Davis, School of Veterinary Medicine
U.S.	United States
UCMP	University of California, Berkeley Museum of Paleontology
ULSD	ultra-low sulfur diesel
USACE	U.S. Army Corps of Engineers

USC	Unites States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGBC	U.S. Green Building Council
USGS	U.S. Geological Survey
UST	underground storage tank
UWMP	urban water management plan

V

VCAPCD	Ventura County Air Pollution Control District
VdB	vibration decibel
VMT	vehicle miles traveled
VOC	volatile organic compound

W

WBWG	Western Bat Working Group
WDR	Waste Discharge Requirement
Williamson Act	California Land Conservation Act of 1965
WISP	Westside Industrial Specific Plan
WRCC	Western Regional Climate Center

Z

ZEVs	zero-emission vehicles

SYMBOLS

°F	degrees Fahrenheit

EXECUTIVE SUMMARY

ES.1 OVERVIEW OF THE PROPOSED PROJECT

The CDFA Turlock North Valley Laboratory Replacement Project (Proposed Project) involves the construction and operation of a replacement necropsy, laboratory, and office facility to serve the California Animal Health and Food Safety (CAHFS); new offices to serve the California Department of Food and Agriculture (CDFA); and associated improvements. The Proposed Project would relocate the existing CAHFS Turlock Laboratory facility to a new site and facility with adequate space for necropsy, laboratory, and office functions, enabling the agencies to provide full services to the livestock and poultry farmers in the region and consolidate two AHFSS field offices to a central location. The Proposed Project would provide adequate workspace, equipment storage, and vehicle parking for approximately 44 current employees assigned to this office, increasing to 56 total employees in the future.

ES.1.1 Background and Need for the Proposed Project

The CAHFS laboratory system is operated through an interagency agreement between the CDFA and the University of California, Davis, School of Veterinary Medicine (UC Davis) to provide necropsy and laboratory support for California's livestock and poultry producers. CAHFS' mission is to safeguard public health and California's agricultural industry with rapid and reliable diagnoses for animal diseases, including those that can affect humans, in livestock herds and poultry flocks. CAHFS operates in partnership with CDFA, UC Davis, veterinarians, and livestock and poultry producers to protect animal health and performance, public health, and the food supply. Livestock and poultry producers can utilize a variety of testing and diagnostic services offered by CAHFS laboratories to manage the health of their animals. The current CAHFS laboratory network consists of four facilities located at UC Davis and within the cities of Turlock, Tulare, and San Bernardino. This laboratory network serves as a critical early warning system to rapidly detect disease outbreaks so that CDFA can contain them before they spread, mitigating potentially devastating impacts to producers and the economy, and protecting human and animal health.

CDFA's mission is to serve the citizens of California by promoting and protecting a safe, healthy food supply and enhancing local and global agricultural trade through efficient management, innovation, and sound science, with a commitment to environmental stewardship. To this end, CDFA's Animal Health and Food Safety Services Division (AHFSS or Division) has multiple office locations throughout the state dedicated to protecting public and animal health to ensure the safety, availability, and affordability of California's agricultural products. AHFSS is responsible for the safety and security of meat, poultry, and dairy products, along with other foods of

animal origins. AHFSS provides services to protect the public and animal health through prevention, detection, and eradication of livestock and poultry diseases and dairy contamination incidents. In addition, the Division protects cattle owners against loss of animals by theft, straying, or misappropriation through ongoing inspections and investigative services. AHFSS also provides services to prolong the effectiveness of antimicrobial agents by monitoring their use in livestock and providing stewardship guidance. The Division provides animal care oversight by ensuring that covered products sold in California are from animals meeting minimum housing standards. Finally, the Division works with the California Governor's Office of Emergency Services to support animal needs during disasters.

The existing CAHFS Turlock laboratory facility, located at 1550 North Soderquist Road in Turlock, California, supports 17 staff. The existing CAHFS Turlock laboratory facility is aging and has space restrictions that limit the laboratory to accepting only avian species. CAHFS and CDFA are seeking to replace the existing Turlock laboratory with a new full-service laboratory, office, and necropsy facility to provide comprehensive services related to animal health and performance, public health, and food safety in the northern San Joaquin Valley region.

The replacement CDFA Turlock North Valley laboratory building would contain additional office and storage space to allow for the relocation of AHFSS staff from leased facilities at different locations to the new State-owned facility. This consolidation of resources into one permanent location would remedy issues with existing leased space, provide cost savings to the State, and provide opportunities for increased collaboration among AHFSS staff and with CAHFS. CDFA plans to relocate staff from offices in Modesto and Stockton who are responsible for livestock health and dairy product food safety and testing to the new proposed facility.

To improve veterinary diagnostic services and disease surveillance in the northern San Joaquin Valley region, and to consolidate State resources to better protect and promote California’s agricultural industry, the existing CAHFS Turlock laboratory must be replaced. The building’s age and size limitations prevent the laboratory from providing needed services to the surrounding area’s many mammalian producers, including local beef and dairy producers. In addition, the existing Turlock laboratory is surrounded by residential and other urban land uses that prevent an expansion of the facility. Due to the age, design, and space constraints of the existing facility, upgrading the existing facility to meet the needs of CDFA and CAHFS is not feasible.

ES.1.2 Purpose and Objectives

The Proposed Project would relocate the existing CAHFS Turlock Laboratory facility to a new site and facility with adequate space for necropsy, laboratory, and office functions, enabling the agencies to provide full services to the livestock and poultry farmers in the region and consolidate two AHFSS field offices to a central location. The Proposed Project would provide adequate workspace, equipment storage, and vehicle parking for approximately 44 current employees assigned to this office, increasing to 56 total employees in the future.

Specific project objectives are as follows:

- Replace and relocate outdated and fragmented facilities with modern necropsy, laboratory, and office facilities and support functions on one campus that will maximize efficiencies while maintaining the safety requirements for facilities operating at biosafety level-2 (BSL-2).
- Provide improved client (i.e., local livestock and avian providers) access to veterinary diagnostic services in a relatively underserved area.
- Increase animal disease surveillance capability.
- Provide enhanced identification of potential diseases occurring in mammalian species such as beef and dairy cattle, sheep, goats, horses, and pigs in this livestock-dense region of commercial operations, small farms and ranches, and backyard animal raisers.
- Develop sufficient space and appropriate infrastructure to meet the current and evolving threats to public and animal health, such as emerging diseases, bioterrorism, and food safety.
- Incorporate advanced diagnostic technologies and equipment to meet the demand of local clients for state-of-the-art testing services.
- Improve biosecurity measures to protect employees and prevent the spread of disease agents from the laboratory.
- Implement the joint mission of harmonizing animal disease and food safety inspection and monitoring capacity for AHFSS staff, allowing for efficient emergency preparedness planning and response in a part of the state that is rich in animal agriculture.

ES.2 PROJECT LOCATION

The Proposed Project site is located at 830 Dianne Drive, at the northeast corner of Dianne Drive and West Canal Drive in Turlock, California (**Figure ES-1**), and directly west of Hwy 99. As shown in Figure 2-1, the Proposed Project site is located approximately 0.77 mile southwest of the existing CDFA Turlock Laboratory. The site consists of an approximately 7.5-acre portion of a 27-acre parcel (Assessor Parcel Number [APN] 089-021-004-000). The parcel is generally rectangular in shape and angled to the west/east along the east boundary of the parcel adjacent to Hwy 99. The 7.5-acre site would be located in the parcel's westernmost area, farthest from Hwy 99. Access to the site is available on Dianne Drive, a two-lane road that runs along the west boundary of the parcel. The Turlock Irrigation District (TID) owns and operates an uncovered irrigation canal, TID Upper Lateral No. 4, along the southern boundary of the parcel.

The site has been owned by CDFA since March 2020. The Proposed Project site consists of level agricultural row cropland currently designated as Prime Farmland. Land uses immediately adjacent to the site are agricultural land and rural residences. Land uses east of Hwy 99 include residential and commercial development. Associated improvements at the site include buried irrigation piping and outlet structures extending across the site to the north. **Figure ES-2** shows the Proposed Project site and surrounding area.

ES.3 SUMMARY OF THE PROPOSED PROJECT

The Proposed Project involves the construction and operation of a replacement CAHFS necropsy, laboratory, and office facility; new CDFA offices; and associated improvements. The preliminary conceptual site plan for the proposed CDFA Turlock North Valley Laboratory is shown in **Figure ES-3**. Note that the site plan is preliminary and conceptual; the final design for the Proposed Project may include modifications to this site plan.

The Proposed Project would include a developed area of approximately 7.5 acres (approximately 326,700 ft^2) within the approximate 27-acre site. Approximately 214,520 ft^2 (4.9 acres) of this would be impervious surfaces; the remainder of the site would be unpaved, including landscaping and stormwater management elements. The Proposed Project would include the resurfacing of approximately 27,940 ft^2 of roadway/sidewalks along Dianne Drive adjacent to the site and development of an access driveway (approximately 30,320 ft^2) along the north boundary of the site. The total impervious surface area of approximately 4.9 acres includes these roadway- and driveway-related impermeable surface areas, as well as other impervious surfaces related to the proposed structures and paved areas. These area quantities are subject to change pending the final design.

ES.3.1 Proposed Project Facilities

The Proposed Project would include a laboratory and office building, a cremator, staff and visitor parking areas, utility improvements, and other ancillary improvements. Descriptions of these facilities follow. Preliminary conceptual locations of Proposed Project facilities are indicated in Figure ES-3.

Structures

The primary feature of the Proposed Project is a laboratory and office building. Additional structures would include a possible cooling tower, chiller and pump building, hazardous waste/chemical storage area, equipment shop building, and truck rinse pit.

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Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand),

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N

0 1

Miles

Figure ES-1
Project Vicinity

T:_Proposal\P19079_CDFA\Fig_2_Aerial_View.mxd PG 1/9/2020

Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors,

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0 0.45

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Figure ES-2

Aerial View of Proposed Project Area

Necropsy, Laboratory, and Office Building

The necropsy, laboratory, and office building would be a single-story building with an area ranging from approximately 33,500 gross square feet (GSF) up to 41,000 GSF. The facility would be built to meet the California Building Code (2019 or current version), California Green Code, Title 24 energy and resource standards, and achieve a U.S. Green Building Council (USGBC) Leadership in Energy & Environmental Design (LEED) Silver or higher accreditation. The USGBC grants LEED certification based on a scoring system related to impact categories such as energy, water, waste, materials, location, and transportation (USGBC 2019).

The building would include the following facilities, some of which are described in more detail below:

- offices and workstations;
- break room;
- large and small conference rooms;
- public lobby;
- laboratory rooms for various activities, including (but not limited to) diagnostics, pathology, histology, and bacteriology services;
- laundry room;
- men's/women's restrooms, locker rooms, and showers;
- lactation room;
- chiller and pump room;
- necropsy suite;
- cremator;
- server, communications, and technology room; and
- janitorial, mechanical, and electrical rooms.

Laboratories

Laboratory biosafety ratings vary based on the degree of building containment and laboratory protocols required to protect human health while conducting research with particular organisms. The Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), in the current edition of the publication *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) (CDC and NIH 2020), defines four biosafety levels. Levels BSL-1 through BSL-4 apply to biohazardous materials operations in ascending order of containment and safety protocol, based on the risk posed by the organism present in the laboratory. Although these biosafety levels were originally intended to protect human health, the guidelines are also widely used to prevent the release of pathogens from laboratories.

The Proposed Project would provide laboratory space meeting current BSL-2 standards. BSL-2 is appropriate for use with biohazardous materials that are considered to be of ordinary hazard and may produce varying degrees of disease through accidental autoinoculation, ingestion, and exposure to skin or mucous membranes. For example, many hospital diagnostic labs are considered BSL-2 facilities.

The proposed CDFA Turlock North Valley Laboratory facility would include necropsy and laboratory space designed to federal and University of California BSL-2 safety standards, with office areas isolated from laboratory and animal/sample holding areas and decontamination facilities. Laboratory areas would be organized based on intended function and assumed hazard level. Individual spaces would be located within a layout that would provide multiple layers of safety measures to prevent cross-contamination or accidental exposure.

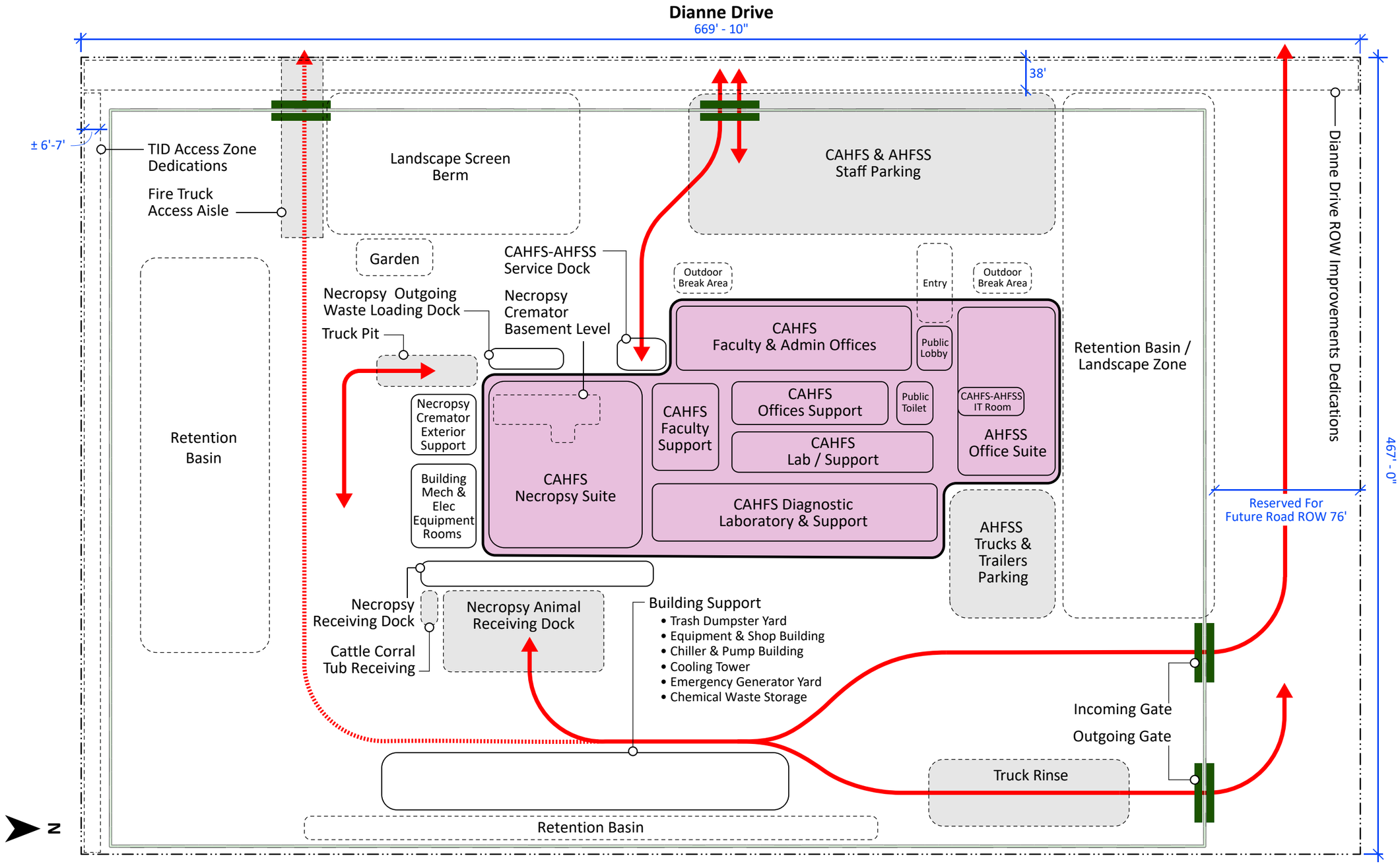
Access would be limited to authorized personnel only. Internal security features such as individual door locks and keycard access would be used to limit access to laboratory areas. Laboratory areas would be separated from areas open to the public and from other laboratory personnel who do not work within a particular zone or laboratory function by controlled access zones and decontamination areas.

All procedures in which infectious aerosols or spills could be created would be conducted in biosafety cabinets or other forms of primary containment equipment. All waste from the laboratories would be autoclaved or otherwise decontaminated prior to disposal from the facility. All waste would be disposed of in accordance with the Medical Waste Management Act of California, a project-specific Waste Management Plan, and the medical waste permits issued by the County of Stanislaus' Department of Environmental Resources.

Each lab would have a heating, ventilation, and air conditioning (HVAC) system with single-pass, 100 percent outside air flow that would not be recirculated into other building spaces, and would have negative pressurization relative to adjacent spaces. Under negative pressure, fresh air would be supplied into each laboratory space from the outside environment and be directly exhausted to the outside environment. Negative pressure would be achieved with the exhaust air flow set at a higher rate than the supply air flow rate in the room and adjacent spaces. Consistent with federal guidelines, all windows would be sealed, breakage resistant, and inoperable to preserve the air flow balance. The layout of each laboratory would allow potential hazards to be divided into zones based on degree of hazard, with directional air flow moving from less hazardous to more hazardous zones within a space. For example, desk areas for computer use where supply air would enter the space would be considered a less hazardous zone, while a chemical fume hood laboratory where the air would be exhausted from the space would be considered more hazardous.

Cremator

A cremator would be used to dispose of some animal carcass waste as allowed by local regulations. It is anticipated that the cremator would be a vertical structure located in the basement below the proposed necropsy suite; however, as the project's design is finalized, this may be changed to a horizontal cremator located on the building's main level. The cremator would be powered by natural gas. General cremator operations would involve loading animal waste through a hatch, incinerating the waste, emitting gaseous byproducts through a stack during incineration, and disposal of the resulting ash waste.



Source: Flad Architects 2021

Prepared by: Horizon WATER and ENVIRONMENT

CAHFS/CDFA Facility
Secruity Fence
Gate
Fire Truck Access Lane
Vehicular Circulation

Figure ES-3
Conceptual Site Plan

Turlock North Valley Laboratory Replacement Project

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The cremator system would include, but would not be limited to, an incinerator chamber; an ash chamber; an ash cart; and an electronic operating, data, and acquisition system. Ash would be cooled and would be disposed of using an ash cart with a lift. The cremator's operations, including temperature monitoring, would be controlled automatically through the data and acquisition system. Capacities of the cremator system would accommodate approximately 1,000 pounds per hour (lbs/hour) of animal waste material or 1,200 lbs of ash. The cremator stack would extend approximately 20 feet above the building roof. Temperatures in the cremator would be at or above 1,600 degrees Fahrenheit (°F).

Operations of the cremator may occur for up to 16 hours per day on no more than 237 days per year. Cremator construction and operations would be required to comply with the San Joaquin Valley Air Pollution Control District's (SJVAPCD's) permits, emission limitations, and regulations, as well as any applicable state regulations. Maintenance of the cremator, including cleaning, would be performed in accordance with the manufacturer's recommendations and applicable permits.

Hazardous Waste/Chemical Storage Building

The Proposed Project would include a separate one-story building to store hazardous waste and chemical storage. This separate storage area would be approximately 264 GSF and would store two 55-gallon drums of clean ethanol and two 55-gallon drums of used ethanol. The storage building would comply with required hazardous materials containment protocols, including secondary containment, per 2019 California Building Code or current building code.

Other Improvements

Parking Areas: The Proposed Project site would have a parking area for staff and visitors with approximately 70 spaces, as well as a secured parking area with approximately 12 spaces for CDFA and CAHFS vehicles, livestock trailers, and equipment. The parking spaces would generally be located adjacent to the front of the building and would be surfaced with asphalt paving.

Fencing: The Proposed Project site would have a maximum 8-foot-high perimeter security fence with access-controlled vehicle gates. The vehicle gates would be set back from Dianne Drive to provide a driveway where a vehicle may wait for the gates to open without queuing on Dianne Drive. The fencing would be a combination block wall (on the south and east sides) and wrought iron fencing (on the north and west sides).

Exterior Lighting: Exterior lighting would be installed throughout the site for security purposes; lighting would be located along the site perimeter and would be directed downward and shielded to reduce light dispersion. Entrances would have brighter lighting levels than the parking areas and site areas.

Sidewalk and Street Improvements: At present, there are no sidewalks or curbs along Dianne Drive adjacent to the Proposed Project site. Along Dianne Drive, the Proposed Project would

include a full upgrade of the east side of Dianne Drive along the full 670-foot length of site frontage, including new curbs, gutters, and sidewalks. The Proposed Project would include resurfacing the asphalt pavement in front of the Proposed Project site from the face of the gutter for an approximate width of 32 to 34 feet, approximately half of the road width. Any potential entrance into the site from Dianne Drive would be located at least 300 feet north of the centerline of the future extension of West Canal Drive.

In addition to the improvements on Dianne Drive, the Proposed Project would include development of a new access driveway and a fire truck access aisle. The access driveway would primarily be used for animal deliveries and CDFA trucks and would extend along the north boundary of the Proposed Project site. The total area of the access driveway would be approximately 76 feet by 400 feet. The fire truck access aisle would allow access by emergency vehicles to the entire Proposed Project site.

Utilities and Stormwater Drainage: Utilities that support the existing site's agricultural irrigation needs would be demolished as part of the Proposed Project development. Utilities to support the Proposed Project are available, with the exception of stormwater drainage, and located along Dianne Drive. Specific locations of the points of connection for each utility type are not known at this time, but likely connection points are along the western boundary of the site and within the Dianne Drive right-of-way. The Proposed Project would not connect to the City's stormwater drainage system; instead, stormwater runoff would be retained on site. All utilities are assumed to be located underground in accordance with the City of Turlock requirements, with the exception of select potential utility options as described below. All utilities would be sited to avoid conflicts with any existing utilities.

ES.3.2 Construction Activities

Site Preparation and Earthwork

Site preparation would include clearing and grubbing, grading, excavation, importing and placing fill, and compacting the fill and other materials. Clearing and grubbing of the site, including the potential removal of all onsite vegetation, would be conducted using bulldozers, standard excavators, and hand labor. All demolished material and debris would be disposed of at an appropriate location selected by the construction contractor. For the purposes of this analysis, the disposal site is presumed to be located within 1 hour of travel time from the site.

To the extent feasible, excavated soil would be reused on site. Excavation would occur at depths ranging from approximately 3-4 feet for the main facility and up to 40 feet for the basement area of the cremator. Excavation of the basement would generate approximately 4,000 cubic yards (cy) of fill materials that would be redistributed on site. No additional fill material is anticipated; any required fill would be generated on site from the basement excavation. Fill material would be placed with an excavator and compacted with a compactor/roller. Based on the soil conditions at the site and the area of disturbance for the

Proposed Project site, the total estimated material and/or soil to be used for landscaping berms would be approximately 2,000 cy.

Fencing

The Proposed Project site would be fenced for safety and security. Fencing would involve construction of a maximum 8-foot-high perimeter security fence with access-controlled vehicle gates. The fencing would be a combination block wall (on the south and east sides) and wrought iron fencing (on the north and west sides).

Decommissioning of the Existing Facilities

Prior to occupying the Proposed Project site, CDFA and CAHFS would remove from the existing CAHFS Turlock Laboratory site and CDFA offices all manufactured material that is unaffixed to the existing sites. The existing laboratory facility would be decommissioned to allow for future use as a State-owned surplus building. If the State determines that there is no other State use for the property, the property would be included in the annual omnibus surplus legislation and, upon enactment, could be sold pursuant to California Government Code Section 11011 *et seq*.

Construction Schedule

Design and construction of the Proposed Project is anticipated to last for approximately 30 months, potentially beginning in 2022 and ending in 2025. Within this 30-month timeframe, construction work that involves the use of operating equipment would be performed within a 22-month period. Construction activities would typically be performed Monday through Friday between 7 a.m. and 5 p.m. After-hours work and work on Saturdays, Sundays, and State holidays would be permitted at the discretion of the State of California.

Design-Build Method

The Proposed Project would be delivered via the design-build method of project delivery. As such, total improved site development details, which include building elevations, landscaping, access driveway, parking area, and other project specific facility details are not known at this time and would be determined once the design-build team is selected.

In design-build, a Criteria Architect (or Master Architect) develops performance criteria to establish the building's design characteristics, such as maximum square footage; design mandates, such as solar panels and USGBC LEED certification; facilities required by anticipated building tenants, such as sufficient office space and features; and minimum parameters to meet maintenance and functionality requirements. The selected design-build team then prepares detailed design plans and specifications that meet the performance criteria.

The analysis in this EIR relies, in part, on information from the performance criteria prepared by the Criteria Architect team.

ES.3.3 Proposed Project Operations

Employees and Vehicle Equipment Use

The Proposed Project facility would be staffed at a level similar to the existing CAHFS Turlock Laboratory and CDFA field offices, with a typical Monday-through-Friday work schedule. The facility is projected to have 56 employees comprising 29 CAHFS staff members and 27 CDFA personnel. Field personnel would not commute daily to the office. On average, CDFA field staff would travel a total of 111 vehicle miles each day. For non-field CDFA staff from the Stockton MDFS office, the average and total daily vehicle miles traveled to the Proposed Project site would be 81 and 1,054 miles, respectively. For non-field staff from the Modesto AHB office, the average and total daily vehicle miles traveled to the Proposed Project site would be similar to existing conditions at 27 and 320 miles, respectively. For staff from the existing CAHFS Turlock Laboratory, the average vehicle miles traveled to and from the new Proposed Project site would be approximately the same as for the existing CAHFS Turlock Laboratory due to the proximity of the new site to the existing laboratory site, but would increase incrementally based on the increased number of personnel who would be employed at the new office. **Table ES-1** compares the number of employees associated with the existing and proposed facilities.

Table ES-1. Existing and Proposed Staffing Levels

Existing CAHFS or CDFA Office	Existing Staff	Proposed Staff under Proposed Project
CAHFS Turlock Laboratory	17	29
CDFA Animal Health Branch (Modesto)	14	14
CDFA Milk and Dairy Food Safety Branch (Stockton)	13	13
Total Combined Staff	**44**	**56**

Facility Operation

Operation of the Proposed Project facility would require periodic deliveries of laboratory-related chemicals and cleaning products, office supplies, and other equipment. Hazardous materials stored on site would be transported approximately quarterly to an appropriate local hazardous waste facility for disposal or recycling. In addition, animal carcasses and biogenic samples would be delivered to the facility through walk-in deliveries and/or shipping. It is estimated that the facility would perform necropsies on an annual average of approximately 254 cattle, 124 swine, 83 sheep, 68 goats, and 68 horses. These animals/animal specimens would be delivered to a designated loading dock and immediately processed at the laboratory following the designated

protocols in accordance with laboratory BSL-2 safety requirements. Following drop-offs of animal specimens, delivery trucks would use the truck rinse prior to exiting the site to decontaminate the vehicle and prevent cross-contamination onto other vehicles entering the site as needed.

Other operations by CDFA staff from the consolidated field offices would continue similar to the existing operations at those facilities.

ES.4 RESPONSIBLE AND TRUSTEE AGENCIES

Under CEQA (Pub. Res. Code Sections 21069-21070), trustee agencies are state agencies that have jurisdiction by law over natural resources affecting a project, that are held in trust for the people of the State of California. Responsible agencies are public agencies other than the lead agency that have responsibility for carrying out or approving some portion of a project.

For the Proposed Project, the California Department of Fish and Wildlife is a trustee agency with jurisdiction over fish and wildlife resources held in trust for the people of the State of California.

The following responsible agencies have been identified for the Proposed Project under CEQA:

- Central Valley Regional Water Quality Control Board – Notification under NPDES General Construction Permit, compliance with NPDES Regional Municipal Stormwater Permit
- California Department of Fish and Wildlife, Central Region – Issuance of an Incidental Take Permit, if needed
- San Joaquin Valley Air Quality Management District – Permit to Construct and Permit to Operate
- Stanislaus County Department of Environmental Resources – Medical waste generator permit

ES.5 ANTICIPATED PERMITS AND APPROVALS

Because the Proposed Project site is owned by the State, local regulations do not apply to the Proposed Project within the site. Local regulations may apply to offsite activities (e.g., connections to existing infrastructure in the public right-of-way). The anticipated permits and regulatory compliance requirements, along with the responsible or permitting agency, for the Proposed Project are described in **Table ES-2**.

Table ES-2. Applicable Permit and Regulatory Requirements

Regulatory Agency	Law/Regulation	Purpose	Permit/ Authorization Type
California Department of Fish and Wildlife, Central Region (CDFW)	California Endangered Species Act	CDFW must be consulted if the project has the potential to result in take of a state-listed species	Issuance of an Incidental Take Permit, if needed
Central Valley Regional Water Quality Control Board	Clean Water Act Section 402, Porter-Cologne Water Quality Control Act	National Pollutant Discharge Elimination System (NPDES) program regulates discharges of pollutants	Notification under NPDES General Construction Permit Compliance with NPDES Regional Municipal Stormwater Permit
San Joaquin Valley Air Quality Management District	Rules 2010 and 2201	Stationary Source Permits for emergency generator, cremator, chiller	Permit to Construct and Permit to Operate
Pacific Gas and Electric Company (PG&E)	PG&E policies and requirements	Establish compliance with utility policies	Encroachment permit and gas connection approval
Turlock Irrigation District (TID)	TID policies and requirements	Establish compliance with utility policies Confirm and comply with easement requirements along Upper Lateral No. 4	Encroachment permit and electric connection approval Easement approval and compliance
Stanislaus County Department of Environmental Resources	Medical Waste Management Act Compliance and Permits	Establish compliance with state and county medical waste regulations for use of onsite autoclaves	Medical waste generator permit
City of Turlock	City policies and requirements	Potential encroachment into City right-of-way	Encroachment permit, if necessary

Regulatory Agency	Law/Regulation	Purpose	Permit/ Authorization Type
City of Turlock	New sewer line connection	Establish sewer connections at the Proposed Project site	Conditional Sewer Use and Connection Permit
City of Turlock	City policies and requirements	Establish compliance and approval for stormwater system connection	Connection permit for stormwater, if necessary
City of Turlock	City policies and requirements	Confirm permits and approvals for road improvements	Coordination with the City and encroachment permit
City of Turlock	New water supply and fire hydrant connections	Establish water supply and fire hydrant connections at the Proposed Project site	Conditional Water Use and Connection Permit, coordination with the City

ES.6 PUBLIC INVOLVEMENT PROCESS

ES.6.1 Notice of Preparation, Initial Study, and Scoping Period

A Notice of Preparation (NOP) and Initial Study (IS) for the Proposed Project were prepared in accordance with CEQA Guidelines Section 15082 and circulated to state agencies through the Governor's Office of Planning and Research's State Clearinghouse on February 26, 2021, which initiated the public scoping period. The public review period continued for 40 days and ended on April 7, 2021.

The IS identified environmental topics for which no further analysis was needed and those that would be carried forward into the EIR. The IS/NOP was posted online, and copies were distributed to a broad range of stakeholders, including federal, State, and local regulatory agencies and jurisdictions, and property owners in the vicinity of the Proposed Project. In addition, announcements of the release of the IS/NOP, including the dates, times, and locations of a scoping meeting, were published in the *Modesto Bee* and the *Turlock Journal*. The IS/NOP is included in this DEIR in **Appendix A**, *Scoping Summary*.

To provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the scope of the EIR and the Proposed Project, a public scoping meeting was held virtually, due to the COVID-19 pandemic, during the public scoping period. CDFA conducted the scoping meeting to provide early opportunities for the public and

interested public agencies to provide input. Information about the meeting was mailed to interested parties, published in the *Modesto Bee* and the *Turlock Journal*, and posted on the project website (http://bit.ly/DGSCEQA).

The scoping meeting was held virtually via Zoom on March 16, 2021. Attendees were given an opportunity to provide verbal and written scoping comments. CDFA accepted written comments at the meeting, as well as during the 40-day scoping period. During the scoping period, four comment letters were received. These comments have been summarized and included in Appendix A. Information contained in the IS/NOP (e.g., project description and range of topics) has been refined based on the input received in public comments on the IS/NOP and is reflected in the text of this DEIR.

ES.6.2 DEIR Public Review and Comment Period

This DEIR is being circulated for a 45-day public review and comment period. The review period began on the date specified in the Notice of Availability (NOA) and will conclude 45 days thereafter. As discussed above, one public meeting will be held during this period at which oral and written comments will be received. The purpose of public circulation and the public meetings is to provide agencies and interested individuals with the opportunity to comment on or express concerns regarding the contents of this DEIR. The specific date, time, and location for this meeting will be provided in the NOA, on the project website, and through several other methods intended to notify as many potentially interested individuals, agencies, and entities as reasonably possible.

Written comments concerning this DEIR can be submitted at the public meeting described above and throughout the DEIR public review period. All comments must be received by 5:00 p.m. on the final date of public review as identified in the NOA, and directed to the name and address listed below:

Dakota Smith, Senior Environmental Planner
State of California Department of General Services
Real Estate Services Division, Project Management & Development Branch
707 Third Street, 4th Floor, MS509
West Sacramento, CA 95605
email: Dakota.Smith@dgs.ca.gov

Submittal of written comments by email would be greatly appreciated; attached documents in MS Word or PDF format are encouraged. Written comments received in response to this DEIR during the public review period will be addressed in a Response to Comments section of the Final EIR.

The NOP and DEIR can be reviewed online at the following website: http://bit.ly/DGSCEQA.

ES.7 Overview of Environmental Topics Evaluated in the DEIR

Chapters 4 through 16 of the DEIR describe the environmental resources and potential environmental impacts of the Proposed Project. Each chapter describes the existing setting and background information for the identified resource topic to help the reader understand the environmental conditions that could be affected by the Proposed Project. In addition, each chapter includes a discussion of the criteria used in determining the significance levels of the Proposed Project's environmental impacts. Finally, each chapter recommends mitigation measures to reduce, where possible, the adverse effects of significant impacts.

An IS was prepared for the Proposed Project and was circulated along with the NOP in February 2021. As evaluated in the IS, six environmental resource topics have been completely eliminated from further analysis in this DEIR based on the nature and scope of the Proposed Project activities: Aesthetics, Land Use/Planning, Population/Housing, Public Services, Recreation, and Wildfire. In addition, individual significance criteria have been eliminated from further analysis in several environmental resource topics.

Table ES-3 (at the end of this Executive Summary) provides a summary of the impacts, significance conclusions before mitigation, mitigation measures (where necessary), and significance conclusions after mitigation.

ES.8 Alternatives Considered

ES.8.1 Site Selection

Potential site locations for the Proposed Project were selected based on multiple planning, environmental, design, and engineering considerations, including, but not limited to, the following:

- Site acreage;
- Parcel shape;
- Site grade;
- Site access;
- Structural height limitations;
- Commercial vehicular traffic;
- Local jurisdictions' special requirements;
- Constraints related to adjacent properties;
- Available utilities;
- Historic uses of the site;
- Demolition/grading requirements;
- Permits/easements; and
- Potential environmental issues related to the various CEQA resource topics.

The following were considered desirable criteria for an alternate site for the CDFA Turlock North Valley Laboratory:

Site ownership and size: Sites in public ownership or having a willing seller would facilitate the real estate transactions associated with securing an alternate site. Sites must be at least 6 to 8 acres to accommodate the required CDFA laboratory facilities. Leasing property, such as at the Stanislaus County Fairground, was not considered a viable option.

Site location and access: Sites along Hwy 99 between Turlock and Livingston would best serve the northern San Joaquin Valley region and would receive preference. Site locations must be easily accessible from both agricultural uses and transportation arterial roadways.

Existing and surrounding land uses: Vacant land sites were preferred, although properties with existing structures to be demolished and sites that are part of a larger property would also be considered. To serve the laboratory facilities, the site should not be too close to urban development and should be located outside the floodplain.

Access to utilities and infrastructure: The selected site would require access to utilities and infrastructure, including electricity, natural gas, roads, and water and wastewater systems. Sites already connected to utilities were given preferred status to make the project more economically feasible to the State.

The No Project Alternative is considered as required by CEQA. In addition, the following alternatives were considered because they meet most of the Proposed Project's objectives, are feasible, and avoid or substantially reduce one or more significant impacts of the Proposed Project:

- Alternative 1: Nunes Road Site
- Alternative 2: Reduced Project

These alternatives were identified within the context of the primary environmental concerns raised during EIR scoping, the set of potentially feasible sites identified during the site selection process, and the significant impacts of the Proposed Project.

ES.8.2 No Project Alternative

Under the No Project Alternative, CDFA would not construct a new CDFA Turlock North Valley Laboratory or consolidate two AHFSS field offices to a central location, and would continue to provide services to the Northern San Joaquin Valley area from the three existing facilities in Turlock, Modesto, and Stockton. The existing CAHFS and AHFSS facilities would continue to be used for current and projected future operations despite these deficiencies. The No Project

Alternative would not achieve any of the Proposed Project's objectives but is being considered as required by CEQA Guidelines Section 15126.6(e).

Under the No Project Alternative, all of the impacts associated with the construction and operation of the Proposed Project would be avoided. No temporary construction-related impacts or long-term operational impacts would result, including significant and unavoidable impacts on Farmland. The potential for significant and unavoidable impacts from exposure to hazardous materials (potential toxins or select agents requiring higher containment than BSL-2) would continue to occur, as the existing Turlock lab is a BSL-2 facility. However, not constructing the Proposed Project would impede the ability of CDFA, CAHFS, and AHFSS to meet their operational goals and responsibilities to agricultural operations throughout the Northern San Joaquin Valley area.

ES.8.3 Alternative 1: Nunes Road Site

Alternative 1 would involve construction and operation of a replacement laboratory facility on a 10-acre property at Nunes Road and North Golden State Boulevard in Keyes, California. The conceptual site plan and facility operations would be similar to those of the Proposed Project.

Alternative 1 would eliminate the significant and unavoidable impact of the Proposed Project related to agricultural conversion; however, the site's proximity to a school site and residential development would increase potential impacts related to hazards and hazardous materials. VMT from employee commute trips could be greater compared to the Proposed Project, resulting in somewhat greater impacts on air quality, GHG emissions, and transportation.

ES.8.4 Alternative 2: Reduced Project

Alternative 2 would be located at the same property as the Proposed Project; however, the occupied area of the site would be reduced because only CAHFS facilities would be relocated to the site. The Modesto and Stockton AHSSF offices would remain at their current locations. This alternative would reduce total staffing by 27 employees, to an ultimate total of 29 employees rather than 56 employees under the Proposed Project. Eliminating the AHSSF offices would also reduce building space by approximately 4,778 ft^2 and eliminate the need for 27 employee parking spaces (4,617 ft^2). With these modifications, Alternative 2 would occupy approximately 0.72 acre less than the Proposed Project's 7.5 acres.

Under Alternative 2, the CDFA Turlock North Valley Replacement Laboratory would support CDFA's and CAHFS' programmatic and operational needs, particularly related to mammalian pathology and necropsy. However, AHFSS staff would remain at their current leased facilities in Modesto and Stockton, which would fail to remedy issues with existing leased space, provide cost savings to the State, or provide opportunities for increased collaboration among AHFSS staff and with CAHFS. This alternative would meet some of the primary goals of the project, but not all of them.

Alternative 2 would result in reduced impacts on agricultural conversion, air quality, greenhouse gas emissions, noise, and transportation (VMT). However, it would also result in increased impacts related to exposure of sensitive receptors to TACs and hazardous emissions.

ES.8.5 Environmentally Superior Alternative

Of the alternatives evaluated in detail above, Alternative 2: Reduced Project is considered the environmentally superior alternative among the alternatives (excluding the Proposed Project) carried forward for full analysis in this EIR. Alternative 2 is considered environmentally superior as it would reduce some of the environmental impacts associated with implementing the Proposed Project, including reducing the extent of a significant and unavoidable impact on agricultural resources. It would achieve the Proposed Project's objectives with regard to the CAHFS laboratory replacement but would not meet objectives related to AHFSS office consolidation. Alternative 2 would reduce air quality, GHG, and transportation impacts related to VMT because fewer employees would be commuting to the site; it would also reduce the amount of agricultural land converted to non-agricultural uses, although this impact would remain significant and unavoidable. Alternative 2 would not reduce or avoid the significant and unavoidable impact of exposure to hazardous materials and would continue to result in exposure of sensitive receptors to TACs. In addition, shifting the site closer to sensitive receptors could result in the SJVAPCD being unable to permit the cremator. In summary, Alternative 2 would offer the most reductions in environmental impacts among the alternatives considered.

ES.9 Areas of Known Controversy

Section 15123(b)(2) of the CEQA Guidelines requires that the summary of an EIR identify areas of controversy known to the lead agency, including issues raised by agencies and the public. No aspects of the Proposed Project or its potential effects are expected to be controversial.

ES.10 Issues to Be Resolved

Section 15123(b) of the CEQA Guidelines requires that an EIR summary identify issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects of a proposed project. No issues were identified that require resolution.

ES.11 Significant and Unavoidable Impacts

The following impacts have been identified as being significant and unavoidable for the reasons described below:

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use. The Proposed Project would convert approximately 7.5 acres of the 27-acre Prime Farmland parcel to non-agricultural uses by constructing the proposed laboratory facilities. Following construction, the Proposed Project's laboratory operations would support agriculture but would not be considered an agricultural use. Therefore, the Proposed Project would temporarily and permanently convert Prime Farmland, a potentially significant impact.

Stanislaus County has established the FMP to provide mitigation options regarding agricultural conversion. However, the FMP guidelines do not apply to the Proposed Project because only residential development project are eligible for that program. Therefore, the FMP guidelines do not apply to the Proposed Project and this mitigation option is not available to CDFA.

To help mitigate the severity of the significant impact, CDFA has proposed the funding of a conservation easement on Prime Farmland in consultation with the East Stanislaus Resource Conservation District, DOC, or another farmland conservation organization or agency. With implementation of **Mitigation Measure AG-1 (Fund a Conservation Easement on Prime Farmland)**, impacts to Prime Farmland would be reduced, although not to a less-than-significant level or entirely avoided, because the conservation of agricultural land would not create new farmland to offset the loss of farmland due to the Proposed Project. However, because funding of a conservation easement cannot fully offset the loss of Prime Farmland due to the Proposed Project, this impact is considered **significant and unavoidable.**

Impact HAZ-2: 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. Adherence to hazardous materials and waste transport regulations and CDFA policies and procedures would ensure that the Proposed Project does not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of most hazardous materials. However, the potential exists for the facility to encounter known and unknown biological hazards, and in particular ATDs, that may be classified as select agents or toxins. Some of these select agents or toxins are recommended to be handled by facilities with higher containment levels than BSL-2. This would create a significant hazard to the public and the environment and would be a significant impact.

Implementation of Mitigation Measure HAZ-1 (Compliance with Biosafety Regulations and Preparation of Biosafety Plans) would ensure that CDFA complies with regulations for handling, securing, and reporting any encounters of select agents or toxins but would not eliminate the potential for inadvertent exposure to these materials. Therefore, this impact is significant and unavoidable.

Table ES-3. Summary of Impacts and Mitigation Measures

Agriculture

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use	Significant and Unavoidable	Mitigation Measure AG-1: Fund a Conservation Easement on Prime Farmland	Significant and Unavoidable
Impact AG-2: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use	Less than Significant	None required	Less than Significant

Air Quality

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact AQ-1: Potential for the Proposed Project to Conflict with or Obstruct Implementation of an Applicable Air Quality Plan	Less than Significant	None required	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact AQ-2: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard	Less than Significant	None required	Less than Significant
Impact AQ-3: Potential to expose sensitive receptors to substantial pollutant concentrations	Significant	Mitigation Measure AQ-1: Implement Toxic Air Contaminant Control Measures	Less than Significant with Mitigation
Impact AQ-4: Potential for construction to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	Less than Significant	None required	Less than Significant

Biological Resources

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact BIO-1: Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species	Significant	Mitigation Measure BIO-1: Conduct Preconstruction Surveys for Nesting Birds and Implement Non-disturbance Buffer Areas Mitigation Measure BIO-2: Conduct Preconstruction Surveys for Burrowing Owls Mitigation Measure BIO-3: Burrowing Owl Avoidance Mitigation Measure BIO-4: Burrowing Owl Passive Relocation and Mitigation Mitigation Measure BIO-5: Conduct Nesting Raptor Surveys for Swainson's Hawk and White-tailed Kite Mitigation Measure BIO-6: Establish Buffers to Avoid or Minimize Impacts on Swainson's Hawk and White-tailed Kite Mitigation Measure BIO-7: Swainson's Hawk Take Authorization	Less than Significant with Mitigation

Cultural Resources

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact CR-1: Substantial adverse change in the significance of an archaeological resource	Significant	Mitigation Measure CR-1: Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for NRHP/CRHR Eligibility, and Implement Appropriate Measures for Eligible Resources	Less than Significant with Mitigation
Impact CR-2: Disturbance of any human remains, including those interred outside of formal cemeteries	Significant	Mitigation Measure CR-2: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code	Less than Significant with Mitigation

Geology, Soils, and Seismicity

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact GEO-1: Cause Damage to Facilities and Exposure of People to Hazards from Strong Seismic Events, Including Ground Shaking	Less than Significant	None required	Less than Significant
Impact GEO-2: Result in Risk to Property and Life from Expansive Soils	Less than Significant	None required	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact GEO-3: Result in Substantial Soil Erosion or Loss of Topsoil	Less than Significant	None required	Less than Significant
Impact GEO-4: Result in Subsidence, Liquefaction, or Collapse Due to Seismic Activity or an Unstable Geologic Unit or Soil	Less than Significant	None required	Less than Significant
Impact GEO-5: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature	Less than Significant	None required	Less than Significant

Greenhouse Gas Emissions and Energy

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact GHG/E-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Significant	Mitigation Measure GHG-1: Refrigerant Management, Implementation of BPS for Stationary Sources and Evaluation of GHG Reduction Measures during Design-Build Process	Less than Significant with Mitigation
Impact GHG/E-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs	Less than Significant	None required	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact GHG/E-3: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	Less than Significant	None required	Less than Significant
Impact GHG/E-4: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Less than Significant	None required	Less than Significant

Hazards and Hazardous Materials

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than Significant	None required	Less than Significant
Impact HAZ-2: 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	Significant	Mitigation Measure HAZ-1: Compliance with Biosafety Regulations and Preparation of Biosafety Plans	Significant and Unavoidable

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact HAZ-3: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	Significant	Mitigation Measure HAZ-2: Prepare and Implement a Construction Traffic Management Plan	Less than Significant with Mitigation

Hydrology and Water Quality

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact HYDRO-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality	Less than Significant	None required	Less than Significant
Impact HYDRO-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	Less than Significant	None required	Less than Significant
Impact HYDRO-3: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	Less than Significant	None required	Less than Significant

Mineral Resources

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	Less than Significant	None required	Less than Significant

Noise

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact NOI-1: Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	Significant	Mitigation Measure NOI-1: Implement Noise-reducing BMPs during Construction Activities within 260 Feet of Residences	Less than Significant with Mitigation
Impact NOI-2: Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	Less than Significant	None required	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact NOI-3: Generation of excessive groundborne vibration or groundborne noise levels	Significant	Mitigation Measure NOI-2: Implement Vibration-reducing BMPs during Construction Activities	Less than Significant with Mitigation

Transportation

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact TRANS-1: Conflict or inconsistency with CEQA Guidelines Section 15604.3(b)	Less than Significant	None required	Less than Significant

Tribal Cultural Resources

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact TCR-1: Potential for a substantial adverse change to tribal cultural resources listed, or eligible for listing in the California Register of Historical Resources or a local register of historical resources	No Impact	None required	No Impact

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact TCR-2: Potential for a substantial adverse change to tribal cultural resources determined by the lead agency to be significant	Significant	Mitigation Measure CR-1: Immediately Halt Construction if Cultural Resources are Discovered, Evaluate All Identified Cultural Resources for NRHP/CRHR Eligibility, and Implement Appropriate Measures for Eligible Resources Mitigation Measure CR-2: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code	Less than Significant with Mitigation

Utilities

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact UTL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects	Less than Significant	None required	Less than Significant

Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact UTL-2: Have insufficient water supplies to supply the project and reasonably foreseeable future development during normal, dry, and multiple dry years	Less than Significant	None required	Less than Significant
Impact UTL-3: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments	Less than Significant	None required	Less than Significant

Cumulative Impacts

Impact	Significance After Mitigation
CUM-1: Cumulative Impacts on Prime Farmland	Cumulatively Considerable

Chapter 1
INTRODUCTION

The California Department of Food and Agriculture (CDFA), with assistance from the Department of General Services – Real Estate Services Division (DGS), has prepared this Environmental Impact Report (EIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of construction and operation of the proposed CDFA Turlock North Valley Laboratory Replacement Project (Proposed Project). The Proposed Project and its location are described in depth in Chapter 2, *Project Description*. This document was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) of 1970 (as amended) and the CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 *et seq.*).

1.1 BACKGROUND AND NEED FOR THE PROJECT

1.1.1 California Animal Health and Food Safety Mission and Facility Needs

The California Animal Health and Food Safety (CAHFS) laboratory system is operated through an interagency agreement between the CDFA and the University of California, Davis, School of Veterinary Medicine (UC Davis) to provide necropsy and laboratory support for California's livestock and poultry producers. CAHFS' mission is to safeguard public health and California's agricultural industry with rapid and reliable diagnoses for animal diseases, including those that can affect humans, in livestock herds and poultry flocks. CAHFS operates in partnership with CDFA, UC Davis, veterinarians, and livestock and poultry producers to protect animal health and performance, public health, and the food supply. Livestock and poultry producers can utilize a variety of testing and diagnostic services offered by CAHFS laboratories to manage the health of their animals. The current CAHFS laboratory network consists of four facilities located at UC Davis and within the cities of Turlock, Tulare, and San Bernardino. This laboratory network serves as a critical early warning system to rapidly detect disease outbreaks so that CDFA can contain them before they spread, mitigating potentially devastating impacts to producers and the economy, and protecting human and animal health.

The existing CAHFS Turlock laboratory facility is aging and has space restrictions that limit the laboratory to accepting only avian species. CAHFS and CDFA are seeking to replace the existing Turlock laboratory with a new full-service laboratory, office, and necropsy facility to provide comprehensive services related to animal health and performance, public health, and food safety in the northern San Joaquin Valley region.

1.1.2 California Department of Food and Agriculture Mission and Facility Needs

CDFA's mission is to serve the citizens of California by promoting and protecting a safe, healthy food supply and enhancing local and global agricultural trade through efficient management, innovation, and sound science, with a commitment to environmental stewardship. To this end, CDFA's Animal Health and Food Safety Services Division (AHFSS or Division) has multiple office locations throughout the state dedicated to protecting public and animal health to ensure the safety, availability, and affordability of California's agricultural products. AHFSS protects the safety and security of meat, poultry, dairy products, and other foods of animal origin. AHFSS provides services to protect the public and animal health through prevention, detection, and eradication of livestock and poultry diseases and dairy contamination incidents. In addition, the Division protects cattle owners against loss of animals by theft, straying, or misappropriation through ongoing inspections and investigative services. AHFSS also provides services to prolong the effectiveness of antimicrobial agents by monitoring use in livestock and providing stewardship guidance. The District provides animal care oversight by ensuring that covered products sold in California are from animals meeting minimum housing standards. Finally, the Division works with the California Governor's Office of Emergency Services to support animal needs during disasters.

The replacement CDFA Turlock North Valley laboratory building would contain additional office and storage space to allow for the relocation of AHFSS staff from leased facilities at different locations to the new State-owned facility. This consolidation of resources into one permanent location would remedy issues with existing leased space, provide cost savings to the State, and provide opportunities for increased collaboration among AHFSS staff and with CAHFS. CDFA plans to relocate staff from offices in Modesto and Stockton who are responsible for livestock health and dairy product food safety and testing to the new proposed facility.

Existing Facility Background and Project Need

The existing CAHFS Turlock laboratory facility, located at 1550 North Soderquist Road in Turlock, California, supports 17 staff. The existing CDFA Turlock Laboratory facility includes a 1,080-square-foot (ft^2) office and a 4,200-ft^2 laboratory building with 20 parking spaces, comprising a total of approximately 0.9 acre (approximately 38,600 ft^2). The existing facility was constructed in 1958 and can no longer support CDFA's and CAHFS' programmatic and operational needs, particularly related to mammalian pathology and necropsy.

To improve veterinary diagnostic services and disease surveillance in the northern San Joaquin Valley region, and to consolidate State resources to better protect and promote California's agricultural industry, the existing CAHFS Turlock laboratory must be replaced. The building's age and size limitations prevent the laboratory from providing needed services to the surrounding area's many mammalian producers, including local beef and dairy producers. In addition, the existing Turlock laboratory is surrounded by residential and other urban land uses

that prevent an expansion of the facility. Due to the age, design, and space constraints of the existing facility, upgrading the existing facility to meet the needs of CDFA and CAHFS is not feasible.

Site Selection Process

Potential site locations for the Proposed Project were selected based on multiple planning, environmental, design, and engineering considerations, including (but not limited to) the following:

- Site acreage;
- Parcel shape;
- Site grade;
- Site access;
- Commercial vehicular traffic;
- Local jurisdiction special requirements;
- Constraints related to adjacent properties;
- Availability of utilities;
- Historic uses of the site;
- Demolition/grading requirements;
- Permits/easements required; and
- Potential environmental issues related to the various CEQA resource topics.

The following were considered desirable criteria for an alternate site for the CDFA Turlock North Valley Laboratory:

Site ownership and size: Sites in public ownership or having a willing seller would facilitate the real estate transactions associated with securing an alternate site. Sites must be at least 6 to 8 acres to accommodate the required CDFA laboratory facilities.

Site location and access: Sites along State Route (Hwy) 99 between Turlock and Livingston would best serve the northern San Joaquin Valley region and would receive preference. Site locations must be easily accessible from both agricultural uses and transportation arterial roadways.

Existing and Surrounding Land Uses: Vacant land sites were preferred, although properties with existing structures to be demolished and sites that are part of a larger property would also be considered. To serve the laboratory facilities, the site should not be too close to urban encroachment and located outside the floodplain.

Access to Utilities and Infrastructure: The selected site would require access to utilities and infrastructure, including electricity, natural gas, roads, and water and wastewater systems. Sites already connected to utilities were given preferred status to make the project more economically feasible to the State.

The proposed site was identified as best meeting the various site requirements within the context of the above considerations.

Chapter 18, *Alternatives Analysis,* identifies alternatives to the Proposed Project and compares the environmental impacts of those alternatives.

1.2 OVERVIEW OF CEQA REQUIREMENTS

The basic purposes of CEQA are to (14 CCR Section 15002):

- Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify the ways by which environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring implementation of feasible mitigation measures or project alternatives that would substantially lessen those significant effects on the environment.
- Disclose to the public the reasons that a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

With certain strictly limited exceptions, CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before approving or carrying out those projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with principal responsibility for approving or carrying out a project (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would result in significant environmental impacts, CEQA requires that the agency prepare an EIR that analyzes both the proposed project and a reasonable range of potentially feasible alternatives.

As described in the CEQA Guidelines (14 CCR Section 15121[a]), an EIR is an informational document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. The lead agency must also develop a plan for implementing and monitoring the success of the identified mitigation measures and carry out specific public notice and distribution steps to facilitate public involvement in the environmental review process. As an informational document used in the planning and decision-making process, an EIR is not intended to recommend either approval or denial of a project. In addition, an EIR does not expand or otherwise provide independent authority to the lead agency to impose mitigation measures or avoid project-related significant environmental impacts beyond the authority already within the lead agency's jurisdiction.

1.2.1 Intent and Scope of this Document

In proposing to conduct the various activities identified in Chapter 2, *Project Description*, of this Draft Environmental Impact Report (DEIR), CDFA proposes to carry out and approve a discretionary project subject to CEQA Guidelines Section 15378. CDFA will use the analyses presented in this DEIR, the public comments and responses to them, and the whole of the administrative record to evaluate the Proposed Project's environmental impacts and to further modify, approve, or deny approval of the Proposed Project.

1.3 CEQA PROCESS

The following discussion describes the steps in the CEQA process that have been undertaken for the Proposed Project.

1.3.1 Notice of Preparation

A Notice of Preparation (NOP) and Initial Study (IS) for the Proposed Project were prepared in accordance with CEQA Guidelines Section 15082 and circulated to state agencies through the Governor's Office of Planning and Research's State Clearinghouse on February 26, 2021, which initiated the public scoping period. The IS/NOP was distributed for review and comment to numerous federal and State agencies; departmental and public services agencies within Stanislaus County and the City of Turlock; and private property owners within 500 feet of the Proposed Project's 27-acre parcel. The private property owner mailing list was generated based on current data from the Stanislaus County Clerk's office. The public review period continued for 40 days and ended on April 7, 2021.

The IS/NOP presented general background information on the Proposed Project, the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. The IS identified environmental topics for which no further analysis was needed and those that would be carried forward into the EIR. The IS/NOP was posted online, and copies were distributed to a broad range of stakeholders, including federal, State, and local regulatory agencies and jurisdictions, and property owners in the vicinity of the Proposed Project. In addition, on February 26, 2021, an announcement of the release of the IS/NOP, including the dates, times, and locations of a scoping meeting, was published in the *Modesto Bee.* An identical announcement was also made in the *Turlock Journal* on February 27, 2021, the nearest available publication date for this newspaper, which is only published twice a week. The IS/NOP is included in this DEIR in **Appendix A**, *Scoping Summary*.

1.3.2 Scoping Comments and Meeting

To provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the scope of the EIR and the Proposed Project, a public scoping meeting was held virtually, due to the COVID-19 pandemic, during the public scoping period. CDFA conducted the scoping meeting to provide early opportunities for the public and

interested public agencies to provide input. As described above, notices of the meeting were mailed to interested parties. In addition, scoping meeting information was published in two local area newspapers, the *Modesto Bee* and the *Turlock Journal,* and on the project website (http://bit.ly/DGSCEQA) before the event to encourage attendance.

The scoping meeting was held virtually via Zoom on March 16, 2021, from 5:30 p.m. to 7:30 p.m. In addition to DGS and contractor staff, approximately seven individuals attended some portion of the scoping meeting. The meeting began with a brief presentation to provide an overview of the Proposed Project and the CEQA process. Afterward, attendees were given an opportunity to provide verbal and written scoping comments. No attendees provided comments. All of the meeting materials from the scoping meeting, including the PowerPoint presentation, have been included in this DEIR as Appendix A, *Scoping Summary*.

CDFA accepted written comments at the meeting, as well as during the 40-day scoping period. During the scoping period, four comment letters were received. These comments have been summarized and included in Appendix A. Information contained in the IS/NOP (e.g., project description and range of topics) has been refined based on the input received in public comments on the IS/NOP and is reflected in the text of this DEIR.

1.3.3 Draft EIR

CDFA has prepared this DEIR, as informed by public and agency input received during the scoping period, to disclose potentially significant environmental impacts associated with the Proposed Project. Where any such impacts are significant, the DEIR identifies and discusses feasible mitigation measures and potentially feasible alternatives that substantially reduce or avoid such effects. The public review period provides the public an opportunity to provide input to the lead agency on the DEIR.

1.3.4 Public Review and Meetings

This DEIR is currently undergoing public review for 45 days, beginning on the date specified in the Notice of Availability (NOA) of this DEIR. During this period, one public meeting will be held via Zoom. The meeting will begin with a brief overview of the Proposed Project and the analysis and conclusions set forth in the DEIR. This introductory presentation will then be followed by the opportunity for interested members of the public to provide comments regarding the Proposed Project and the DEIR. Commenters may submit oral or written comments, or both.

The date, time, and exact location of the public meeting will be published in local newspapers before the event and are included in the NOA for this DEIR.

1.3.5 Final EIR

Written and oral comments received in response to the DEIR will be addressed in a Response to Comments document which, together with the DEIR and any related changes to the substantive

discussion in the DEIR, will constitute the Final EIR. The Final EIR will, in turn, inform CDFA's exercise of its discretion as a lead agency under CEQA in deciding whether or how to approve the Proposed Project.

1.4 ORGANIZATION OF THIS DEIR

This DEIR contains the following components:

The *Executive Summary* provides a description of the issues of concern, identifies alternatives to the Proposed Project, and summarizes environmental impacts and mitigation measures.

Chapter 1, *Introduction*, describes the purpose and organization of the EIR and the preparation, review, and certification process.

Chapter 2, *Project Description*, describes the Proposed Project, including its purpose and objectives, the Project area, actions that would be taken under the Proposed Project, and related permits and approvals associated with the activity.

Chapter 3, *Introduction to the Environmental Analysis*, provides an introduction to the impact analysis conducted in this DEIR and identifies resource topic areas determined in the IS/NOP not to be affected by the Proposed Project.

Chapters 4 through 16 describe the environmental resources and potential environmental impacts of the Proposed Project. Each of these chapters describes the existing setting and background information for the resource topic area under consideration to aid the reader in understanding the conditions that could be affected by the Proposed Project. In addition, each chapter includes a discussion of the criteria used in determining the significance levels of the Proposed Project's environmental impacts, and each provides mitigation measures, if necessary, to reduce, where possible, the adverse effects of potentially significant impacts.

Chapter 17, *Other Statutory Considerations*, addresses the Proposed Project's potential to contribute to cumulative impacts, outlines the Proposed Project's potential to induce growth, and identifies significant and irreversible environmental changes that could result from the Proposed Project.

Chapter 18, *Alternatives Analysis*, describes the process by which alternatives to the Proposed Project were developed and screened, evaluates their likely environmental impacts, and identifies the environmentally superior alternative.

Chapter 19, *Report Preparers,* lists the agency and consultant staff involved in preparing this DEIR.

Chapter 20, *References*, provides a bibliography of printed references, websites, and personal communications used in preparing this DEIR.

Appendix A, *Scoping Summary*

Appendix B, *Local Laws, Regulations, and Policies*

Appendix C, *Air Quality Pollutant Emissions, Greenhouse Gas Emissions, and Energy Use Calculations*

Appendix D, *Human Health Risk Assessment and Supporting Documentation*

Appendix E, *Biological Resources Analysis Supporting Information*

Appendix F, *Archaeological Inventory Report*

Appendix G, *Noise Analysis Technical Appendix*

1.5 CEQA IMPACT TERMINOLOGY AND USE OF LANGUAGE

This DEIR uses the following terminology to describe environmental effects of the Proposed Project:

- A finding of *no impact* is made when the analysis concludes that the Proposed Project would not affect the particular environmental resource or issue.
- An impact is considered *less than significant* if the analysis concludes that no substantial adverse change in the environment would result and that no mitigation is needed.
- An impact is considered *less than significant with mitigation* if the analysis concludes that no substantial adverse change in the environment would result with the inclusion of the mitigation measures described.
- An impact is considered *significant* or *potentially significant* if the analysis concludes that a substantial adverse effect on the environment could result.
- *Mitigation* refers to specific measures or activities that would be adopted by the lead agency to avoid, minimize, rectify, reduce, eliminate, or compensate for an otherwise significant impact.
- A *cumulative impact* can result when a change in the environment would result from the incremental impacts of a project along with other related past, present, and reasonably foreseeable future projects. Significant cumulative impacts might result from impacts that are individually minor but collectively significant. The cumulative impact analysis in this DEIR focuses on whether the Proposed Project's incremental

contribution to significant cumulative impacts, when considered in combination with past, present, or probable future projects, would be cumulatively considerable.

- Because the term "significant" has a specific usage in evaluating impacts under CEQA, it is used to describe only the significance of impacts and is not used in other contexts within this document. Synonyms such as "substantial" are used when not discussing the significance of an environmental impact.

1.6 SUBMITTAL OF COMMENTS

This DEIR is being circulated for a 45-day public review and comment period. The review period began on the date specified in the NOA and will conclude 45 days thereafter. As discussed above, one public meeting will be held during this period at which oral and written comments will be received. The purpose of public circulation and the public meetings is to provide agencies and interested individuals with the opportunity to comment on or express concerns regarding the contents of this DEIR. The specific date, time, and location for this meeting will be provided in the NOA, on the project website, and through several other methods intended to notify as many potentially interested individuals, agencies, and entities as reasonably possible.

Written comments concerning this DEIR can be submitted at the public meeting described above and throughout the DEIR public review period. All comments must be received by 5:00 p.m. on the final date of public review as identified in the NOA, and directed to the name and address listed below:

Dakota Smith, Senior Environmental Planner
State of California Department of General Services
Real Estate Services Division, Project Management & Development Branch
707 Third Street, 4th Floor, MS509
West Sacramento, CA 95605
email: Dakota.Smith@dgs.ca.gov

Submittal of written comments by email would be greatly appreciated; attached documents in MS Word or PDF format are encouraged. Written comments received in response to this DEIR during the public review period will be addressed in a Response to Comments section of the Final EIR.

The NOP and Draft EIR can be reviewed online at the following website: http://bit.ly/DGSCEQA.

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Chapter 2
Project Description

2.1 OVERVIEW

This chapter describes the proposed CDFA Turlock North Valley Laboratory Replacement Project (Proposed Project) and discusses its purpose and objectives, location, proposed actions, and necessary permits and approvals.

2.2 PROJECT OBJECTIVES

The Proposed Project would relocate the existing CAHFS Turlock Laboratory facility to a new site and facility with adequate space for necropsy, laboratory, and office functions, enabling the agencies to provide full services to the livestock and poultry farmers in the region and consolidate two AHFSS field offices to a central location. The Proposed Project would provide adequate workspace, equipment storage, and vehicle parking for approximately 44 current employees assigned to this office, increasing to 56 total employees in the future.

Specific project objectives are as follows:

- Replace and relocate outdated and fragmented facilities with modern necropsy, laboratory, and office facilities and support functions on one campus that will maximize efficiencies while maintaining the safety requirements for facilities operating at biosafety level-2 (BSL-2).
- Provide improved client (i.e., local livestock and avian providers) access to veterinary diagnostic services in a relatively underserved area.
- Increase animal disease surveillance capability.
- Provide enhanced identification of potential diseases occurring in mammalian species such as beef and dairy cattle, sheep, goats, horses, and pigs in this livestock-dense region of commercial operations, small farms and ranches, and backyard animal raisers.
- Develop sufficient space and appropriate infrastructure to meet the current and evolving threats to public and animal health, such as emerging diseases, bioterrorism, and food safety.
- Incorporate advanced diagnostic technologies and equipment to meet the demand of local clients for state-of-the-art testing services.

- Improve biosecurity measures to protect employees and prevent the spread of disease agents from the laboratory.
- Implement the joint mission of harmonizing animal disease and food safety inspection and monitoring capacity for AHFSS staff, allowing for efficient emergency preparedness planning and response in a part of the state that is rich in animal agriculture.

2.3 PROJECT LOCATION AND SETTING

The Proposed Project site is located at 830 Dianne Drive, at the northeast corner of Dianne Drive and West Canal Drive in Turlock, California (**Figure 2-1**), and directly west of Hwy 99. As shown in Figure 2-1, the Proposed Project site is located approximately 0.77 mile southwest of the existing CDFA Turlock Laboratory. The site consists of an approximately 7.5-acre portion of a 27-acre parcel (Assessor Parcel Number [APN] 089-021-004-000). The parcel is generally rectangular in shape and angled to the west/east along the east boundary of the parcel adjacent to Hwy 99. The 7.5-acre site would be located in the parcel's westernmost area, farthest from Hwy 99. Access to the site is available on Dianne Drive, a two-lane road that runs along the west boundary of the parcel. The Turlock Irrigation District (TID) owns and operates an uncovered irrigation canal, TID Upper Lateral No. 4, along the southern boundary of the parcel.

The site has been owned by CDFA since March 2020. The Proposed Project site consists of level agricultural row cropland currently designated as Prime Farmland. Land uses immediately adjacent to the site are agricultural land and rural residences. Land uses east of Hwy 99 include residential and commercial development. Associated improvements at the site include buried irrigation piping and outlet structures extending across the site to the north. **Figure 2-2** shows the Proposed Project site and surrounding area.

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Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand),

Prepared by:

Horizon WATER and ENVIRONMENT

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Figure 2-1
Project Vicinity

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Basemap Sources: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors,

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Horizon WATER and ENVIRONMENT

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Figure 2-2

Aerial View of Proposed Project Area

2.4 PROPOSED PROJECT CHARACTERISTICS

The Proposed Project involves the construction and operation of a replacement CAHFS necropsy, laboratory, and office facility; new CDFA offices; and associated improvements. The preliminary conceptual site plan for the proposed CDFA Turlock North Valley Laboratory is shown in **Figure 2-3**. Note that the site plan is preliminary and conceptual; the final design for the Proposed Project may include modifications to this site plan.

The Proposed Project would include a developed area of approximately 7.5 acres (approximately 326,700 ft^2) within the approximate 27-acre site. Approximately 214,520 ft^2 (4.9 acres) of this would be impervious surfaces; the remainder of the site would be unpaved, including landscaping and stormwater management elements. The Proposed Project would include the resurfacing of approximately 27,940 ft^2 of roadway/sidewalks along Dianne Drive adjacent to the site and development of an access driveway (approximately 30,320 ft^2) along the north boundary of the site. The total impervious surface area of approximately 4.9 acres includes these roadway- and driveway-related impermeable surface areas, as well as other impervious surfaces related to the proposed structures and paved areas. These area quantities are subject to change pending the final design.

This section continues with a discussion of the facilities, construction activities, and operational activities that would be part of the Proposed Project. The section also includes an outline of proposed changes from the existing CAHFS Turlock Laboratory facility and the two CDFA branch offices, to the extent they are relevant to the environmental analysis.

2.4.1 Proposed Project Facilities

The Proposed Project would include a laboratory and office building, a cremator, staff and visitor parking areas, utility improvements, and other ancillary improvements. Descriptions of these facilities follow. Preliminary conceptual locations of Proposed Project facilities are indicated in Figure 2-3.

Structures

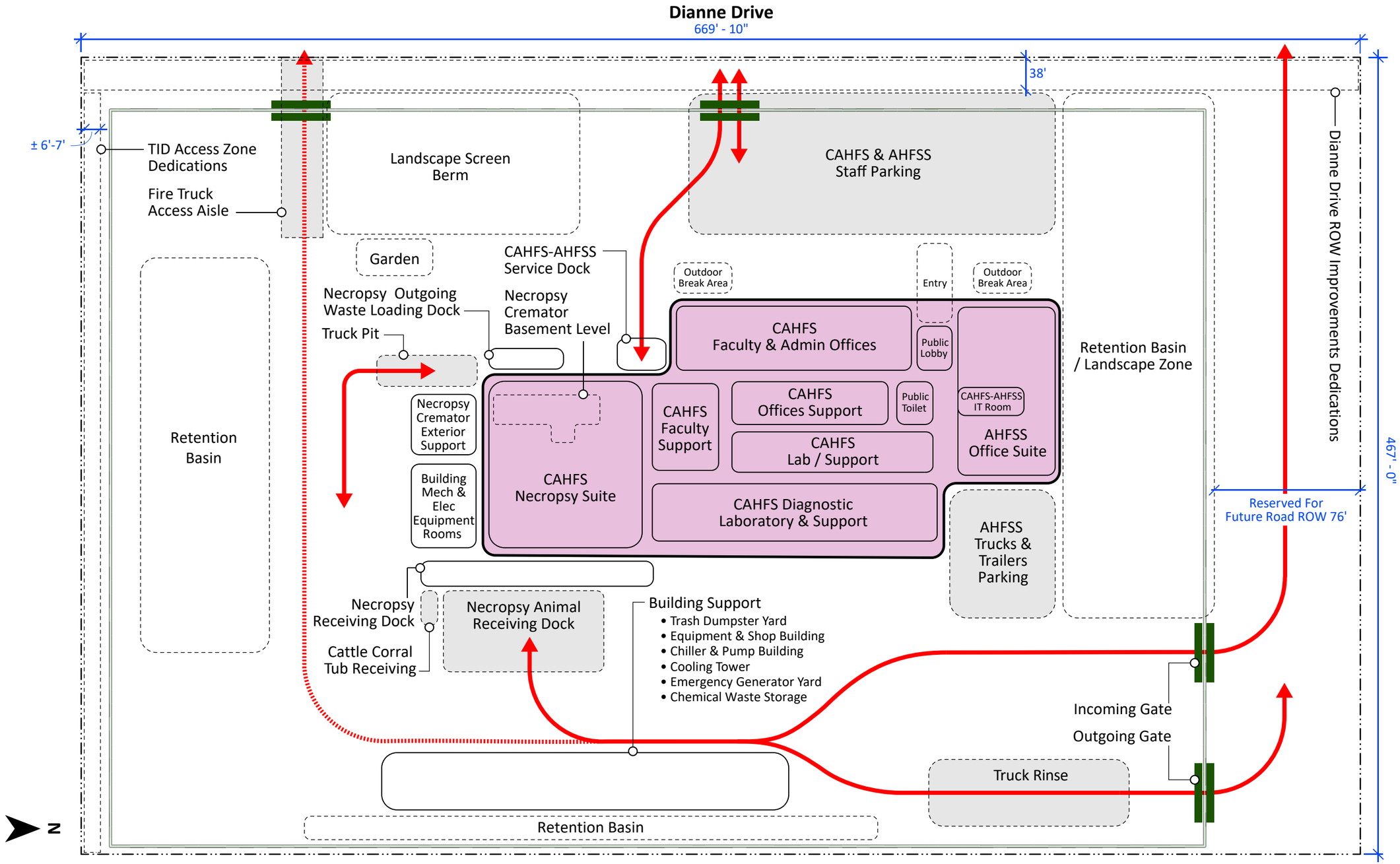
The primary feature of the Proposed Project is a laboratory and office building. Additional structures would include a possible cooling tower, chiller and pump building, hazardous waste/chemical storage area, equipment shop building, and truck rinse pit. A general description of this facility is provided below. Details of the site preparation work are provided in Section 2.4.2, “Construction Activities.”

Necropsy, Laboratory, and Office Building

The necropsy, laboratory, and office building would be a single-story building with an area ranging from approximately 33,500 gross square feet (GSF) up to 41,000 GSF. The facility would be built to meet the California Building Code (2019 or current version), California Green Code, Title 24 energy and resource standards, and achieve a U.S. Green Building Council (USGBC) Leadership in Energy & Environmental Design (LEED) Silver or higher accreditation. The USGBC grants LEED certification based on a scoring system related to impact categories such as energy, water, waste, materials, location, and transportation (USGBC 2019).

The building would include the following facilities, some of which are described in more detail below:

- offices and workstations;
- break room and conference rooms;
- large and small conference rooms;
- public lobby;
- laboratory rooms for various activities, including (but not limited to) diagnostics, pathology, histology, and bacteriology services;
- laundry room;
- men's/women's restrooms, locker rooms, and showers;
- lactation room;
- chiller and pump room;
- necropsy suite;
- cremator;
- server, communications, and technology room; and
- janitorial, mechanical, and electrical rooms.



Source: Flad Architects 2021

Prepared by: Horizon WATER and ENVIRONMENT

CAHFS/CDFA Facility
Secruity Fence
Gate
Fire Truck Access Lane
Vehicular Circulation

Figure 2-3
Conceptual Site Plan

Turlock North Valley Laboratory Replacement Project

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Laboratories

Laboratory biosafety ratings vary based on the degree of building containment and laboratory protocols required to protect human health while conducting research with particular organisms. The Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), in the current edition of the publication *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) (CDC and NIH 2020), defines four biosafety levels. Levels BSL-1 through BSL-4 apply to biohazardous materials operations in ascending order of containment and safety protocol, based on the risk posed by the organism present in the laboratory. Although these biosafety levels were originally intended to protect human health, the guidelines are also widely used to prevent the release of pathogens from laboratories.

The Proposed Project would provide laboratory space meeting current BSL-2 standards. BSL-2 is appropriate for use with biohazardous materials that are considered to be of ordinary hazard and may produce varying degrees of disease through accidental autoinoculation, ingestion, and exposure to skin or mucous membranes. For example, many hospital diagnostic labs are considered BSL-2 facilities.

The proposed CDFA Turlock North Valley Laboratory facility would include necropsy and laboratory space designed to federal and University of California BSL-2 safety standards, with office areas isolated from laboratory and animal/sample holding areas and decontamination facilities. Laboratory areas would be organized based on intended function and assumed hazard level. Individual spaces would be located within a layout that would provide multiple layers of safety measures to prevent cross-contamination or accidental exposure.

Access would be limited to authorized personnel only. Internal security features such as individual door locks and keycard access would be used to limit access to laboratory areas. Laboratory areas would be separated from areas open to the public and from other laboratory personnel who do not work within a particular zone or laboratory function by controlled access zones and decontamination areas.

All procedures in which infectious aerosols or spills could be created would be conducted in biosafety cabinets or other forms of primary containment equipment. All waste from the laboratories would be autoclaved or otherwise decontaminated prior to disposal from the facility. All waste would be disposed of in accordance with the Medical Waste Management Act of California, a project-specific Waste Management Plan, and the medical waste permits issued by the County of Stanislaus' Department of Environmental Resources.

Each lab would have a heating, ventilation, and air conditioning (HVAC) system with single-pass, 100 percent outside air flow that would not be recirculated into other building spaces, and would have negative pressurization relative to adjacent spaces. Under negative pressure, fresh air would be supplied into each laboratory space from the outside environment and be directly exhausted to the outside environment. Negative pressure would be achieved with the exhaust air flow set at a higher rate than the supply air flow rate in the room and adjacent spaces.

Consistent with federal guidelines, all windows would be sealed, breakage resistant, and inoperable to preserve the air flow balance. The layout of each laboratory would allow potential hazards to be divided into zones based on degree of hazard, with directional air flow moving from less hazardous to more hazardous zones within a space. For example, desk areas for computer use where supply air would enter the space would be considered a less hazardous zone, while a chemical fume hood laboratory where the air would be exhausted from the space would be considered more hazardous.

Cremator

A cremator would be used to dispose of some animal carcass waste as allowed by local regulations. It is anticipated that the cremator would be a vertical structure located in the basement below the proposed necropsy suite; however, as the project's design is finalized, this may be changed to a horizontal cremator located on the building's main level. The cremator would be powered by natural gas. General cremator operations would involve loading animal waste through a hatch, incinerating the waste, emitting gaseous byproducts through a stack during incineration, and disposal of the resulting ash waste.

The cremator system would include, but would not be limited to, an incinerator chamber; an ash chamber; an ash cart; and an electronic operating, data, and acquisition system. Ash would be cooled and would be disposed of using an ash cart with a lift. The cremator's operations, including temperature monitoring, would be controlled automatically through the data and acquisition system. Capacities of the cremator system would accommodate approximately 1,000 pounds per hour (lbs/hour) of animal waste material or 1,200 lbs of ash. The cremator stack would extend approximately 20 feet above the building roof. Temperatures in the cremator would be at or above 1,600 degrees Fahrenheit (°F).

Operations of the cremator may occur for up to 16 hours per day on no more than 237 days per year. Cremator construction and operations would be required to comply with the San Joaquin Valley Air Pollution Control District's (SJVAPCD's) permits, emission limitations, and regulations, as well as any applicable state regulations. Maintenance of the cremator, including cleaning, would be performed in accordance with the manufacturer's recommendations and applicable permits.

Hot Water

Hot water would be generated by an electrically powered boiler with an insulated storage tank. Domestic potable hot water would be supplied through a master tempering valve station and circulated at approximately 120°F. A high-temperature hot water system would be circulated to glass washers and laundry areas. Two domestic water heaters would be provided, as well as two laboratory water heaters.

Cooling Tower

A cooling tower would likely be installed, primarily to provide cost-effective and energy-efficient operation of the HVAC system. Based on water usage at the three cooling towers at the Tulare site, the single cooling tower at the Project site is anticipated to use an average of approximately 670 gallons per day, with peak summer usage of up to 4,000 gallons per day.

Chiller and Pump Room

A chiller and pump room are anticipated to be used to provide air conditioning to the facility. Chilled water would be provided by electric chillers located in the chiller and pump room. The chiller and pump room would be approximately 1,500 GSF. Chilled water would be piped throughout the building to provide air conditioning.

Hazardous Waste/Chemical Storage Building

The Proposed Project would include a separate one-story building to store hazardous waste and chemical storage. This separate storage area would be approximately 264 GSF and would store two 55-gallon drums of clean ethanol and two 55-gallon drums of used ethanol. The storage building would comply with required hazardous materials containment protocols, including secondary containment, per 2019 California Building Code or current building code.

Equipment Storage and Shop Building

A one-story equipment storage building would be included to store large equipment and for the repair of equipment. The total size of this building would be approximately 1,000 GSF.

Miscellaneous Site Elements

Truck Rinse Area: A truck rinse area would be used to cleanse vehicles and livestock trailers of any potential contaminants prior to leaving the site. The truck rinse area would have pit drains connecting to the sanitary sewer system with an oil and soil separator. Trench drains would be located at the entry and exit ramps to prevent the flow of rainwater into the sewer drains in accordance with California regulations. The truck rinse would be a covered, open-sided structure of approximately 3,000 GSF.

Waste Enclosure: A waste enclosure included on the site would contain several trash dumpsters and recycling bins. The waste enclosure would be approximately 300 GSF.

Boiler and Electrical Equipment Rooms: The heating and electrical equipment room would be approximately 1,345 GSF. It is anticipated that there would be three building water boilers at 0.75 MMBH each.

Heating, Ventilation, and Air Conditioning System: The HVAC system would provide fully automated and continuous space heating, ventilation, chemical fume hood and general

laboratory exhaust, and cooling to all areas of the necropsy, laboratory, and office building that would be designed for occupancy.

Generator Enclosure: The generator enclosure would contain an emergency generator, subbase fuel tank, exhaust system, cooling system, engine control systems, and miscellaneous cables and equipment to support the generator's operation. The emergency generator would be diesel fueled and have a capacity of approximately 500 kilowatts (kW). The enclosure would be weatherproof and sound attenuated.

The emergency generator would be used as a power source for the necropsy, laboratory, and office facilities, as necessary, when primary power sources fail. The generator would have a subbase fuel tank with adequate capacity to operate the generator at full load for a minimum of 8 hours. Specifically, the generator would provide backup power for all life safety systems such as the fire alarm system, facility interior lighting, security systems, supply and exhaust air systems, pumps to support building heating and cooling systems, HVAC controls, chemical fume hoods, biosafety cabinets, environmental rooms (cold rooms used to store animal carcasses), and refrigerators and freezers for storing samples in laboratory areas. The facility would also have an uninterruptible power supply unit for electronic equipment. The generator enclosure would be approximately 450 GSF.

Parking Areas: The Proposed Project site would have a parking area for staff and visitors with approximately 70 spaces, as well as a separate parking area with approximately 12 spaces for CDFA and CAHFS vehicles, livestock trailers, and equipment. The parking spaces would generally be located adjacent to the front of the building and would be surfaced with asphalt paving.

Ancillary Improvements

Fencing: The Proposed Project site would have a maximum 8-foot-high perimeter security fence with access-controlled vehicle gates. The vehicle gates would be set back from Dianne Drive to provide a driveway where a vehicle may wait for the gates to open without queuing on Dianne Drive. The fencing would be a combination block wall (on the south and east sides) and wrought iron fencing (on the north and west sides).

Fire Protection and Hydrants: Fire hydrants would be installed in accordance with the applicable requirements of the California Building Code, California Fire Code, and the City of Turlock Fire Department as the servicing agency. The building would be protected with a hydraulically calculated fire sprinkler systems; except for special protection needs, this sprinkler system would be designed as a water wet-pipe system. All areas of the building would be protected in accordance with National Fire Protection Association (NFPA) 13 standards (2019), including electrical rooms, switchgear rooms, transformer rooms, generator rooms, electrical closets, loading docks, stair towers, exterior canopies, truck rinse, and mechanical rooms.

Landscape and Irrigation: Drought-tolerant landscaping requiring minimal maintenance and an automatic irrigation system would be installed on the Proposed Project site. Plants would be

selected that are tolerant of the local climate. A 3- to 4-foot-high berm may be created on site along Dianne Drive to repurpose additional excavated soils from construction activities.

Exterior Lighting: Exterior lighting would be installed throughout the site for security purposes; lighting would be located along the site perimeter and would be directed downward and shielded to reduce light dispersion. Entrances would have brighter lighting levels than the parking areas and site areas.

Sidewalk and Street Improvements: At present, there are no sidewalks or curbs along Dianne Drive adjacent to the Proposed Project site. Along Dianne Drive, the Proposed Project would include a full upgrade of the east side of Dianne Drive along the full 670-foot length of site frontage, including new curbs, gutters, and sidewalks. The Proposed Project would include resurfacing the asphalt pavement in front of the Proposed Project site from the face of the gutter for an approximate width of 32 to 34 feet, approximately half of the road width. Any potential entrance into the site from Dianne Drive would be located at least 300 feet north of the centerline of the future extension of West Canal Drive.

In addition to the improvements on Dianne Drive, the Proposed Project would include development of a new access driveway and a fire truck access aisle. The access driveway would primarily be used for animal deliveries and CDFA trucks and would extend along the north boundary of the Proposed Project site. The total area of the access driveway would be approximately 76 feet by 400 feet. The fire truck access aisle would allow access by emergency vehicles to the entire Proposed Project site.

Utilities and Stormwater Drainage

Utilities: Utilities that support the existing site's agricultural irrigation needs would be demolished as part of the Proposed Project development. Utilities to support the Proposed Project are available and located along Dianne Drive. Specific locations of the points of connection for each utility type are not known at this time but likely connection points are along the western boundary of the site and within the Dianne Drive right-of-way. Design and construction of utility installation activities is described below and in Section 2.4.2, "Construction Activities." These areas are analyzed in this EIR. All utilities are assumed to be located underground in accordance with the City of Turlock requirements, with the exception of select potential utility options as described below. All utilities would be sited to avoid conflicts with any existing utilities.

Water: A water pipeline would be installed to connect to the existing City water main in Dianne Drive. The water line would extend approximately 100 feet to the proposed facility. A reduced pressure backflow preventer would be included to protect the domestic water supply.

Sewer: A sewer pipeline would be installed to connect the Proposed Project site to the existing City of Turlock sewer main located in Dianne Drive. The sewer line would extend approximately 100 feet to the proposed facility.

Gas: Natural gas is anticipated to be a centrally piped and distributed system to serve the cremator as required. Natural gas would be extended to the building from the Pacific Gas and Electric Company (PG&E) natural gas main located in Dianne Drive (Williams pers. comm.). It is anticipated that the gas meter would be located at grade at the service entrance to the building. The gas line would extend approximately 100 feet to the proposed facility.

Electrical: New electrical lines would be constructed to provide electricity to the proposed facility. The existing electrical lines are located on aboveground poles along the west side of Dianne Drive and along the north side of the TID Upper Lateral No. 4 canal. Electrical service to the Project site would be delivered via underground conduit in accordance with City of Turlock requirements. The electrical lines would extend approximately 150 feet to the proposed facility.

Phone/Internet/Cable: The existing communication lines are located on aboveground poles along the east side of Dianne Drive. Communication service to the Project site would be delivered via underground conduit in accordance with City of Turlock requirements. The communication lines would extend approximately 100 feet to the proposed facility.

Stormwater Drainage: Site runoff would be managed and discharged according to Water Quality Order No. 2013-0001-DWQ, Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4 A stormwater retention system would be constructed on the Proposed Project site and would be sized to retain all stormwater on site. A 60-inch storm drain line located in Dianne Drive adjacent to the Proposed Project site flows south and discharges to the detention basin south of TID Upper Lateral No. 4. The Office of the City Engineer has stated that this line “has been known to surcharge during heavy rain events” and currently has no additional capacity (Bray pers. comm. 2021). Therefore, the Proposed Project would retain all stormwater on-site. **Table 2-1** lists anticipated utility service agencies that would serve the Proposed Project.

Table 2-1. Local Utility Agencies in the Project Area

Utility Service	Utility Agency
Water Supply	City of Turlock
Sanitary Sewer	City of Turlock
Stormwater Management	City of Turlock / State of California
Electrical Service	Turlock Irrigation District
Natural Gas Service	Pacific Gas and Electric Company
Data and Phone Service	AT&T
Fire Protection Service	City of Turlock

2.4.2 Construction Activities

Construction Methods

Site Preparation and Earthwork: Site preparation would include clearing and grubbing, grading, excavation, importing and placing fill, and compacting the fill and other materials. Clearing and grubbing of the site, including the potential removal of all onsite vegetation, would be conducted using bulldozers, standard excavators, and hand labor. All demolished material and debris would be disposed of at an appropriate location selected by the construction contractor. For the purposes of this analysis, the disposal site is presumed to be located within 1 hour of travel time from the site.

To the extent feasible, excavated soil would be reused on site. Excavation would occur at depths ranging from approximately 3-4 feet for the main facility and up to 40 feet for the basement area of the cremator. Excavation of the basement would generate approximately 4,000 cubic yards (cy) of fill materials that would be redistributed on site. No additional fill material is anticipated to be brought to the site; any required fill would be generated on site from the basement excavation. Fill material would be placed with an excavator and compacted with a compactor/roller. Based on the soil conditions at the site and the area of disturbance for the Proposed Project site, the total estimated material and/or soil to be used for landscaping berms would be approximately 2,000 cy. The anticipated number of potential worker and construction-related trips for each construction phase are provided in **Table 2-2**.

Table 2-2. Worker and Construction Trips during Construction

Construction Phase	Worker Trips	Vendor Trips	Hauling Trips	Total Trips by Construction Phase
Site Preparation	20	4	0	528
Grading	15	4	0	817
Construction	85	35	250	59,640
Paving	20	0	0	860
Coating	17	0	0	731

Buildings and Structures: Construction of buildings and structures would include the following activities:

- Rough grading, site preparation, and excavation for foundation systems and the cremator basement;
- Concrete forming and placement of rebar for foundations;

- Delivery of concrete for foundations, basement, and potentially concrete tilt-up walls;
- Delivery and erection of structural steel;
- Delivery and installation of mechanical, electrical, plumbing, fire sprinkler, fire alarm, and communication systems;
- Delivery and installation of exterior and interior architectural finish systems, including laboratory casework and equipment; and
- Finish grading and landscape installation.

Pipelines and Underground Utility Equipment: Drainage, water supply, and wastewater pipelines and underground utilities generally would be installed in open trenches using conventional cut-and-cover construction techniques. The first step in the construction process would be surface preparation, including the removal of any structures, pavement, or vegetation from the surface of the trench area using jackhammers, graders, pavement saws, mowing equipment, bulldozers, front-end loaders, and/or trucks. A backhoe, track-mounted excavator, or similar equipment would then be used to dig trenches for pipelines or underground utility equipment. The width of the trench would generally vary between 3 and 6 feet, with a depth of at least three times the pipeline diameter. The diameter of pipelines would vary based on service flow requirements, material type, and purpose. It is estimated that trenching for each utility infrastructure (water, sewer, stormwater, gas, electrical, and phone/internet/cable) would be approximately 100 to 150 linear feet, as discussed above.

In most locations, trenches would likely have vertical sidewalls to minimize the amount of soil excavated and the area required for construction easement. Soil excavated from the trench would be stockpiled alongside the trench or in staging areas for later reuse in backfilling the trench or for fill at other onsite locations, if appropriate. Native soil would be reused for backfill to the greatest extent possible; however, it may not have the properties necessary for compaction and stability. If not reusable, the soil would be hauled off site for disposal at an appropriate disposal site (assumed to be within 1 hour travel time from the Proposed Project site).

The final step in the installation process would be restoring the ground surface. Site restoration would generally involve installing pavement, landscaping, and/or erosion controls, as necessary. This phase would include sidewalk and street resurfacing improvements along the Proposed Project site frontage on Dianne Drive.

Electrical Utilities Connections: Proposed new electrical connections for the Proposed Project would be installed in open trenches using the techniques described above. These new electrical lines would then be connected to the existing aboveground electrical system infrastructure adjacent to the site.

Construction Equipment

The main pieces of equipment that might be used are as follows:

- track-mounted excavator
- medium crane
- end dump truck
- 10-wheel dump truck
- paving equipment
- flat-bed delivery truck
- concrete truck
- grader
- bulldozer
- backhoe
- compactor
- front-end loader
- water truck
- forklift
- compressor/jack hammer
- boom truck
- mowing and weed removal equipment
- generator (temporary)

Fencing

The Proposed Project site would be fenced for safety and security. Fencing would involve construction of a maximum 8-foot-high perimeter security fence with access-controlled vehicle gates. The vehicle gates would be set back from Dianne Drive to provide a driveway where a vehicle may wait for the gates to open without queuing on Dianne Drive. The fencing would be a combination block wall (on the south and east sides) and wrought iron fencing (on the north and west sides).

Decommissioning of the Existing Facilities

Prior to occupying the Proposed Project site, CDFA and CAHFS would remove from the existing CAHFS Turlock Laboratory site and CDFA offices all manufactured material that is unaffixed to the existing sites. The existing laboratory facility would be decommissioned to allow for future use as a State-owned surplus building. If the State determines that there is no other State use for the property, the property would be included in the annual omnibus surplus legislation and, upon enactment, could be sold pursuant to California Government Code Section 11011 *et seq*.

Construction Schedule

Design and construction of the Proposed Project is anticipated to last for approximately 30 months, potentially beginning in 2022 and ending in 2025. Within this 30-month timeframe, construction work that involves the use of operating equipment would be performed within a 22-month period. Construction activities would typically be performed Monday through Friday between 7 a.m. and 5 p.m. After-hours work and work on Saturdays, Sundays, and State holidays would be permitted at the discretion of the State of California.

Design-Build Method

The Proposed Project would be delivered via the design-build method of project delivery. As such, total improved site development details, which include building elevations, landscaping, access driveway, parking area, and other project specific facility details are not known at this time and would be determined once the design-build team is selected.

In design-build, a Criteria Architect (or Master Architect) develops performance criteria to establish the building's design characteristics, such as maximum square footage; design mandates, such as solar panels and USGBC LEED certification; facilities required by anticipated building tenants, such as sufficient office space and features; and minimum parameters to meet maintenance and functionality requirements. The selected design-build team then prepares detailed design plans and specifications that meet the performance criteria.

The analysis in this EIR relies, in part, on information from the performance criteria prepared by the Criteria Architect team.

2.4.3 Existing and Proposed Operations

Existing Operations—CAHFS Turlock Laboratory

The existing CAHFS Turlock Laboratory facility at 1550 North Soderquist Road includes a 1,080-ft^2 office and 4,200-ft^2 laboratory building with 20 parking spaces, comprising a total of approximately 0.9 acre (approximately 38,600 ft^2). The site does not include an emergency generator. The existing CAHFS Turlock Laboratory currently provides avian necropsy, histopathology, bacteriology, biotechnology, parasitology, and serology testing on site. This facility has 17 employees and operates during normal business hours, from 8 a.m. to 5 p.m., Monday through Friday. However, at the discretion of the on-call diagnostician, submissions of samples or animals may be accepted after hours or on weekends.

Animals and other samples are delivered via courier (United Parcel Service/Federal Express/Golden State Courier Service) and by walk-in clients. An average of 4.2 walk-in submissions take place each business day (approximately 21 walk-in submissions per week), which are processed on site or shipped to other CAHFS branch laboratories. Other trips associated with the operation of the existing facility include weekly trips for waste disposal, linen delivery and pickup, and employee supplies; quarterly chemical waste pickup; and miscellaneous vendor deliveries/trips.

Hazardous Materials and Waste

Various chemicals and other hazardous materials are used at the existing CAHFS Turlock Laboratory; these generally include laboratory chemicals, biogenic materials, industrial-grade solvents and cleaners, and other evaporative compounds. All hazardous chemicals and materials are stored, handled, transported, and disposed of in accordance with local, State, and

federal regulations. The following hazardous chemicals and materials are used at the existing facility:

Gram's iodine solution
Malachite Green chloride
Bleach
Potassium hydroxide solution
Iron (III) chloride
Methanol
Hydrogen peroxide
Sodium phosphate dibasic
Acetone
Potassium borohydride
Tris base
Bacdown Detergent Disinfectant
Sodium phosphate monobasic
Carbol-fuchsin solution
Tris-Acetate-EDTA (TAE) buffer solution
Lithium carbonate
Zinc
Agarose
Mineral oil
4-Chloro-1-naphthol
Lactophenol Blue stain solution
10% Buffered Formalin Phosphate
Bouin's solution
Hematoxylin stain solution, Gill 2 Form
Cargille Immersion Oil
Hydrochloric acid
Iodine
Tween 20
Phloxine B
Eosin Y
Methylene blue
Crystal violet
Glycerol
Gelatin
Cytoseal 60
Acetic Acid
Formalin solution
Potassium chloride
Schiff's reagent
Ethanol
Sodium chloride
Ethidium bromide
Virkon disinfectant cleaner
Isopropanol
Gram's crystal violet solution
Gram's safranin solution
Cytoseal 60
Gram's decolorizer solution
Voges Proskauer B Reagent
Proteinase K
Xylenes
Propar
Sulfanilic acid
Nitrate B Reagent
Indole Reagent-Ehrlich's
Kovac's Aldehyde Reagent
Fecasol
Carbon dioxide, gas
Sodium citrate

Cremator Operations

The existing CAHFS Turlock Laboratory uses a Goder Model 69 Pathological Cremator with a stack approximately 30 feet high. The cremator is operated in accordance with SJVAPCD's Permit to Operate (PTO) for the entire facility. Typical operation of the cremator involves one load per day, 5 days a week.

As described in Section 2.4.1 above, cremator operations generally involve loading animal waste through a hatch, incinerating the waste, emitting gaseous byproducts through a stack during incineration, and disposing of the resulting ash waste. The cremator system can accommodate approximately 1,000 lbs/hour of animal waste material or 1,200 lbs of ash. Temperatures in the cremator reach or exceed 1,600°F during operation.

Existing Operations—CDFA Offices

The two CDFA field offices currently operating, which would be relocated to the Proposed Project site, perform the following operations. **Figure 2-4** provides the locations of these two existing offices in relation to the existing CAHFS Turlock Laboratory.

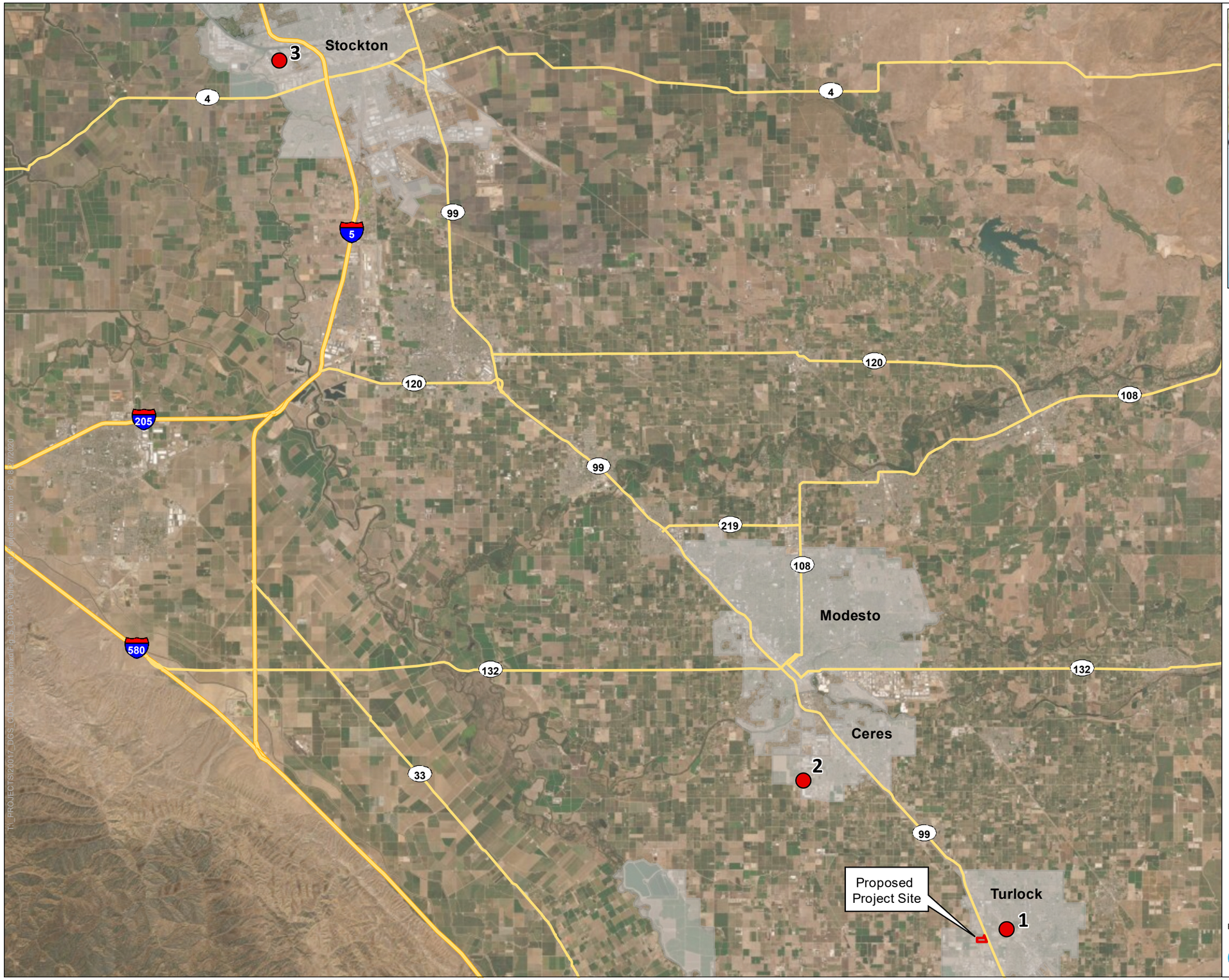
The Animal Health Branch (AHB) Modesto District Office of the AHFSS is located in a leased property at the Stanislaus County Agricultural Center – Tuolumne Building, 3800 Cornucopia Way, Suite F, in Modesto. Operational hours for this site are Monday through Friday, 8 a.m. to 5 p.m. This facility has 14 employees, 12 of whom are field staff who do not commute to the office regularly.

The Stockton Regional Office of the Milk and Dairy Food Safety (MDFS) Branch, AHFSS is located in a leased property at 2403 West Washington Street, Room 10, in Stockton. Operational hours for this site are Monday through Friday, 8 a.m. to 5 p.m. This facility has 13 employees, 11 of whom are field staff who do not commute to the office regularly.

Proposed Project Operations

Employees and Vehicle Equipment Use

The Proposed Project facility would be staffed at a level similar to the existing CAHFS Turlock Laboratory and CDFA field offices, with a typical Monday-through-Friday work schedule. The facility is projected to have 56 employees comprising 29 CAHFS staff members and 27 CDFA personnel. Field personnel would not commute daily to the office. On average, CDFA field staff would travel a total of 111 vehicle miles each day. For non-field CDFA staff from the Stockton MDFS office, the average and total daily vehicle miles traveled to the Proposed Project site would be 81 and 1,054 miles, respectively. For non-field staff from the Modesto AHB office, the average and total daily vehicle miles traveled to the Proposed Project site would be similar to existing conditions at 27 and 320 miles, respectively. For staff from the existing CAHFS Turlock Laboratory, the average vehicle miles traveled to and from the new Proposed Project site would be approximately the same as for the existing CAHFS Turlock Laboratory due to the proximity of the new site to the existing laboratory site, but would increase incrementally based on the increased number of personnel who would be employed at the new office. **Table 2-3** compares the number of employees associated with the existing and proposed facilities.



Proposed Project Site

Existing CDFA Offices

CDFA Office*

*List of offices:

1. CDFA Turlock Laboratory
2. Modesto District Office (Animal Health Branch)
3. Stockton Regional Office (Milk and Dairy Food Safety Branch)

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Horizon WATER and ENVIRONMENT

Figure 2-4
CDFA Offices and Project Site

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Table 2-3. Existing and Proposed Staffing Levels

Existing CAHFS or CDFA Office	Existing Staff	Proposed Staff under Proposed Project
CAHFS Turlock Laboratory	17	29
CDFA Animal Health Branch (Modesto)	14	14
CDFA Milk and Dairy Food Safety Branch (Stockton)	13	13
Total Combined Staff	**44**	**56**

Facility Operation

Operation of the Proposed Project facility would require periodic deliveries of laboratory-related chemicals and cleaning products, office supplies, and other equipment. Hazardous materials stored on site would be transported approximately quarterly to an appropriate local hazardous waste facility for disposal or recycling. In addition, animal carcasses and biogenic samples would be delivered to the facility through walk-in deliveries and/or shipping. It is estimated that the facility would perform necropsies on an annual average of approximately 254 cattle, 124 swine, 83 sheep, 68 goats, and 68 horses. These animals/animal specimens would be delivered to a designated loading dock and immediately processed at the laboratory following the designated protocols in accordance with laboratory BSL-2 safety requirements. Following drop-offs of animal specimens, delivery trucks would use the truck wash prior to exiting the site to decontaminate the vehicle and prevent cross-contamination onto other vehicles entering the site as needed.

Other operations by CDFA staff from the consolidated field offices would continue similar to the existing operations at those facilities.

2.5 RESPONSIBLE AND TRUSTEE AGENCIES

Under CEQA (Pub. Res. Code Sections 21069-21070), trustee agencies are state agencies that have jurisdiction by law over natural resources affecting a project, that are held in trust for the people of the State of California. Responsible agencies are public agencies other than the lead agency that have responsibility for carrying out or approving some portion of a project.

For the Proposed Project, the California Department of Fish and Wildlife is a trustee agency with jurisdiction over fish and wildlife resources held in trust for the people of the State of California.

The following responsible agencies have been identified for the Proposed Project under CEQA:

- Central Valley Regional Water Quality Control Board – Notification under NPDES General Construction Permit, compliance with NPDES Regional Municipal Stormwater Permit
- California Department of Fish and Wildlife, Central Region – Issuance of an Incidental Take Permit, if needed
- San Joaquin Valley Air Quality Management District – Permit to Construct and Permit to Operate
- Stanislaus County Department of Environmental Resources – Medical waste generator permit

2.6 ANTICIPATED PERMITS AND APPROVALS

Because the Proposed Project site is owned by the State, local regulations do not apply to the Proposed Project within the site. Local regulations may apply to offsite activities (e.g., connections to existing infrastructure in the public right-of-way). The anticipated permits and regulatory compliance requirements, along with the responsible or permitting agency, for the Proposed Project are described in **Table 2-4**.

Table 2-4. Applicable Permit and Regulatory Requirements

Regulatory Agency	Law/Regulation	Purpose	Permit/ Authorization Type
California Department of Fish and Wildlife, Central Region (CDFW)	California Endangered Species Act	CDFW must be consulted if the project has the potential to result in take of a state-listed species	Issuance of an Incidental Take Permit, if needed
Central Valley Regional Water Quality Control Board	Clean Water Act Section 402, Porter-Cologne Water Quality Control Act	National Pollutant Discharge Elimination System (NPDES) program regulates discharges of pollutants	Notification under NPDES General Construction Permit Compliance with NPDES Regional Municipal Stormwater Permit

Regulatory Agency	Law/Regulation	Purpose	Permit/ Authorization Type
San Joaquin Valley Air Quality Management District	Rules 2010 and 2201	Stationary Source Permits for emergency generator, cremator, chiller	Permit to Construct and Permit to Operate
Pacific Gas and Electric Company (PG&E)	PG&E policies and requirements	Establish compliance with utility policies	Encroachment permit and gas connection approval
Turlock Irrigation District (TID)	TID policies and requirements	Establish compliance with utility policies Confirm and comply with easement requirements along Upper Lateral No. 4	Encroachment permit and electric connection approval Easement approval and compliance
Stanislaus County Department of Environmental Resources	Medical Waste Management Act Compliance and Permits	Establish compliance with state and county medical waste regulations for use of onsite autoclaves	Medical waste generator permit
City of Turlock	City policies and requirements	Potential encroachment into City right-of-way	Encroachment permit, if necessary
City of Turlock	New sewer line connection	Establish sewer connections at the Proposed Project site	Conditional Sewer Use and Connection Permit
City of Turlock	City policies and requirements	Establish compliance and approval for stormwater system connection	Connection permit for stormwater, if necessary
City of Turlock	City policies and requirements	Confirm permits and approvals for road improvements	Coordination with the City and encroachment permit
City of Turlock	New water supply and fire hydrant connections	Establish water supply and fire hydrant connections at the Proposed Project site	Conditional Water Use and Connection Permit, coordination with the City

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Chapter 3
Introduction to the Environmental Analysis

3.1 Overview

Chapters 4 through 16 of this DEIR describe the environmental resources and potential environmental impacts of the Proposed Project. Each chapter describes the existing setting and background information for the identified resource topic to help the reader understand the environmental conditions that could be affected by the Proposed Project. In addition, each chapter includes a discussion of the criteria used in determining the significance levels of the Proposed Project's environmental impacts. Finally, each chapter recommends mitigation measures to reduce, where possible, the adverse effects of significant impacts.

3.2 Significance of Environmental Impacts

According to CEQA, an EIR should define the thresholds of significance and explain the criteria used to determine whether an impact is above or below that threshold. Significance criteria are typically identified for each environmental resource topic to determine whether implementation of the project would result in a significant environmental impact when evaluated against the baseline conditions described in the environmental setting. The significance criteria vary depending on the environmental resource topic. In general, effects can be either significant (above threshold) or less than significant (below threshold). In some cases, a significant impact will be identified as significant and unavoidable if no feasible mitigation is available to reduce the impact to a less-than-significant level. If a project is subsequently adopted despite identified significant impacts that would result from the project, CEQA requires the lead agency to prepare and adopt a statement of overriding considerations describing the social, economic, and other reasons for moving forward with the project despite its significant impacts.

3.3 Baseline Conditions

Under CEQA, the environmental setting or "baseline" serves as a gauge against which to assess changes to existing physical conditions that would occur as a result of a proposed project. According to CEQA Guidelines Section 15125 (14 CCR Section 15125), for purposes of an EIR, the environmental setting is normally the physical conditions in and around the vicinity of the proposed project as those conditions exist at the time the NOP is published. This DEIR for the CDFA Turlock North Valley Laboratory Replacement Project uses this definition of the baseline.

3.4 TOPICS AND CRITERIA ELIMINATED FROM FURTHER ANALYSIS

An IS was prepared for the Proposed Project and was circulated along with the NOP in February 2021. As evaluated in the IS, six environmental resource topics have been completely eliminated from further analysis in this DEIR based on the nature and scope of the Proposed Project activities: Aesthetics, Land Use/Planning, Population/Housing, Public Services, Recreation, and Wildfire. In addition, individual significance criteria have been eliminated from further analysis in several environmental resource topics. The reasons for eliminating these resource topics and significance criteria are summarized below from the IS.

3.4.1 Aesthetics

The Proposed Project site is an approximately 7.5-acre portion of an approximately 27-acre parcel at the northeast corner of Dianne Drive and West Canal Drive. The Proposed Project site is flat and consists of agricultural land that is currently fallow and tilled. The only structure on the site is irrigation infrastructure along the southern boundary of the parcel closer to Hwy 99 and adjacent to TID Upper Lateral No. 4. Areas to the west of Dianne Drive include rural residences and associated outbuildings, such as barns and sheds, as well as fencing of varying heights, colors, and materials. Scattered mature trees are in front of these residences. The eastern side of Dianne Road consists of scattered low-growing shrubs, brown dirt, and the tilled agricultural field. Tall, brown wood poles with multiple overhead electrical lines are along both the east and west sides of Dianne Drive. An orchard is present in the background, north of the Proposed Project site.

Project construction would be temporary and the site is not located within a scenic vista; therefore, construction of the Proposed Project would result in **no impact** to a scenic vista. Similarly, because the Proposed Project site is not visible from any officially designated or eligible state scenic highway, the Proposed Project would not adversely affect views from a state scenic highway and **no impact** on scenic resources would occur.

The size and mass of the laboratory and office building would be similar in size and mass to commercial, office, and industrial uses in the surrounding area, including buildings along North Walnut Road and at the intersection of Dianne Drive and Fulkerth Road. Views of the Proposed Project site for motorists on Dianne Drive are not visually prominent or scenic. Because the overall visual quality of the Proposed Project site and surrounding area is considered to be low, the Proposed Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings; therefore, the impact of the Proposed Project on the existing visual character or quality would be **less than significant**.

Exterior lighting would be installed throughout the site for security purposes. Lighting along the site perimeter would be shielded and directed downward to reduce light pollution. Light associated with the Proposed Project would be similar to other light sources at commercial, office, and industrial uses in the surrounding area, including those buildings along North Walnut Road and at the intersection of Dianne Drive and Fulkerth Road. The Proposed Project's design

is conceptual at this point and would be finalized following completion of the CEQA process. However, the Proposed Project's exterior would be designed to minimize glare and may incorporate non-reflective material that would minimize the transmission of glare, such as stucco, non-glazed brick, or masonry. Therefore, the Proposed Project would not generate a substantial new source of light and glare that adversely affects day or nighttime views in the area. Thus, the Proposed Project's impacts related to light and glare would be **less than significant**.

3.4.2 Agricultural and Forestry Resources

The Proposed Project is located on non-enrolled land and is, therefore, not under Williamson Act contract. In addition, the Proposed Project site is zoned for Office Commercial uses. Therefore, the Proposed Project would have **no impact** on agricultural zoning and Williamson Act contracts.

No timberland or timberland zoned Timberland Production areas are located within or adjacent to the Proposed Project site. No commercial tree crops are grown on the Proposed Project site, and none are grown in the Proposed Project area. **No impact** would occur.

The Proposed Project site has no onsite trees or designated forest lands. The Proposed Project is not located on or near forestland or timberland. Therefore, the Proposed Project would not conflict with existing zoning for forestland or timberland or result in the loss of forest land or conversion of forest land to non-forest use. There would be **no impact**.

3.4.3 Biological Resources

The Proposed Project site is a portion of an agricultural field. Ruderal vegetation occurs along the northern, eastern, and western borders of the site as well as on some portions of the site. A detention basin is located to the south of the site, an orchard to the north, residences to the west, and Hwy 99 to the east. No riparian habitat or other sensitive natural communities are present at the site. Therefore, **no impact** to riparian habitat or other sensitive natural communities would occur.

A search of the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (USFWS 2020) and the California EcoAtlas mapper (California Wetlands Monitoring Workgroup 2020) revealed no state-protected or federally protected wetlands within the Proposed Project site or surrounding area. Additionally, no potential wetland features or waters of the U.S. were observed on the site during the November 2020 biological reconnaissance site visit. The Proposed Project would not have an adverse effect on any federally protected or state-protected wetlands; therefore, **no impact** would occur.

The Project site is located within an agricultural field and is bounded by an almond orchard to the north; Hwy 99 to the east; Dianne Drive and rural residences to the west; and West Canal Drive, a detention basin, and commercial businesses to the south. No wildlife movement

corridors or nursery sites are known to cross the Proposed Project site. Construction of the Proposed Project would not substantially interfere with wildlife movement or an established wildlife corridor, as the site is relatively isolated by roads, rural residential and agricultural development, and Hwy 99. Since no routinely used wildlife nursery sites are known to occur in or near the Project site, **no impact** to wildlife migration corridors or nursery sites is expected to occur.

The Proposed Project would not conflict with the County of Stanislaus' Conservation/Open Space Element in the Stanislaus County General Plan (2016), the Biological Resource section in the City of Turlock's Westside Industrial Specific Plan (2017), or the Conservation Element in the Turlock General Plan (2012). Additionally, there are no local ordinances that are applicable to the Proposed Project. Therefore, implementation of the Project would result in **no impact** arising from conflicts with local ordinances and policies protecting biological resources.

A habitat conservation plan or natural community conservations plan is not applicable to the Proposed Project or the site. Therefore, the Proposed Project would not conflict with such plans and would have **no impact**.

3.4.4 Cultural Resources

The record search did not identify any known built environment or archaeological resources within the project parcel that meet the criteria for a historical resource pursuant to CEQA Guidelines Section 15064.5. Therefore, there would be **no impact** to known historical resources.

3.4.5 Geology, Soils, and Seismicity

The Proposed Project is not located within an Alquist-Priolo designated hazard zone. The nearest known active fault (i.e., surface displacement in the last 10,000 years) is the Greenville Fault Zone, approximately 25 miles west (California Geological Survey [CGS] 2010). The nearest potentially active fault (i.e., surface displacement in the last 1.6 million years) is the San Joaquin Fault, approximately 8 miles west of the study area (CGS 2010). Since there are no known faults in the study area, there would be **no impact** from ground rupture of a known fault.

The Proposed Project does not involve construction of septic tanks or alternative wastewater disposal systems. Therefore, there would be **no impact** related to the suitability of soils to support septic tanks or alternative disposal systems.

3.4.6 Hazards and Hazardous Materials

No existing or proposed schools are located within 0.25 mile of the Proposed Project site. Therefore, there would be **no impact**.

A search of state records conducted for the Proposed Project indicates that no listed hazardous materials or waste sites are located on the site (Geocon Consultants, Inc. [Geocon] 2019).

Therefore, the Proposed Project would not be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and would not create a significant hazard to the public or environment associated with any such sites. Therefore, there would be **no impact**.

No airports or airstrips are located within 2 miles of the Proposed Project site. The nearest airports are the Turlock Municipal Airport and the Modesto City-County Airport, both of which are more than 9 miles from the site. Therefore, there would be **no impact**.

3.4.7 Hydrology and Water Quality

The Proposed Project would be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, which would require preparation and implementation of a stormwater pollution prevention plan (SWPPP), including measures to prevent erosion and siltation. As such, impacts associated with erosion and siltation from construction site stormwater discharges would be avoided or minimized.

The design of the Proposed Project would include infrastructure to capture on-site runoff flows to avoid the potential for flooding and provide water quality treatment before discharging captured runoff into the existing City's stormwater system and ultimately into the receiving surface waters. In addition, applicable state water quality regulations would require implementation of best management practices (BMPs) and other post-construction measures to minimize the discharge of pollutants into the City's municipal separate storm sewer system (MS4) system, as described in the Phase II NPDES MS4 Permit. As a result, this impact would be **less than significant**.

The Proposed Project site is located within a Federal Emergency Management Agency- (FEMA-) designated area of minimal flood hazard. The Proposed Project site is not downstream of any large standing bodies of water in which a seiche could occur and is not within a tsunami-inundation area. Therefore, the potential to risk release of pollutants due to project inundation is low to nonexistent. As such, there would be **no impact**.

3.4.8 Land Use and Planning

The Proposed Project would involve construction of a full-service laboratory, offices, necropsy facility, and associated improvements on a site recently purchased by CDFA and previously used for agricultural row crops. Some offsite utility infrastructure improvements may be needed to serve the site; these would be provided through connection to the City of Turlock's, PG&E's, and/or TID's existing infrastructure. These connections would generally be underground along Dianne Drive and on the Proposed Project site. The Proposed Project would not divide any portion of the City of Turlock's community or the adjacent rural-residential neighborhood, nor disrupt any adjacent land uses. Therefore, there would be **no impact** associated with division of an established community.

The Proposed Project would be located on land purchased by CDFA in March 2020. Development activities on state-owned land are exempt from local laws, regulations, and policies. However, activities associated with the Proposed Project that are not located on the site (e.g., utility connections within the City of Turlock's, PG&E's, and TID's rights-of-way or easements along Dianne Drive) are not exempt and may be subject to local regulations. The proposed utility connections would mostly occur underground and would not conflict with existing connections already in place. Nevertheless, CDFA seeks to coordinate with local jurisdictions to reduce any physical consequences or potential land use conflicts to the extent feasible.

The Proposed Project site is designated as Office in the Turlock General Plan and is zoned Office Commercial. The Proposed Project would occur within an area covered by the City's Westside Industrial Specific Plan (WISP) and has a land use designation of Heavy Commercial. The Proposed Project would be compatible with the WISP, as laboratories are a permitted use on lands designated as Heavy Commercial with "Minor Administrative Approval."

The Proposed Project would not result in any conflicts with applicable land use plans, policies, or regulations; the impact would be **less than significant**.

3.4.9 Mineral Resources

The Project site has not been identified as a locally important mineral recovery site, nor would it interfere with an existing locally important mineral resource recovery site that has been delineated on a local general plan, specific plan, or other land use plan. Additionally, the nearest mining operations are located over 5 miles away from the Proposed Project; therefore, no active or historic mining operations would be affected by the Proposed Project. The Proposed Project would have **no impact** on any locally important mineral resource recovery sites.

3.4.10 Noise and Vibration

The movement and operation of the project's construction equipment may generate temporary ground-borne vibration. California Department of Transportation (Caltrans) has determined that a level of 80 vibration decibels (VdB) (0.04 inches per second [in/sec]) peak particle velocity [PPV]) would be distinctly perceptible. Therefore, remaining less than 80 VdB at residential uses would avoid human annoyance. Also, Caltrans recommends staying below 0.5 in/sec PPV at older residential structures to avoid structural damage (Caltrans 2020).

The vibration level associated with the use of a large bulldozer is 0.089 in/sec PPV (87 VdB) at 25 feet (Federal Transit Administration [FTA] 2018). The nearest vibration-sensitive uses (buildings) to the construction sites are approximately 50 feet from the site boundary. At these distances, the most substantial vibration generated by project construction equipment would attenuate to less than 78 VdB and 0.031 in/sec PPV, below the thresholds of 80 VdB and 0.5 in/sec PPV recommended by Caltrans. Therefore, short-term construction of the project would

not expose persons to or generate excessive ground-borne noise or vibration. For these reasons, this impact would be **less than significant**.

Once construction is completed, project operations would introduce a new source of vibration in the form of delivery trucks at the Proposed Project site. Rubber-tired vehicles operating at 30 mph would generate ground-borne vibration of approximately 0.01 PPV (64 VdB) at a distance of 50 feet from the roadway centerline, below the thresholds of 80 VdB and 0.5 in/sec PPV recommended by Caltrans. Operational vibration impacts would be **less than significant**.

The Proposed Project site is not located within 2 miles of a public airport or public use airport. No airports or airstrips would be used by the Proposed Project during construction or operation. The Proposed Project would not expose people working at the site to excessive noise levels. Therefore, **no impact** would occur.

3.4.11 Population and Housing

A project would affect population and housing if it induces growth directly (through the construction of new housing or an increasing population) or indirectly (by increasing employment opportunities or eliminating existing constraints on development).

The Proposed Project is projected to have 29 CAHFS employees (17 existing staff and 12 new staff) and 27 CDFA employees (all existing staff) for a total combined staff of 56 employees. CDFA staff from the Modesto and Stockton offices would be able to commute to the proposed new CDFA Turlock North Valley Laboratory without having to relocate if desired. Staff from the existing CAHFS Turlock Laboratory facility would travel approximately the same distance to the Proposed Project as they would to the existing CAHFS Turlock Laboratory. If a portion of the 27 CDFA employees were to move to Turlock, in addition to the 12 new CAHFS employees, there would be a minor increase in the local population. Turlock has a vacancy rate of 3.0 percent, indicating that sufficient housing is available to meet this minor increase in the local population, if needed.

The Proposed Project would not involve any activities that would increase population indirectly, such as by removing an obstacle to growth. It is expected that the existing Turlock Laboratory site would be decommissioned for future use as State-owned surplus building and potentially auctioned if there is no other State use for the property.

It is expected that the regional labor force would be sufficient to meet the construction workforce demand associated with the Proposed Project. While some workers may temporarily relocate from other areas, the resulting population increase would be minor and temporary. As a result, this impact would be **less than significant**.

The Project site is vacant of housing units and would not displace any existing housing units or people. All Proposed Project facilities would be constructed within the 7.5-acre site boundary,

or, for the utility connection areas, within or adjacent to the site and would not displace any existing housing. As a result, **no impact** would occur.

3.4.12 Public Services

A project could result in adverse physical effects associated with the provision of new or altered governmental facilities (e.g., police and fire protection facilities, hospitals, schools, and other public facilities) in the event that the demand for such services substantially increased.

Construction activities on the Proposed Project site would take place on undeveloped land that is unpaved and contains scattered ruderal vegetation. Project construction activities would follow the requirements for fire safety during construction contained in the California Fire Code and the California Public Resources Code (Pub. Res. Code). Project operation would include onsite storage of flammable materials, and a subbase fuel tank on the site would be used to operate the onsite emergency generator. The Proposed Project would be equipped with fire hydrants that would meet the applicable requirements of the California Building Code, California Fire Code. A hydraulically-calculated sprinkler system would be installed, and all buildings would be protected per NFPA 13.

The additional employees associated with the Proposed Project would not generate substantial demand for additional fire or police protection, significantly affect average response times or other performance metrics, or require provision of new fire or police protection facilities. This impact would be **less than significant**.

The nearest school is 1 mile northeast of the site. The Proposed Project would not affect existing school facilities, nor would it contribute to a substantial change in population that would require construction of new schools. There would be **no impact** to existing schools.

The Proposed Project would not involve construction, displacement, or temporary closure of any parks or recreational facilities. No existing parks or recreational facilities are located on the Project site. The small potential increase in population resulting from the Proposed Project could marginally increase the demand for parks but would not require construction of new parks or recreational facilities. As a result, this impact would be **less than significant**.

Project construction activities (e.g., equipment movement, materials and waste hauling) could cause temporary local traffic delays in the area, which may marginally decrease ease of access to the Sutter Urgent Care medical facility located at 3100 W. Christoffersen Parkway and other public facilities. However, these potential impacts would not be significant and would not require or result in the need to construct new or expanded public facilities. This impact would be **less than significant**.

3.4.13 Recreation

CDFA and CAHFS employees would need to travel approximately 1 road mile to access Centennial Park and 1.3 miles to access Summerfaire Park from the Proposed Project site. Lack of immediate access to the parks may reduce the number of employees using the park during work breaks. In addition, the new and existing employees that would be supported by the Proposed Project could marginally increase the use of existing parks, but these effects would not be substantial and would not require or result in the construction of new or expanded parks or recreational facilities. As a result, this impact would be **less than significant**.

The Proposed Project would not create or alter any recreational facilities. The Stanislaus County Fairgrounds is located approximately 2 miles east of the Proposed Project site and provides a wide range of recreational opportunities to the community, including agricultural and livestock-related activities. Activities at the Proposed Project site would have no effect on activities at the fairgrounds because the facilities are separated by two miles, northbound and southbound lanes of Hwy 99, and various urban structures. Likewise, the Project would not introduce substantial numbers of people to the area or otherwise cause the need to construct new or altered recreational facilities. Therefore, **no impact** would occur.

3.4.14 Transportation

The Proposed Project does not conflict with any transit goals or policies documented in the City of Turlock General Plan (City of Turlock 2012) and would not adversely affect future transit service planned, nor would it create a demand for alternative transportation systems or affect public transit services. The Proposed Project would construct sidewalks along the site frontage consistent with City requirements. Additionally, the Proposed Project would include the required dedication for future expansion of Dianne Drive to an industrial street, including right-of-way for future construction of Class II bike lanes. The Proposed Project would be consistent with the Turlock General Plan and the City's Active Transportation Plan. This impact would be **less than significant**.

The Proposed Project would not require any changes to existing road configurations that could create sharp curves or dangerous intersections and no site access or circulation issues have been identified that would cause a traffic safety problem/hazard. The Proposed Project's final site plan would be designed such that all driveways and parking areas are accessible to emergency vehicles. Driveways proposed on Dianne Drive would be designed to meet City design standards, including sight distance requirements for fences, walls, and landscaping. Gates at the driveways proposed on Dianne Drive would be set back and would remain open during normal business hours to ensure no queuing spillback occurs onto Dianne Drive. This impact would be **less than significant**.

The Proposed Project would include a fire truck–accessible drive aisle on Dianne Drive approximately 100 feet north of the southern property line. The fire truck lane would allow emergency access throughout the site and connect to the egress-only driveway along the

northern property line. The multiple entry/exit points provide flexibility for emergency vehicles to access and maneuver throughout the site and the remaining 20 acres of undeveloped land on the eastern side of the parcel. Therefore, this impact would be **less than significant**.

3.4.15 Utilities and Service Systems

During construction, the Proposed Project would generate some construction debris associated with site preparation. This would include clearing and grubbing, grading, excavation, importing and placing fill, and removal of all on-site vegetation. During operation, the Proposed Project would generate typical domestic solid waste (e.g., employees' trash) as well as hazardous wastes (e.g., laboratory chemicals, biogenic materials, solvents, cleaners, other evaporative compounds). Hazardous waste disposal would be transported weekly to a hazardous waste facility for disposal or recycling. Biohazardous materials, such as animal carcasses, would be incinerated onsite or at a rendering facility.

The Proposed Project would be LEED silver-certified and would have recycling bins on site. In accordance with the Integrated Waste Management Act, the Proposed Project would seek to divert at least 50 percent of its solid waste. Non-recyclable solid waste generated by the Proposed Project would be taken to the Fink Road Landfill, which has sufficient remaining capacity and is not projected to close until 2052. As such, the Proposed Project would not generate solid waste in excess of state or local standards, in excess of the capacity of local infrastructure, or impair the attainment of any solid waste goals. Additionally, it would comply with applicable management and reduction regulations related to solid waste. Therefore, this impact would be **less than significant**.

3.4.16 Wildfire

The Proposed Project would be located in an area previously used for agricultural row crops and surrounded by agricultural lands as well as urban developments and rural residences. There are no wildland areas or areas that are at high risk for wildfires within the vicinity of the Project site. The Proposed Project is not located in, nor is it near, State Responsibility Areas identified by California Department of Forestry and Fire Protection (CAL FIRE) as very high fire hazard severity zones (CAL FIRE 2007). Therefore, the Proposed Project would not interfere with an adopted emergency response plan or emergency evacuation plan. In addition, the Proposed Project would include an access driveway and a fire access aisle that would allow access by emergency vehicles to the Project site as well as the remaining parcel. The remainder of the 27-acre parcel would be mowed and disced by CDFA to minimize the potential fire risk on the undeveloped parcel. Installation of the proposed utilities would occur underground and would not exacerbate fire risks. No people or structures would be exposed to any downslope or downstream flooding or landslides subsequent to any potential fires since the Project site is flat. These impacts would be **less than significant**.

Chapter 4
Agriculture

4.1 OVERVIEW

This chapter evaluates the Proposed Project's impacts on agriculture. The chapter first describes the regulatory and environmental settings and then evaluates the Proposed Project's agriculture. Impacts on forestry resources were dismissed in the IS for the Proposed Project, as explained in Chapter 3, *Introduction to the Environmental Analysis.* The impact evaluation begins by describing the applicable significance criteria and the methods used to evaluate the level of significance, and then presents the impact evaluation.

4.2 REGULATORY SETTING

4.1.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies are applicable to agriculture and the Proposed Project.

4.1.2 State Laws, Regulations, and Policies

Farmland Mapping and Monitoring Program

The California Department of Conservation (CDOC) established the Farmland Mapping and Monitoring Program (FMMP) in 1982 as a non-regulatory program to provide a consistent and impartial analysis of agricultural land use and land use changes throughout California. The first Important Farmland maps, produced in 1984, covered 30.3 million acres in 38 counties. Since that time, CDOC has collected data every 2 years to assist in understanding changes in agricultural land in the state. Data now span more than 32 years and have expanded to 49.1 million acres as modern soil surveys have been completed by U.S. Department of Agriculture (USDA). FMMP now maps agricultural and urban land use for nearly 98 percent of California's privately held land.

The FMMP has developed categorical definitions of Important Farmland that incorporate the land's suitability for agricultural production rather than solely relying on the physical and chemical characteristics of the soil. The FMMP includes data on the location of agricultural land, land use changes from agriculture to urban development, and soil quality. Land that is identified as Important Farmland is mapped as one of the following four categories (CDOC No Date):

Prime Farmland. Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.

Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.

Unique Farmland. Farmland of lesser quality soils used for the production of the state's leading agricultural crops. These lands usually are irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones. Unique Farmland must have been cropped at some time during the 4 years before the FMMP's mapping date.

Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, better known as the Williamson Act, is California's primary program to protect agricultural land. The Williamson Act discourages conversion of agricultural land by allowing landowners to enter into long-term contracts (10 or 20 years) with the State of California to keep agricultural land in production in return for reduced property tax rates. The landowner and any successors-in-interest are obligated to adhere to the contract's enforceable restrictions unless the contract is rescinded or cancelled. In 1998, an option was added in the Williamson Act Program to create Farmland Security Zones, which are areas within an agricultural preserve that offer private landowners a greater property tax reduction than the regular assessment within the Williamson Act.

4.1.3 Local Laws, Regulations, and Policies

Development activities on State-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in **Appendix B**, *Applicable Local Regulations*.

4.3 ENVIRONMENTAL SETTING

The Proposed Project site is located within the City of Turlock's (City's) planning boundaries in Stanislaus County, California. Important Farmland in Stanislaus County in 2018 totaled 428,450 acres and was composed of 250,420 acres of Prime Farmland, 33,042 acres of Farmland of Statewide Importance, 121,930 acres of Unique Farmland, and 23,058 acres of Farmland of Local Importance (CDOC 2019). Stanislaus County's combined Important Farmland

areas increased by approximately 3,000 acres from 2016, with minimal changes (+/-500 acres or less) in the Prime Farmland and Farmland of Statewide Importance categories, losses in Locally Important Farmland (3,000 acres), and gains in Unique Farmland (5,700 acres) (CDOC 2019). Within the City of Turlock's general plan study area, approximately 7,000 acres of Important Farmland exists, with Prime Farmland comprising the majority (approximately 5,000 acres) (City of Turlock 2012). The entire approximately 27-acre Proposed Project site is designated Prime Farmland (**Figure 4-1**) and was farmed for row crops until CDFA's acquisition of the property in March 2020 (CDOC 2014).

According to the 2015 Stanislaus County Agricultural Report, 575,549 acres in the county are registered as being under Williamson Act contract. This accounts for approximately 60 percent of the total agricultural acreage in the county (Stanislaus County Agricultural Commissioner 2015). The Proposed Project is located on non-enrolled land and would therefore not violate any Williamson Act protection policies.

4.4 IMPACT ANALYSIS

4.1.4 Methodology

The analysis of the potential effects of the Proposed Project on agriculture is qualitative in nature and involves comparing aspects of the Proposed Project to the significance criteria described below. The analysis considered the existing federal and state laws, regulations, and policies described in Section 4.2.2, "Regulatory Setting"; the local laws, regulations, and policies listed in Appendix B; and the existing land uses and agricultural resources described in Section 4.3, "Environmental Setting."

4.1.5 Criteria for Determining Significance

For the purposes of this analysis, based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact on agriculture and forestry resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Res. Code Section 12220[g]), timberland (as defined in Pub. Res. Code Section 4526), or timberland zoned Timberland Production (as defined in Government Code Section 51104[g]);
- Result in the loss of forest land or conversion of forest land to non-forest use; or

- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

As detailed in the Proposed Project's Initial Study and in Chapter 3, *Introduction to the Environmental Analysis*, of this DEIR, the following criteria were identified as requiring no further analysis:

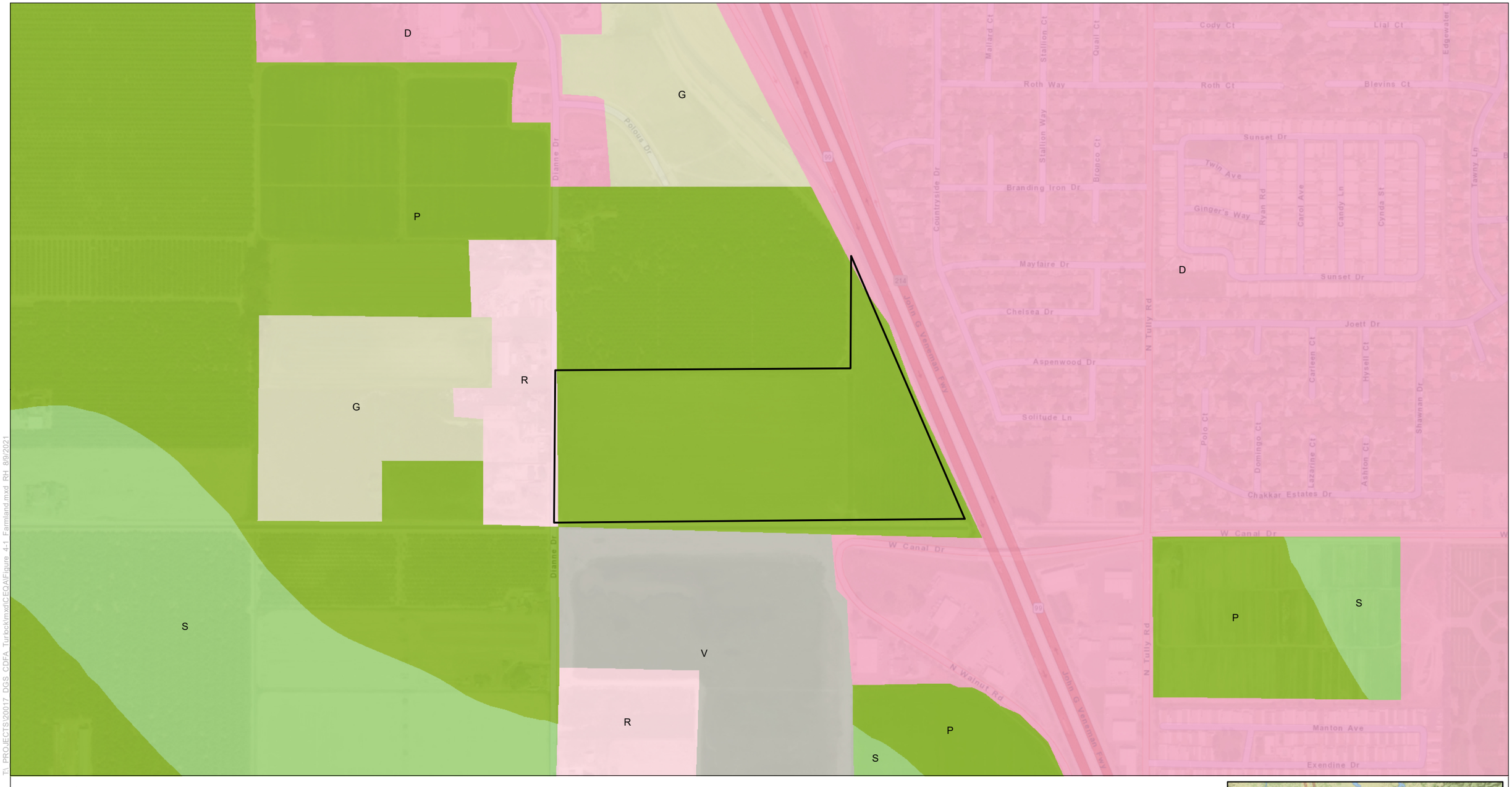
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.
- Result in the loss of forest land or conversion of forest land to non-forest use.

4.1.6 Environmental Impacts

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use — Significant and Unavoidable

The Proposed Project would be located on designated Prime Farmland. The Proposed Project would convert approximately 7.5 acres of the 27-acre Prime Farmland parcel to non-agricultural uses by constructing the proposed laboratory facilities. Future uses for the remainder of the 27-acre parcel are unknown. However, the City of Turlock has zoned the entire 27-acre parcel, including the Project site, for Office Commercial uses and considered conversion of this parcel to non-agricultural uses in the City's General Plan (City of Turlock 2012). Following construction, the Proposed Project's laboratory operations would support agriculture but would not be considered an agricultural use. Therefore, the Proposed Project would temporarily and permanently convert Prime Farmland, a significant impact.

Stanislaus County has established the Farmland Mitigation Program (FMP) to provide mitigation options regarding agricultural conversion. As noted above, however, the FMP guidelines apply only to development projects that require a General Plan or Community Plan amendment to change the land use designation from Agriculture to a residential land use designation. The Proposed Project would not require such an amendment; therefore, the FMP guidelines do not apply to the Proposed Project and this mitigation option is not available to CDFA.



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N

0 125 250 500 Feet

Prepared by:

Horizon WATER and ENVIRONMENT

Source: ESRI 2021, FMMP 2018

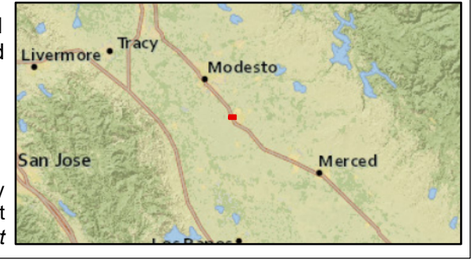
Project Features

Project Site

Important Farmland

- P - Prime Farmland
- S - Farmland of Statewide Importance
- G - Grazing Land
- V - Vacant or Disturbed Land
- D - Urban and Built-Up Land
- R - Rural Residential Land

Figure 4-1
Important Farmland



Tulock North Valley Laboratory Replacement Project
Environmental Impact Report

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To help mitigate the severity of the significant impact, CDFA has proposed the funding of a conservation easement on Prime Farmland in consultation with the East Stanislaus Resource Conservation District, CDOC, or another farmland conservation organization or agency. With implementation of **Mitigation Measure AG-1 (Fund a Conservation Easement on Prime Farmland)**, impacts to Prime Farmland would be reduced, although not to a less-than-significant level or entirely avoided, because the conservation of agricultural land would not create new farmland to offset the loss of farmland due to the Proposed Project. Because funding of a conservation easement cannot fully offset the loss of Prime Farmland due to the Proposed Project, this impact is considered **significant and unavoidable.**

> **Mitigation Measure AG-1. Fund a Conservation Easement on Prime Farmland.**
>
> CDFA shall coordinate with an appropriate farmland conservation organization or agency prior to the completion of the Proposed Project to make a one-time donation to a conservation easement to compensate for the loss of Prime Farmland. The amount of CDFA's contribution shall ensure the conservation of 1 acre of agricultural land in Stanislaus County for each acre of agricultural land converted by the Proposed Project, based on the market price for the commensurate agricultural land at the time that the impacts occur.

Impact AG-2: Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use— Less than Significant

The Proposed Project would not result in any other changes in the existing environment (apart from the effects described above in Impact AG-1) that could result in conversion of Prime Farmland to non-agricultural use. The Proposed Project would not involve any new urban or residential development or any other land uses or infrastructure that could directly or indirectly result in agricultural land conversion. As such, this impact would be **less than significant**. No mitigation is required.

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Chapter 5
Air Quality

5.1 OVERVIEW

This chapter evaluates the Proposed Project's air quality impacts. The chapter first describes the air quality regulatory and environmental settings and then evaluates the Proposed Project's air quality impacts. The impact evaluation begins by describing the air quality significance criteria and the methods used to evaluate significance, and then presents the impact evaluation.

Air quality is described for a specific location as the concentration of various pollutants in the atmosphere. Air quality conditions at a particular location are a function of the type and amount of air pollutants emitted into the atmosphere, the size and topography of the regional air basin, and the prevailing meteorological conditions.

5.2 REGULATORY SETTING

5.2.1 Federal Laws, Regulations, and Policies

The U.S. Environmental Protection Agency (USEPA) is responsible for establishing the National Ambient Air Quality Standards (NAAQS), enforcing the Clean Air Act (CAA), and regulating transportation-related emission sources, such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. The USEPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet stricter emission standards established by the California Air Resources Board (CARB).

Clean Air Act

At the federal level, the CAA governs air quality in the United States and is implemented by the USEPA. USEPA is responsible for setting and enforcing the NAAQS for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, non-road engines, and certain types of locomotives. USEPA also has jurisdiction over emission sources outside state waters (outer continental shelf) and establishes various emission standards for vehicles sold in states other than California; California has received a waiver to establish emission standards lower than the federal standards. As part of its enforcement responsibilities, USEPA requires each state with "nonattainment" areas to prepare and submit a state implementation plan (SIP) that demonstrates the means to attain

the NAAQS before the deadline mandated by USEPA. The SIP must integrate federal, state, and local plan components and regulations and identify specific measures to reduce pollution, using a combination of performance standards and market-based programs, within the timeframe identified in the SIP. A maintenance plan must be prepared for each former nonattainment area that subsequently demonstrates compliance with the standards.

The CAA also contains regulations dealing with operating permits for large industrial and commercial sources that release pollutants into the air. Operating permits contain information on which pollutants are being released, the quantity that may be released, and what steps the owner or operator of the emission source must take to reduce pollution.

Non-road Emission Regulations

USEPA has adopted emission standards for different types of non-road engines, equipment, and vehicles. For non-road diesel engines, USEPA has adopted multiple tiers of emission standards.

USEPA signed a final rule on May 11, 2004, introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 CFR 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of particulate matter (PM) and oxides of nitrogen (NOx) be further reduced by about 90 percent. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, USEPA also mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California, which has only limited authority to set emission standards for new non-road engines. The CAA preempts California's authority to control emissions from new farm and construction equipment less than 175 horsepower (hp) (CAA Section 209[e][1][A]) and requires California to receive authorization from USEPA for controls over other off-road sources (CAA Section 209[e][2][A]).

On-road Vehicle Emission Regulations

On April 1, 2010, USEPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce greenhouse gas (GHG) emissions and improve fuel economy standards for new model year 2012–2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2020a). However, some of these standards have been stayed by a court order and USEPA has proposed repealing certain Phase 2 emissions standards (Center for Climate and Energy Solutions 2020). In April 2020, NHTSA and USEPA amended the Corporate Average Fuel Economy (CAFE) and GHG emissions standards for passenger cars and light trucks and established new less stringent standards, covering model years 2021 through 2026 known as the Safer Affordable Fuel-Efficient (SAFE) I Rule (USEPA 2020b). The NHTSA and USEPA are currently considering repealing the SAFE

I Rule as it may have overstepped the agency's authority by issuing regulations and preemption of state and local laws related to fuel economy standards (NHTSA 2021).

National Emission Standards for Hazardous Air Pollutants

The National Emission Standards for Hazardous Air Pollutants, contained in two parts (Part 61 and 63) of CFR Title 40, regulate major sources of hazardous air pollutants (HAPs). HAPs include asbestos, beryllium, mercury, vinyl chloride, benzene, arsenic, radon/radionuclides, and various types of pesticides, herbicides, and other chemicals. A "major source" is defined as a source having the potential to emit 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs.

5.2.2 State Laws, Regulations, and Policies

California Clean Air Act

Responsibility for attaining and maintaining air quality standards in California is divided between the CARB and regional air quality districts. Areas of control for the regional districts are set by CARB, which divides the state into air basins. The California Clean Air Act (CCAA) requires nonattainment areas to achieve and maintain the health-based California Ambient Air Quality Standards (CAAQS) by the earliest practicable date. The act is administered by CARB at the state level and by local air quality management districts at the regional level; the air districts are required to develop plans and control programs for attaining the state standards. Unlike the federal CAA, the CCAA does not set precise attainment deadlines. Instead, the CCAA establishes increasingly stringent requirements for areas that will require more time to achieve the standards.

CARB is responsible for ensuring implementation of the CCAA, meeting state requirements of the federal CAA, and establishing the CAAQS. The state standards are generally more stringent than the federal standards and incorporate additional standards for sulfate (SO_4), hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. CARB sets emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

Statewide Truck and Bus Regulations

On December 12, 2008, CARB approved a new regulation to substantially reduce emissions of diesel particulate matter (DPM), NOx, and other pollutants from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance standards and requirements between 2011 and 2023. Affected vehicles included on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The regulation was updated in 2011 and 2014 with revisions that provide more compliance flexibility and reflect the impact of the economic recession on vehicle activity and

emissions. Heavy-duty trucks used in Proposed Project activities would be required to comply with this regulation.

In-use, Off-road Diesel Vehicle Regulation

In 2007, CARB adopted a regulation to reduce DPM and NOx emissions from in-use, off-road, heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In 2011, major amendments were made to the regulation, including modifications to the compliance dates for performance standards and establishing requirements for compliance with verified diesel emission control strategy technologies that reduce PM and/or NOx emissions.

Heavy-duty Vehicle Inspection Program

The heavy-duty vehicle inspection program requires that heavy-duty trucks and buses be inspected for excessive smoke and tampering and for compliance with engine certification labels. Any heavy-duty vehicle (i.e., a vehicle with a gross vehicle weight rating greater than 6,000 pounds) traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found to be in violation are subject to penalties starting at $300 per violation. Heavy-duty trucks used for Proposed Project activities would be subject to the inspection program.

Heavy-duty On-board Diagnostic System Regulations

In 2004, CARB adopted regulations requiring on-board diagnostic (OBD) systems on all 2007 and later model year heavy-duty engines and vehicles (i.e., vehicles with a gross vehicle weight rating greater than 14,000 pounds) in California. CARB subsequently adopted a comprehensive OBD regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty OBD regulations were updated in 2010, 2013, and 2016 with revisions to enforcement requirements, testing requirements, and implementation schedules. Heavy-duty trucks used for Proposed Project activities would be required to comply with the heavy-duty OBD regulatory requirements.

California Standards for Diesel Fuel Regulations

State regulations require diesel fuel with sulfur content of 15 parts per million (ppm) or less (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, except for diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

State Vehicle Fleet Regulations

SB 498 requires DGS, starting no later than the 2024–25 fiscal year, to ensure that at least 50 percent of the light-duty vehicles purchased for the state vehicle fleet each year are zero-emission. In addition to the statutory targets for transitioning the state fleet to increasing levels of zero-emission vehicles (ZEVs), DGS has in place ZEV-first purchasing mandates applicable to all state agencies that purchase vehicles for the state fleet. These mandates prioritize pure ZEVs (i.e., battery electric and hydrogen fuel-cell vehicles), although they allow for plug-in hybrids and other vehicles to be purchased if the purchasing agency can demonstrate why a pure ZEV cannot meet their transportation requirements.

Airborne Toxic Control Measures

CARB regulates toxic air contaminants (TACs) by requiring implementation of various airborne toxic control measures (ATCMs), which are intended to reduce emissions associated with toxic substances. ATCMs, including the following relevant measures, are implemented to address sources of TACs:

- ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater;
- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling;
- ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines Standards for Nonvehicular Diesel Fuel;
- ATCM for Stationary Compression Ignition Engines;
- Diesel Particulate Matter Control Measure for On-Road Heavy-Duty Diesel-Fueled Residential and Commercial Solid Waste Collection Vehicles; and
- Asbestos ATCM for Construction, Grading, Quarrying and Surface Mining Operations.

Portable Equipment Registration Program

The statewide Portable Equipment Registration Program (PERP) establishes a system to uniformly regulate portable engines and portable engine-driven equipment units. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain permits from individual air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program. Operation of registered portable engines may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake hp are exempt from this program. Some of the engines used for the Proposed Project may operate under PERP.

TAC Regulations

In addition to ATCMs, TACs are controlled under several different regulations in California, including the Tanner Air Toxics Act, Air Toxics Hot Spots Information Act, and Assembly Bill (AB) 2588: Air Toxics "Hot Spots" Information and Assessment Act. In addition, Proposition 65 (the Safe Water and Toxic Enforcement Act of 1996) requires the state to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm. Proposition 65 requires businesses to notify Californians about substantial amounts of chemicals in the products they purchase or that are released into the environment.

AB 203 Occupation Safety and Health: Valley Fever

Enacted in 2019, AB 203 modifies section 6709 of the California Labor Code to require construction employers in counties where Valley Fever is highly endemic (>20 cases per 100,000 people per year) to provide training to all employees by May 1, 2020 and annually thereafter. Stanislaus County is considered a highly endemic area. Training requirements must include the following:

- What Valley Fever is and how it is contracted;
- Areas, environmental conditions, and types of work that pose high risk of contracting Valley Fever;
- Personal factors that put employees at higher risk of infection or disease development, including pregnancy, diabetes, having a compromised immune system due to conditions such as human immunodeficiency virus or acquired immunodeficiency syndrome, having received an organ transplant, or taking immunosuppressant drugs such as corticosteroids or tumor necrosis factor inhibitors;
- Personal and environmental exposure prevention methods such as water-based dust suppression, good hygiene practices when skin and clothing is soiled by dust, avoiding contamination of drinks and food, working upwind from dusty areas when feasible, wet cleaning dusty equipment when feasible, and wearing a respirator when exposure to dust cannot be avoided;
- The importance of early detection, diagnosis, and treatment to prevent the disease from progressing; because the effectiveness of medication is greatest in the early stages of the disease;
- Recognizing common signs and symptoms of Valley Fever, including cough, fatigue, fever, headache, joint pain or muscle aches, rash on upper body or legs, shortness of breath, and symptoms similar to influenza that linger longer than usual;

- The importance of reporting symptoms to the employer and seeking prompt medical attention from a physician for appropriate diagnosis and treatment; and
- Prognosis and common treatment for Valley Fever.

Cal/OSHA Regulations Applicable to Valley Fever

Since the Stanislaus County has a high incidence of Valley Fever, construction contractors are required to comply with California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) recommendations and regulations:

- Employers have a legal responsibility to immediately report to Cal/OSHA any serious injury or illness, or death (including any due to Valley Fever) of an employee occurring in a place of employment or in connection with any employment. Employers also have responsibilities to control workers' exposure to hazardous materials.
- Applicable regulations with regard to Valley Fever protection and exposure can be found in the California Code of Regulation, Title 8, sections:
  - 342 (Reporting Work-Connected Fatalities and Serious Injuries),
  - 3203 (Injury and Illness Prevention),
  - 5141 (Control of Harmful Exposures),
  - 5144 (Respiratory Protection) and
  - 1433 (Employer Records-Log 300).

5.2.3 Local Laws, Regulations, and Policies

At the local level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality monitoring stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents under CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws, as well as for ensuring that the NAAQS and CAAQS are met.

Local governments are essential partners in the effort to reduce air pollutant emissions. The local governments have influence through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations.

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in **Appendix B**.

San Joaquin Valley Air Pollution Control District

SJVAPCD has local air quality jurisdiction over the Proposed Project and in other counties under its jurisdiction. SJVAPCD's recommended CEQA thresholds are outlined in its *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a). SJVAPCD has adopted attainment plans to address ozone and PM.

1-Hour Ozone

Although USEPA revoked its 1979 1-hour ozone standard in June 2005, many planning requirements remain in place, and the San Joaquin Valley Air Basin (SJVAB) must still attain this standard before CAA Section 185 fees (which are required when attainment is not reached) can be rescinded. SJVAPCD's most recent 1-hour ozone plan, the *2013 Plan for the Revoked 1-hour Ozone Standard* (SJVAPCD 2013), demonstrated attainment of the 1-hour ozone standard by 2017. In July 2016, USEPA made a final determination that the SJVAB has attained the 1-hour ozone NAAQS based on the most recent 3-year data period (2012–2014) of sufficient, quality-assured, and certified data (SJVAPCD 2016). For the SJVAB to be officially designated as an attainment area, SJVAPCD must verify that attainment is due to permanent and enforceable emission reductions and prepare a maintenance plan.

8-Hour Ozone

SJVAPCD's far-reaching 2007 Ozone Plan demonstrates attainment of USEPA's 1997 8-hour ozone standard by 2023. USEPA approved the 2007 Ozone Plan effective April 30, 2012. The district has prepared a 2016 Ozone Plan to address USEPA's 2008 8-hour ozone standard, which the SJVAB must attain by 2032 (SJVAPCD 2021b). This extremely stringent standard is nearing the SJVAB's naturally occurring background concentrations of ozone. The 2016 plan identifies that, without mobile sources transitioning to near-zero emission levels through the implementation of transformative measures such as ultra-low tailpipe emissions standards (which SJVAPCD does not have the authority to implement), attainment of the federal standards is not possible (SJVAPCD 2021b).

PM10

PM is a complex mixture of extremely small particles and liquid droplets, made up of multiple components, including acids, organic chemicals, metals, and soil or dust particles. Particles that are smaller than 10 micrometers in diameter (PM10) are typically found near roadways and around dusty industrial sites. Based on PM10 measurements from 2003-2006, USEPA found that the SJVAB has reached attainment of federal PM10 standards. On September 21, 2007, the SJVAPCD Governing Board adopted the 2007 *PM10 Maintenance Plan and Request for*

Redesignation, which demonstrates that the SJVAB will continue to meet the PM10 standard. USEPA approved the document and, on September 25, 2008, the SJVAB was redesignated to attainment/maintenance (SJVAPCD 2021c). SJVAPCD is in the process of developing the 2017 PM10 Maintenance Plan to demonstrate the maintenance of the standard for an additional ten-year period of 2020 through 2029 (SJVAPCD 2021a, 2021b).

PM2.5

Fine particles (PM2.5) are less than 2.5 micrometers in diameter and are found in smoke and haze. Changes in the federal PM2.5 air quality standard (in 1997, 2006, and 2012) and recent drought conditions in California have resulted in the development of multiple PM2.5 air quality plans by SJVAPCD. The 2008 and 2015 PM2.5 plans have been prepared to achieve attainment of USEPA's first PM2.5 standard, set in 1997. The attainment deadline for the 1997 standard has been delayed to 2020 (SJVAPCD 2015b).

USEPA lowered the PM2.5 standard in 2006. Although SJVAPCD's 2012 PM2.5 plan showed attainment of this standard by 2019, USEPA reclassified SJVAPCD to serious nonattainment for the 2006 PM2.5 standard in January 2015, and SJVAPCD must prepare a revised plan to address this nonattainment.

On September 15, 2016, SJVAPCD adopted the *2016 Moderate Area Plan for the 2012 PM2.5 Standard* to address another PM2.5 standard issued by USEPA in 2012 and USEPA's determination that the SJVAB is a moderate nonattainment area for the 2012 federal PM2.5 standard. SJVAPCD continues to work with USEPA on issues surrounding these plans, including USEPA implementation updates, and is in the process of developing an attainment strategy to address the multiple PM2.5 standards (1997, 2006, and 2012) (SJVAPCD 2021a, 2021b).

SJVAPCD Rules

The Proposed Project may be subject to the following district rules. These rules have been adopted by SJVAPCD to reduce emissions throughout the SJVAB:

> **Rule 2010 – Permits Required** requires an applicant to obtain an Authority to Construct and Permit to Operate for certain types of stationary air pollution sources.
>
> **Rule 2201 – New and Modified Stationary-Source Review Rule** applies to all new stationary sources and all modifications to existing stationary sources subject to SJVAPCD permit requirements that, after construction, emit or may emit one or more pollutants regulated by the rule.
>
> **Rule 2280 – Portable Equipment Registration** applies to portable emissions units that may operate in participating districts throughout California. The rule requires applicable portable equipment to be registered.

Rule 3135 – Dust Control Plan Fees requires the applicant to submit a fee in addition to a dust control plan. The purpose of this rule is to recover SJVAPCD's cost for reviewing these plans and conducting compliance inspections.

Rule 4001 – New Source Performance Standards applies to new or modified sources of air pollution that must comply with standards, criteria, and requirements for the applicable sources. This incorporates by reference the federal New Source Performance Standards.

Rule 4101 – Visible Emissions prohibits emissions of visible air contaminants into the atmosphere and applies to any source operation that emits or may emit air contaminants.

Rule 4102 – Nuisance applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the project creates a public nuisance, it could be in violation of this rule and subject to SJVAPCD enforcement action.

Rule 4201 – Particulate Matter Concentration applies to any source operation that emits or may emit dust, fumes, or total suspended particulate matter.

Rule 4202 – Particulate Matter - Emissions Rate limits particulate matter emissions by establishing allowable emission rates.

Rule 4302 – Incinerator Burning prohibits the use of any incinerator except for a multi-chamber incinerator or one equally effective in controlling air pollution.

Rule 4304 – Equipment Tuning Procedures for Boilers, steam generators, and process heaters.

Rule 4305 – Boilers, steam generators, and process heaters - phase 2

Rule 4306 – Boilers, steam generators, and process heaters - phase 3

Rule 4307 – Boilers, steam generators, and process heaters – 2.0 MMBtu/hr to 5.0 million British thermal units per hour (MMBtu/hr)

Rule 4308 – Boilers, steam generators, and process heaters – 0.075 MMBtu/hr to 2.0 MMBtu/hr

Rule 4351 – Boilers, steam generators, and process heaters - phase 1

Rule 4601 – Architectural Coatings limits volatile organic compound (VOC) emissions from architectural coatings.

Rule 4623 Storage of Organic Liquids

Rule 4641 – Cutback, Slow-Cure, and Emulsified Asphalt, Paving, and Maintenance Operations applies to the manufacture and use of cutback asphalt, slow-cure asphalt, and emulsified asphalt for paving and maintenance operations.

Rule 4661 – Organic Solvents

Rule 4663 – Organic Solvent Cleaning, Storage and Disposal

Rule 4701 – Internal Combustion Engines—Phase 1 limits the emissions of NOx, carbon monoxide (CO), and VOCs from internal combustion engines. These limits are not applicable to standby engines as long as they are used fewer than 200 hours per year (e.g., for testing during non-emergencies).

Rule 4702 – Internal Combustion Engines—Phase 2 limits the emissions of NOx, CO, and VOCs from spark-ignited internal combustion engines.

Regulation VIII – Fugitive PM10 Prohibitions is a series of rules (Rules 8011–8081) designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction, road construction, bulk materials storage, landfill operations, and other activities.

Rule 9410 – Employer Based Trip Reduction

Rule 9510 – Indirect Source Review is intended to reduce a project's impact from indirect sources such as on-road and off-road vehicles on air quality through project design elements or mitigation by payments of applicable offsite mitigation fees. Compliance with Rule 9510 is designed to reduce construction exhaust NOx and PM10 emissions by 20 percent and 45 percent, respectively. Compliance with Rule 9510 is designed to reduce operational emissions of NOx and PM10 emissions by 33.3 percent and 50 percent, respectively.

Fugitive Dust Measures (Regulation VIII)

The Proposed Project would also be required to implement the mandatory control measures listed in Table 2 of the SJVAPCD's Mitigation Measures guidance document (SJVAPCD 2021d) to reduce fugitive dust emissions. These measures are not considered mitigation measures under CEQA because they are required by law.

The Regulation VIII requirements that may be applicable to the Proposed Project are listed below:

- All disturbed areas, including storage piles, which are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water or a chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and offsite unpaved access roads will be effectively stabilized for dust emissions using water or a chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by utilizing an application of water or by presoaking.
- All materials transported off site will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will 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, piles will be effectively stabilized to prevent fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.
- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.

5.3 ENVIRONMENTAL SETTING

5.3.1 Regional Setting

San Joaquin Valley Air Basin

The SJVAB encompasses the southern half of California's Central Valley; the area is approximately 250 miles long and averages 35 miles wide. The SJVAB is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. The SJVAB contains all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare

Counties, as well as a portion of Kern County. The Proposed Project is located in the SJVAB within Stanislaus County.

Climate and Topography

The area has an inland Mediterranean climate that is characterized by warm, dry summers and cool, wet winters. Summer high temperatures often exceed 100°F, averaging in the low 90s in the northern valley and the high 90s in the southern portion.

Although marine air generally flows into the basin from the San Francisco Bay–Sacramento-San Joaquin River Delta region, the surrounding mountain ranges restrict air movement through and out of the valley. Wind speed and direction influence the dispersion and transportation of pollutants; the greater the wind flow, the lower the accumulation. The vertical dispersion of air pollutants in the SJVAB is limited by the presence of persistent temperature inversion, leading to higher concentrations of emitted pollutants (SJVAPCD 2015a).

Precipitation and fog tend to reduce pollutant concentrations. Ozone is formed when chemical compounds such as reactive organic gases (ROG) and NOx (collectively known as ozone precursors) react with sunlight. Clouds and fog block the solar radiation, slowing or preventing the ozone-forming reaction. Annual precipitation in the San Joaquin Valley decreases from north to south, averaging approximately 20 inches in the north, 10 inches in the central portion, and less than 6 inches in the south (SJVAPCD 2002). In the Ceres/Turlock/Hughson/Modesto area of the SJVAB near the Proposed Project area, the average annual precipitation is approximately 12 inches (Western Regional Climate Center 2021).

5.3.2 Project Vicinity

The Proposed Project site is located at 830 Dianne Drive, at the northeast corner of Dianne Drive and West Canal Drive in Turlock, California, and directly west of Hwy 99. The site consists of an approximately 7.5-acre portion of a 27-acre parcel. The 7.5-acre site would be located in the parcel's westernmost area, farthest from Hwy 99. Access to the site is available on Dianne Drive, a two-lane road that runs along the west boundary of the parcel. TID owns and operates an uncovered irrigation canal, TID Upper Lateral No. 4, along the southern boundary of the parcel.

The Proposed Project site consists of level agricultural row cropland. Land uses immediately adjacent to the site are agricultural land and rural residences. Land uses east of Hwy 99 include residential and commercial development. The largest source of TACs within 1,000 feet of the Proposed Project site are Hwy 99 and the gasoline station at Joe M. Gomes & Sons, Inc. at 725 North Tully Road.

5.3.3 Air Pollutants

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a localized effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic, forming pollutant "hot spots." CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions, CO concentrations may be distributed more uniformly over an area to some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and reduces the blood's capacity for carrying oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, impair mental abilities, and cause death.

Nitrogen Oxides

NOx is a family of gaseous nitrogen compounds and are precursors to the formation of ozone and PM. The major component of NOx, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NOx results primarily from the combustion of fossil fuels under high temperature and pressure. Fuel combustion, primarily from on-road and off-road motor vehicles and industrial sources, is the major source of this air pollutant (SJVAPCD 2015a).

Volatile Organic Compounds

VOCs are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOC emissions are a major precursor to the formation of ozone (SJVAPCD 2015a).

Ozone

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere (the lowest region of the atmosphere), it is produced by a photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NOx and VOC (known as ozone precursors) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a pollutant regulated by state and federal air quality agencies. It is a major component of smog. In the stratosphere, however, ozone exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and human-made materials such as rubber and plastics (SJVAPCD 2015a).

Particulate Matter

PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of multiple components, including acids, organic chemicals, metals, and soil or dust particles. The size of particles in PM is directly linked to the particles' potential for causing health problems. PM10 is of concern because these particles pass through the throat and nose and are deposited in the thoracic region of the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM2.5 penetrates even more deeply into the thoracic and alveolar regions of the lungs (SJVAPCD 2015a).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO_2 particles contribute to the poor visibility that occurs in the SJVAB and are a component of PM10 (SJVAPCD 2015a).

Lead

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract (SJVAPCD 2015a).

In the past, gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. Since the use of leaded fuel has been mostly phased out, ambient concentrations of lead have decreased dramatically.

Hydrogen Sulfide

Hydrogen sulfide (H2S) is associated with geothermal activity, oil and gas production and refining, sewage treatment plants, and confined animal feeding operations. H2S is extremely hazardous in high concentrations and can cause death (SJVAPCD 2015a).

Sulfates

Sulfates are the fully oxidized, ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds result primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates is comparatively rapid and complete in urban areas of California due to regional meteorological features (SJVAPCD 2015a).

CARB's sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels that exceed the standard include decreased ventilatory function,

aggravation of asthmatic symptoms, and increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property (SJVAPCD 2015a).

Vinyl Chloride

Vinyl chloride is a colorless gas that does not occur naturally; it is formed when substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC), which is used in plastic products such as pipes, wire and cable coatings, and packaging materials (SJVAPCD 2015a).

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Hundreds of different types of TACs exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk free. Examples of TAC sources associated with the Proposed Project are fossil fuel combustion sources.

Sources of TACs include stationary sources, area-wide sources, and mobile sources. USEPA maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are included on CARB's list of TACs along with additional chemicals identified as TACs in California (CARB 2021a). According to the California Almanac of Emissions and Air Quality (CARB 2013), many researchers consider DPM to be a primary contributor to health risk from TACs because particles in the exhaust carry many harmful organics and metals, rather than being a single substance, as are other TACs. Unlike many TACs, outdoor DPM is not monitored by CARB because no routine measurement method exists. Using the CARB emission inventory's PM10 database, ambient PM10 monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (Office of Environmental Health Hazard Assessment [OEHHA] 2001).

The TACs associated with operation of the Proposed Project include fossil fuel combustion TACs, including DPM for diesel equipment and gasoline TACs such as benzene, 1,3-butadiene, ethylbenzene formaldehyde, hexane, propylene, toluene and xylenes. Natural gas combustion is associated with the TACs acetaldehyde, benzene, ethylbenzene, formaldehyde, hexane, toluene, naphthalene, and xylenes. The crematory would have a combination of natural gas combustion TACs and metals such as arsenic, beryllium, cadmium, hexavalent chromium, copper, lead, mercury, nickel selenium and zinc from animal tissue. The existing Turlock Laboratory uses several different chemicals that can be released due to evaporation. Details of the specific quantities are shown in Appendix C, *Air Quality Pollutant Emissions, Greenhouse Gas Emissions, and Energy Use Calculations*, and further described in Appendix D, *Human Health Risk Assessment and Supporting Documentation*. For detailed summary of the health

effects of these various TACs can be found on CARB's Toxic Air Contaminant Identification Reports (CARB 2021a).

5.3.4 Existing Air Quality Conditions

USEPA, CARB, and local air districts operate an extensive air monitoring network to measure progress toward attainment of the NAAQS and CAAQS. The closest air monitoring station to the project area is the Turlock S. Minaret Street station. **Table 5-1** shows the most recent 3 years (2017 to 2019) of available data.

Attainment Status

CARB and USEPA have established the CAAQS and NAAQS, respectively, in an effort to protect human health and welfare. Geographic areas are deemed to be in attainment if these standards are met or in nonattainment if they are not met. "Unclassified" areas are areas that cannot be classified on the basis of available information as meeting or not meeting the primary or secondary NAAQS for the pollutant. Nonattainment status is classified by the severity of the nonattainment problem. For ozone, these classifications are marginal, moderate, serious, severe, and extreme nonattainment. Nonattainment classifications for PM range from marginal to serious. **Table 5-2** shows the current attainment status for the NAAQS and CAAQS. The area is designated as nonattainment for federal and state ozone and PM2.5 standards and as nonattainment for the state PM10 standard.

Table 5-1. Air Monitoring Data for 2017-2019

Monitoring Station	Pollutant Standard	2017 No. Exceed*	2017 Maximum Concentration	2018 No. Exceed*	2018 Maximum Concentration	2019 No. Exceed*	2019 Maximum Concentration
Turlock S. Minaret Street	Ozone – 1-hr	0/3	0.1114 ppm	0/7	0.108 ppm	0/0	0.090 ppm
Turlock S. Minaret Street	Ozone – 8-hr	31/31	0.099 ppm	26/28	0.095ppm	13/13	0.082 ppm
Turlock S. Minaret Street	NO_2 – 1-hr	0/0	58.6 ppb	0/0	67.2 ppb	0/0	59.1 ppb
Turlock S. Minaret Street	NO_2 – Annual	–	9	–	9	–	8
Turlock S. Minaret Street	PM10 – 24-hr	0/91.8	111.7 µg/m^3	6.1/79.6	250.4 µg/m^3	0/60.5	98.4 µg/m^3
Turlock S. Minaret Street	PM10 – Annual	NA	36.9 µg/m^3	NA	37.5 µg/m^3	NA	30.6 µg/m^3
Turlock S. Minaret Street	PM2.5 – 24-hr	29.2/-	72.3 µg/m^3	25.7/-	187.3 µg/m^3	8.3/-	40.7 µg/m^3
Turlock S. Minaret Street	PM2.5 – Annual	NA	12.7 µg/m^3	NA	17.2 µg/m^3	NA	10.6 µg/m^3

Notes: hr = hour; NA = not available (insufficient or no data available); NO_2 = nitrogen dioxide; PM = particulate matter; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

* Indicates the number of exceedance days recorded annually at this monitoring station for a particular constituent compared to that constituent's NAAQS and CAAQS. The first number is the state value and the second number is the federal value if they are different. National maximum used.

No data were available in Stanislaus County during 2017-2019 for carbon monoxide, sulfur dioxide, and hydrogen sulfide.

Source: CARB 2021c

Table 5-2. Attainment Status of the San Joaquin Valley Air Basin (within Stanislaus County) for the State and Federal Ambient Air Quality Standards

Contaminant	Averaging Time	Concentration	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Ozone (O3)	1-hour	0.09 ppm	N (Severe)	See footnote 3
	8-hour	0.070 ppm	N	
		0.075 ppm		N (Extreme)
Carbon Monoxide (CO)	1-hour	20 ppm	U/A	
		35 ppm		U/A
	8-hour	9.0 ppm	U/A	U/A
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	A	
		0.100 ppm[5]		U/A
	Annual arithmetic mean	0.030 ppm	A	
		0.053 ppm		U/A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	
		0.075 ppm		U/A
	24-hour	0.04 ppm	A	
		0.14 ppm		U/A
	Annual arithmetic mean	0.030 ppm		U/A
Particulate Matter (PM10)	24-hour	50 µg/m^3	N	
	24-hour	150 µg/m^3		A
	Annual arithmetic mean	20 µg/m^3	N	
Fine Particulate Matter (PM2.5)	24-hour	35 µg/m^3		N (Moderate)
	Annual arithmetic mean	12 µg/m^3	N	N (Moderate)
Sulfates	24-hour	25 µg/m^3	A	

Contaminant	Averaging Time	Concentration	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Lead (Pb)[6]	30-day average	1.5 µg/m^3	A	
Hydrogen Sulfide (H2S)	1-hour	0.03 ppm	U	
Vinyl Chloride[6] (chloroethene)	24-hour	0.010 ppm	A	
Visibility-Reducing Particles	8-hour (10:00 to 18:00 PST)	See footnote 4	U	

A – attainment
N – nonattainment
U – unclassified
ppm – parts per million
µg/m3 – micrograms per cubic meter
PST – Pacific Standard Time
km – kilometer
PM10 – particulate matter of aerodynamic radius of 10 microns or less
PM2.5 – particulate matter of aerodynamic radius of 2.5 microns or less

Notes:

[1] California standards for O_3, CO (except Lake Tahoe), SO_2 (1-hour and 24-hour averages), NO_2, PM10, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe CO, Pb, H2S, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for Pb and the PM2.5 and PM10 annual standards), some measurements may be excluded. In particular, measurements are excluded that the CARB determines would occur an average of less than once per year.

[2] National standards shown are the "primary standards" designed to protect public health. National air quality standards are set by the USEPA at levels determined to be protective of public health with an adequate margin of safety. National standards other than for O_3, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour O_3 standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is less than or equal to one. The 8-hour O_3 standard is attained when the 3-year average of the fourth highest daily concentrations is 0.075 ppm (75 parts per billion) or less. The 24-hour PM10 standard is attained when the 3-year average of the ninety-ninth percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour PM2.5 standard is attained when the 3-year average of ninety-eighth percentiles is less than 35 µg/m^3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met by spatially

averaging annual averages across officially designated clusters of sites and then determining whether the 3-year average of these annual averages falls below the standard.

[3] The national 1-hour O_3 standard was revoked by USEPA on June 15, 2005. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. However, the attainment status has not yet been updated based on this revised 8-hour standard. It is likely that the region will remain in nonattainment.

[4] Statewide Visibility-Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per km when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment resulting from regional haze and is equivalent to a 10-mile nominal visual range.

[5] To attain this standard, the 3-year average of the ninety-eighth percentile of the daily maximum 1-hour average at each monitoring station within an area must not exceed 0.100 ppm (effective January 22, 2010).

[6] CARB has identified Pb and vinyl chloride as toxic air contaminants with no threshold level of exposure below which there are no adverse health effects determined. Although the vinyl chloride CAAQS remains in force, current regulatory efforts are under CARB's Air Toxics Program.

Sources: SJVAPCD 2021c, CARB 2021b, USEPA 2021

5.3.5 Sensitive Receptors

Sensitive receptors are those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with serious pre-existing health problems affected by air quality (e.g., asthma) (CARB 2005). Examples of locations that contain sensitive receptors are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences include houses, apartments, and senior living complexes. Medical facilities can include hospitals, convalescent homes, and health clinics. Playgrounds include play areas associated with parks or community centers. There are a few residences located across the street along Dianne Drive. A list of non-residential sensitive receptors within 2 kilometers of the proposed project are shown in **Table 5-3**.

Table 5-3. Sensitive Receptor Locations

Name	Address
Atch Pedretti Park	2918 West Tuolumne Road
Centennial Park	Pinto Way
Osborn Elementary School	201 North Soderquist Road
John B. Allard School	350 North Kilroy Road
Summerfaire Park	North Soderquist Road and Fulkerth Road

Name	Address
Soderquist Ballfield	North Soderquist Road and Flower Street
Donnelly Park	Donnelly Park Drive and West Hawkeye Avenue
Walter M Brown Elementary	1400 Georgetown Avenue
Kids Community Campus LLC	2490 North Walnut Road
Pruitt Family Daycare	2325 Gala Court #8421
Columbia Park	Farr St and Columbia Avenue
Turlock Nursery School	415 Grant Avenue
Central California Child Development Services - Turlock Child Development Center	400 North Kilroy Road
Stable Living (Adult Day Care)	2380 North Walnut Road

5.3.6 Valley Fever

Valley Fever, also known as coccidioidomycosis, is an increasing health concern in the southern central valley and central coast of California. It is caused by a fungus that grows in certain types of soil; it can cause respiratory symptoms when breathed in, especially when soil is disturbed by digging or wind. Most infected people will not show signs of illness. Those who do become ill with Valley Fever often have a flu-like illness that can last for two weeks or more. While most people recover fully, some may develop more severe disease or complications of Valley Fever such as infection of the brain, joints, bone, skin, or other organs. Stanislaus County has had increasing number of reported cases of Valley Fever. In 2017, 129 cases of Valley Fever were reported (Stanislaus County Health Services Agency [SCHSA] 2018).

5.4 IMPACT ANALYSIS

5.4.1 Methodology

Construction-Related Emissions

The Proposed Project construction-related emissions were modeled using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2. Project-specific construction parameters (e.g., construction schedule, total acres disturbed, quantity of import material, amount of development per land use) were used as inputs in the air quality analysis. Construction was modeled to begin in January 2022 and last approximately 30 months, through June 2024, with construction typically occurring five days per week. While this construction duration may be inclusive on times during which heavy-duty equipment and construction

vehicles would not be used, the emissions estimates reflect a conservative estimate of construction occurring for the entirely of the 30 months. Construction phases were based upon CalEEMod default phases for land use development, with phase durations scaled to the anticipated project construction duration of 30 months and assuming some overlap of paving and architectural phases with the building construction activities; this is considered a conservative approach to construction phasing, as it extends the building construction phase and results in an increase in total annual emissions. Demolition was not modeled, as the existing site would be decommissioned to allow for future use, but not demolished. Removal of the existing agricultural irrigation utilities at the Proposed Project site is considered captured as a part of site preparation and does not fit the expectation of demolition as it would be modeled in CalEEMod. Construction equipment type, number of pieces, horsepower, and load factor reflect CalEEMod default data inputs for a project of this size. An air compressor was added to the site preparation phase to reflect anticipated equipment requirements, as noted in Chapter 2, *Project Description*, for utility trenching.

The site is anticipated to be balanced, with no requirement for import or export of fill materials. Approximately 2,000 cubic yards of material and/or soil import was accounted for to serve landscaping purposes. Assuming 16 cubic yards per truck trip, consistent with CalEEMod defaults, a total of 125 trucks (250 one-way truck trips to and from the project site) were accounted for and modeled with the architectural coating phase. While these trucks would serve landscaping purposes and not architectural coating, this captured the emissions from this activity in the latter portion of the construction phases. Worker and truck trips for construction activities were otherwise modeled using CalEEMod defaults, with an additional two trucks (4 one-way trips to and from the project site) to account for water trucks during ground disturbing activities (site preparation and grading phases).

Where project-specific information was otherwise not available, default parameters provided by each model were used. It should be noted that default assumptions in the models are typically conservative to avoid underestimating emissions when project-specific information is not available.

Operational Emissions

The Proposed Project operational emissions were quantified according to guidance and methods from SJVAPCD, CARB, and USEPA as referenced above. The process for determining the parameters and assumptions used to model these emissions, along with the modeling methods, are described below.

Operational activities that would result in the emissions of air pollutants and GHGs include operation of the animal crematory, an emergency generator, a three-cell cooling tower, various water heaters and boilers, vented emissions from laboratory operations, and miscellaneous storage tanks. The existing workforce will be increased to support future operations; the operational analysis assumes that 17 additional workers will be needed to support operations related to this project. Stationary Combustion Sources

Combustion emission sources include two natural-gas fired domestic heaters with a heat rating of 0.1 million British thermal units (MMBtu) per hour per heater, two natural-gas fired laboratory heaters with a heat rating of 0.5 MMBtu per hour per heater, three natural-gas fired boilers with a heat rating of 0.75 MMBtu per hour per boiler and a 500-kilowatt-rated diesel-fired emergency generator.

Emissions from operation of the proposed heaters and boilers would meet the standards detailed in SJVAPCD Rule 4308 for Boilers, Steam Generators and Process Heaters 0.075 MMBtu per hour to less than 2.0 MMBtu per hour. The boilers and heaters would have burners capable of achieving 20 ppm NOx by volume dry at 3 percent O_2 (0.024 pound per MMBtu). TACs to be generated during operation of the boilers and heaters were estimated using emission factors that were obtained from the SJVAPCD's Emission Factors Web site and based on Ventura County Air Pollution Control District (VCAPCD) AB 2588 Combustion Emission Factors. Operation of the boilers and heaters was assumed to have no restrictions, i.e., to operate 24 hours per day, 8,760 hours per year.

Diesel emergency generator emissions were estimated using USEPA nonroad compression-ignition engine emission standards for Tier 4 engines, and sulfur content for ultra-low sulfur diesel (ULSD). Diesel generator TACs were estimated using emission factors from USEPA AP-42 Section 3.4 for Large Stationary Diesel Engines. The generator was assumed to operate for 24 hour a day for up to 100 hours a year for testing and maintenance purposes. The emergency generator was assumed to operate at approximately 73 percent load, per the default load factor in CalEEMod.

Emissions associated with the animal cremator originate from four 1.0 MMBtu per hour primary and one 2.25 MMBtu per hour secondary natural gas-fired burners and the animal charges. Criteria air pollutant and ROG emissions were estimated using San Diego Air Pollution Control District (SDAPCD) guidance document *C02 –Crematories, Natural Gas Fired, Animal Remains, Controlled Air* or based on current permit limits, whichever was more stringent (SDAPCD 1999). Speciated TAC emissions were estimated using emission factors that were obtained from the SJVAPCD emission factors web site and based on SDAPCD's 1993 profile "Crematory and Incinerator Operations," test data from 1990 University of California San Diego Medical Center AB 2588 Source Testing. It was assumed that there would be up to two charges of 1,250 pounds per day of remains. The animal cremator is limited by permit conditions to 16 hours per day and 237 days per year of operation.

Mobile Sources

The operational analysis assumes that 17 additional workers will be needed to support operations related to this the Proposed Project, along with an increase in trips associated with walk-ins and deliveries. Trip distances were derived from the Transportation Study developed for the Proposed Project. Mobile-source emissions related to these vehicle trips and the associated fugitive dust (brake wear, tire wear, and re-entrained roadway dust) from vehicle trips were estimated using CalEEMod, with the default trip rates and distances adjusted to

reflect the above-noted project-specific data inputs. Note that, for the purposes of modeling emissions in CalEEMod to reflect the vehicle miles traveled (VMT) estimates provided by the Traffic Study for the Proposed Project, the 'Trip Purpose' inputs in CalEEMod were revised to account for 100 percent of trips as primary trips, thereby not resulting in a discounted VMT by the CalEEMod model for diverted or pass-by trips. In addition, the VMT outputs from CalEEMod are slightly higher than those provided in the traffic study for the Proposed Project, as the traffic study accounted for daily worker commute trips, but not the intermittent walk-in or delivery vehicle trips, which were accounted for in the estimates of air pollutant and greenhouse gas emissions as they may not contribute to traffic impacts due to the intermittent nature of such trips, but would contribute to annual operational emissions resulting from the Proposed Project.

Other Operational Equipment Sources

The other equipment sources of operational emissions include the cooling tower, fugitive vented emissions related to chemicals used for laboratory operations, and storage tanks and vessels.

Estimated emissions from the cooling tower are based on the default particulate matter emission factor from South Coast Air Quality Management District (SCAQMD) for cooling towers used strictly for HVAC purposes. The particle size distribution profile used to estimate particulate matter with aerodynamic diameter less than 10 microns (PM10) and particulate matter with aerodynamic diameter less than 2.5 microns (PM2.5) emissions is from the CARB Appendix A "Updated CEIDARS Table with PM2.5 Fractions". The nickel emission factor is from SCAQMD guidance.

Fugitive emissions from the venting of laboratory chemicals were estimated using chemical usage data from a similar laboratory (Tulare), scaled by laboratory building size, and known evaporative loss factors.

Storage tanks and vessels associated with operations store miscellaneous materials including ethanol, formalin, diesel, etc. Each tank or vessel is below the low emitting unit threshold of 2 pounds per day (SJVAPCD 2020). Due to a lack of physical tank characteristic information needed to estimate emissions more precisely from these tanks, ROG emissions from storage tanks and vessels were conservatively assumed to be 2 pounds per day per tank for all tanks other than the diesel storage tank. Diesel storage tank characteristics were determined using capacity and dimension information in the emergency generator specification sheet. Annual throughput for the diesel tank was assumed to be 4,800 gallons, based on approximately 24 gallon per hour fuel consumption (per the generator specification sheet) for 200 hours. ROG for the diesel storage tank was estimated using TankESP, which estimates storage tank emissions using inputs and equations from AP-42 Section 7.1. TACs from the diesel storage tank were speciated from ROG emissions using SJVAPCD guidance, which refers to the 1993 District memo "Diesel Storage Weight Fractions," test data from source tests of 75 crude oil storage tanks in

the southern region. TACs from other storage tanks were estimated using the liquid speciation profile of the contents within the storage tanks.

Energy Emissions Sources

Operations would also result in an increase of natural gas demand. Natural gas demand were estimated based on the electricity and natural gas consumption data for the existing Tulare laboratory, and scaled based on the relative square footage of that facility and the proposed facility. Emissions associated with electricity and natural gas consumption were calculated outside of CalEEMod. Indirect GHG emissions associated with electricity were estimated using intensity factors from the "CalEEMod User Guide Appendix D_2020-4-0" for TID. Direct criteria air pollutant and GHG emissions from natural gas consumption were calculated using natural gas emission factors of "Appendix D_2020-04-0 Default Data Tables" for CalEEMod.

Health Risk Assessment

Construction

During construction, DPM and gasoline fuel combustion emissions that are classified as TACs would be generated by construction equipment. The construction period for the Proposed Project is relatively short (approximately 22 months). Because of the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operating within an influential distance that would result in the exposure of sensitive receptors to substantial pollutant concentrations. Chronic and cancer-related health effects estimated over short periods are uncertain; cancer potency factors are based on animal lifetime studies or worker studies with long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from exposure that would last only a small fraction of a lifetime. Some studies indicate that the dose rate could change the potency of a given dose of a carcinogenic chemical. In other words, a dose delivered over a short period might have a different potency than the same dose delivered over a lifetime (OEHHA 2015). Furthermore, construction impacts are most severe adjacent to the construction area and decrease rapidly with increasing distance away from the construction area. Concentrations of mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005).

Operation

A quantitative health risk assessment (HRA) was conducted for operational emissions since there are several stationary sources and other laboratory chemicals that will emit into the ambient air. Appendix D contains further details of this HRA. Several types of sensitive receptors are present near the project site as shown in Table 5-3. To evaluate the impacts of TACs on nearby sensitive receptors, an HRA was conducted consistent with OEHHA guidance (OEHHA 2015) for determining local community risks and hazards. The HRA is a process

followed to evaluate the health risks associated with the Proposed Project. The HRA involved estimating emissions of TACs, followed by air dispersion modeling using the AERMOD modeling program to estimate ambient air concentrations at various distances from the source. After the ambient air concentrations were determined, these were combined with exposure parameters and toxicity information to determine health impacts on nearby sensitive receptors.

This assessment included TACs associated with the crematory which incinerates animal carcasses, use of the emergency generator for testing and maintenance, combustion of natural gas in the boilers and heaters, nickel in cooling water tower additives, evaporation of laboratory chemicals and tanks, and TACs associated with vehicles.

Sources are represented as point sources, area sources, volume sources or line sources. Each of these source types is characterized by source parameters such as release height, exit velocity, and temperature. These sources are spatially represented as well as the spatial location of receptors. This spatial and source characterization and meteorological data is used by the USEPA approved air dispersion model AERMOD version 2112. The meteorological data was from Modesto Airport and Oakland International Airport for upper air data from 2013-2017 as processed by SJVAPCD.

The results of the air dispersion analysis are combined with exposure parameters used to estimate the dose of chemicals that will be used to estimate excess lifetime cancer risks and non-cancer Hazard Index (HI) for all potentially exposed populations were obtained using risk assessment guidelines from OEHHA (2015).

The inhalation dose is a function of the concentration of a chemical and the intake of that chemical. The dose can be calculated as follows:

$$Dose = \frac{Conc * DBR * ET * EF * ED * CF}{AT}$$

Where:

Dose	=	Dose of chemical (milligrams per kilogram-day [mg/kg-day])
Conc	=	Chemical concentration in air (micrograms per cubic meter [µg/m3])
DBR	=	Daily Breathing Rate (liters per kilogram-day [l/kg-day])
ET	=	Exposure Time (hours/day)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days)
CF	=	Conversion Factor (cubic meters per liter [m^3/l] and milligrams per microgram [mg/µg])

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For

purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories: cancer and non-cancer endpoints. Toxicity values, used to estimate the likelihood of adverse effects occurring in humans at different exposure levels, are identified as part of the toxicity assessment component of a risk assessment.

Excess lifetime cancer risks are estimated as the upper-bound incremental probability[1] that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs if the chemical is being inhaled) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_i = Dose * CPF_i * ASF$$

Where:

$Risk_i$	=	Cancer Risk, the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
Dose	=	Dose of chemical (mg/kg-day)
CPF_i	=	Cancer Potency Factor for Chemical I (mg chemical/kg body weight-day)$^{-1}$
ASF	=	Age Sensitivity Factor (unitless)

The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific non-cancer chronic reference exposure level (RELs). When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding an HI.

[1] The upper-bound incremental probability means that the "true carcinogenic risk" of an individual is unlikely to exceed the model-derived cancer risk estimates and, therefore, is likely to be less than the predicted (modeled) risk (USEPA 2012). Thus, the modeled cancer risks would represent a conservative scenario.

The equations used to calculate the chemical-specific HQs and the overall HI are:

$$Chronic\ HQ_i = C_i/REL_i$$

$$Chronic\ HI = \sum HQ_i$$

Where:

Chronic HQ_i	=	Chronic Hazard Quotient for $Chemical_i$ (unitless)
Chronic HI	=	Hazard Index (unitless)
C_i	=	Annual average air concentration for $Chemical_i$ (µg/m^3)
REL_i	=	Chronic Non-cancer Reference Exposure Level for $Chemical_i$ (µg/m^3)

Only those chemicals that affect the same end target organ or system are combined together. Acute non-cancer impacts were estimated in a similar manner to chronic non-cancer impacts, by estimating the HQs for all chemicals and summing them to yield an HI.

Odors

Odor impacts for construction and operation were evaluated qualitatively based primarily on the likelihood of the planned facility resulting in any substantial odors.

Plans and Policies

To determine whether the Proposed Project would be consistent with existing air quality plans, the analysis examines whether the Proposed Project would be consistent with relevant general or specific plans upon which the air quality plans are based.

5.4.2 Criteria for Determining Significance

The Proposed Project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

SJVAPCD Thresholds

The SJVAPCD's recommended CEQA thresholds are outlined in its *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a) and summarized in **Table 5-4**. The SJVAPCD's thresholds for ROG and NOx, which are ozone precursors, are 10 tons per year for each pollutant. Ozone precursor emissions are generated from both heavy- and light-duty vehicle use. The SJVAPCD has determined that projects with emissions below the thresholds of significance for criteria pollutants would be considered to be in compliance with the applicable SJVAPCD air quality plans (SJVAPCD 2015a). CDFA has adopted the SJVAPCD CEQA thresholds for purposes of evaluating potential environmental impacts of the Proposed Project.

According to SJVAPCD's guidance, impacts of operational and construction-related emissions are considered to be less than significant if fugitive dust (PM10 and PM2.5) emissions are below the significance levels listed in Table 5-4. In addition, SJVAPCD Regulation VIII requires all projects that involve earthmoving or travel on unpaved roads to implement fugitive dust control measures. Implementation of these control measures would be sufficient to reduce PM10 and PM2.5 impacts to a level considered less than significant.

These threshold limits apply to the annual emissions, and apply separately to construction, operational permitted sources and activities, and operational non-permitted activities. In other words, a project can emit up to 10 tons of NOx during construction, 10 tons of NOx from permitted activities, and an additional 10 tons of NOx from non-permitted activities for a total of 30 tons of NOx emissions and still be under the CEQA significance threshold to be considered less than significant.

Table 5-4. Applicable SJVAPCD Construction and Operational Significance Thresholds under CEQA

Pollutant	Construction Emissions Threshold (tons/year)	Operational Permitted Activities (tons/year)	Operational Non-permitted activities (tons/year)
Carbon monoxide (CO)	100	100	100
Oxides of nitrogen (NOx; ozone precursor)	10	10	10
Reactive organic gases (ROG; ozone precursor)	10	10	10
Sulfur oxides (SOx)	27	27	27
Particulate matter (PM10)	15	15	15
Fine particulate matter (PM2.5)	15	15	15

Source: SJVAPCD 2015a

The following quantitative TAC thresholds of significance are identified in the *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015a), with implementation of the latest revisions to SJVAPCD's risk management policy (SJVAPCD 2021d) also serving as revisions to the CEQA thresholds:

- Probability of contracting cancer for the maximally exposed individual (MEI) exceeds 20 in 1 million, or
- Ground-level concentrations of non-carcinogenic TACs result in a hazard index greater than 1 for the MEI.

Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operating within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Chronic and cancer-related health effects estimated over short periods are uncertain. Cancer potency factors are based on animal lifetime studies or studies of workers with long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from exposure that would last only a small fraction of a lifetime. Some studies indicate that the dose rate may change the potency of a given dose of a carcinogenic chemical. In other words, a dose delivered over a short period may have a different potency than the same dose delivered over a lifetime (OEHHA 2017). Given that the construction period for the Proposed Project, which is approximately 30 months would not involve the use of substantial quantities of construction equipment, a qualitative analysis was determined to be the appropriate level of detail required to determine the impact of potential TAC emissions.

For operational TAC emissions, the facility is required to be below the health effects quantitative thresholds in order to obtain the required operating permits consistent with SJVAPCD regulations regarding permitted sources. A quantitative health risk assessment was conducted to determine if the stationary sources at the facility would be able to meet these standards or if they would be required installation of additional pollution control equipment in order to meet the thresholds for cancer risk, chronic HI, and acute HI.

5.4.3 Environmental Impacts

Impact AQ-1: Potential for the Proposed Project to Conflict with or Obstruct Implementation of an Applicable Air Quality Plan — Less than Significant

The SJVAB is in nonattainment for the federal standards for ozone (8 hour) and PM2.5. The SJVAB is also in nonattainment for the state standards of ozone (1 hour and 8 hour), and PM2.5. Therefore, the SJVAPCD has prepared attainment plans for the SJVAB in order to demonstrate achievement of the state and federal ambient air quality standards. The attainment plans have

been approved by CARB and have been incorporated into the State Implementation Plan (SIP). The air quality plans in effect are listed below:

- 2013 Plan for the Revoked 1-hour Ozone Standard
- 2016 Ozone Plan for the 8-hour Ozone Standard
- 2007 PM10 Maintenance Plan and Request for Redesignation
- 2016 Moderate Area Plan for the 2012 PM2.5 Standard

The SJVAPCD has published a *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), which is an advisory document that provides local jurisdictions with procedures for addressing air quality impacts in environmental documents. The guide includes methods for assessing air quality impacts, thresholds of significance, and recommended mitigation measures. The GAMAQI was written such that projects evaluated to have impacts less than the thresholds of significance would not have significant impacts to air quality and would not conflict with or obstruct implementation of the region's air quality plans. Because the air quality plans account for growth, projects that are consistent with the thresholds and mitigation measures in the GAMAQI are consistent with the SJVAPCD's adopted air quality plans.

In addition, air pollution sources associated with stationary sources are regulated through the permitting authority of the SJVAPCD under the "New Source" rule (SJVAPCD Rule 2201). Owners of any new or modified equipment that emits, reduces, or controls air contaminants, except those specifically exempted by the SJVAPCD, are required to apply for an Authority to Construct and Permit to Operate (SJVAPCD Rule 2010). Additionally, best available control technology is required on specific types of stationary equipment. Through this mechanism, the SJVAPCD ensures that all stationary sources within the project area would be subject to the standards of the SJVAPCD and that new developments do not result in net increases in stationary sources of criteria air pollutants. These requirements would apply to the stationary sources associated with the project (e.g., cremator, boiler, and generator) unless specifically exempt from SJVAPCD Authority to Construct and Permit to Operate requirements under Rule 2020.

As discussed in the following section, the emissions from the construction and operation of the project would not exceed the emission thresholds established by the SJVAPCD. The project would also comply with the SJVAPCD's permitting and best available control technology requirements. Therefore, for these reasons, the Proposed Project would not conflict with or obstruct implementation of the SJVAPCD's adopted air quality plans and project implementation would have a **less-than-significant impact** with respect to this criterion.

Impact AQ-2: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard — Less than Significant

As shown in Table 5-2, the project site is in a region that is designated in non-attainment for ozone, lead, PM10, and PM2.5. It is assumed that projects that do not have mass emissions exceeding the screening level significance thresholds would not create a cumulatively considerable net increase in emissions.

During construction of the Proposed Project, the combustion of fossil fuels for construction equipment, material hauling, and worker trips would result in criteria air pollutant emissions. Emissions were estimated using the CalEEMod Version 2016.3.2 using information from the Project Description along with site-specific and default assumptions. The Proposed Project's criteria air pollutant emissions during construction are shown in **Table 5-5**. CalEEMod and other supporting calculations and modeling results for the Proposed Project are provided in **Appendix C,** *Air Quality Pollutant Emissions, Greenhouse Gas Emissions, and Energy Use Calculations*.

Table 5-5. Maximum Annual Construction Emissions (tons/year)

	ROG	NOx	CO	SO_2	PM10	PM2.5
2022	0.3	2.7	2.6	0.0	0.6	0.3
2023	0.3	2.3	2.6	0.0	0.3	0.1
2024	0.4	0.6	0.7	0.0	0.1	0.0
Maximum Annual emissions, Construction	**0.4**	**2.7**	**2.6**	**0.0**	**0.6**	**0.3**
SJVAPCD significance threshold	10	10	100	27	15	15
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: tons/year = tons per year; ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District.

Source: Modeling conducted by AECOM in 2021; see Appendix C for detailed modeling assumptions, outputs, and results.

Construction emissions are below the applicable SJVAPCD thresholds of significance for the criteria pollutants.

Operation of the Proposed Project will emit criteria air pollutants from various sources. This includes vehicles traveling to the site, operation of stationary sources including the cremator,

emergency generator, and boilers. The use of various chemicals some of which are VOCs will be emitted due to solvent evaporation and other fugitive emissions. Combustion of natural gas will occur in some of the stationary sources as well as for building HVAC, water heating and laboratory uses. The Proposed Project's criteria air pollutant emissions from these various sources during operation are shown in **Table 5-6**. CalEEMod and other supporting calculations and modeling results for the Proposed Project are provided in Appendix C.

Table 5-6. Operational Annual Emissions (tons/year)

Emissions Source	ROG	NOx	CO	SO_2	PM10	PM2.5
Area	0.24	0.00	0.00	0.00	0.00	0.00
Energy	0.03	0.30	0.08	0.00	0.02	0.02
Mobile	0.04	0.33	0.59	0.00	0.24	0.07
Stationary Sources	2.27	1.53	1.61	0.01	2.56	2.56
Annual Operational Emissions	**2.58**	**2.16**	**2.29**	**0.02**	**2.82**	**2.64**
SJVAPCD Thresholds of Significance	10	10	100	27	15	15
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: This contains emissions from activities that are not permitted. It does not include units which are exempt from permitting as insignificant units. Per SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts, permit exempt units do not need to be quantified.

Operational emissions were modeled for year 2024. Total emissions may not add correctly due to rounding.

tons/year = tons per year; ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District.

Source: Modeling conducted by AECOM in 2021; see Appendix C for detailed modeling assumptions, outputs, and results.

Operational emissions are below the applicable SJVAPCD thresholds of significance for the criteria pollutants. These thresholds are established to determine that the Proposed Project is not likely to result in a substantial change to the ambient air quality even though the area may be in non-attainment for some air pollutants including ozone and PM. The ambient concentration of criteria pollutants is a result of complex atmospheric chemistry; models to determine the concentrations and related health effects of emissions of pollutant precursors and direct emissions which are not readily available at the project level. Such modeling would require detailed information not only about the project, but also about the other pollutants

being emitted in the region; this information is not widely available and, where it is available, its use would be speculative.

NOx and ROG are precursors to ozone, and NOx, ROG, and sulfur oxides (SOx) are precursors to secondarily formed PM2.5. Chemical and physical processes transform some of these precursors to the criteria pollutant concentrations in the atmosphere. Multiple variables determine whether emissions of air pollutants from the project move and disperse in the atmosphere in a manner in which concentrations of criteria pollutants would become elevated and result in health impacts.

A specific mass of precursor emissions does not equate to an equivalent concentration of the resultant ozone or secondary particulate matter in that area. The resulting health effects of ambient air concentrations are further based on a complex relationship of multiple variables and factors. The calculated health effects are dependent upon the concentrations of pollutants to which the receptors are exposed, the number and type of exposure pathways for a receptor, and the intake parameters for a receptor, which vary based upon age and sensitivity (e.g., presence of pre-existing conditions). Health effects would be more likely for individuals with greater susceptibility to exposure, and the location of receptors relative to the project impacts would affect whether receptors are exposed to project-related pollutants.

The following is a summary of the health effects from ozone, PM2.5, and PM10. Meteorology and terrain play major roles in ozone formation, and conditions for maximum ozone generation occur on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Central California can result in health effects. When inhaled, PM2.5 and PM10 can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM2.5 and PM10 can increase the number and severity of asthma attacks and cause or aggravate bronchitis and other lung diseases. Whereas PM10 tends to collect in the upper portion of the respiratory system, PM2.5 is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Health effects of PM2.5 include mortality (all causes), hospital admissions (respiratory, asthma, cardiovascular), emergency room visits (asthma), and acute myocardial infarction (non-fatal). For ozone, the endpoints are mortality, emergency room visits (respiratory), and hospital admissions (respiratory).

Both the construction and operational mass emissions are substantially lower than the mass emission screening level significance thresholds. Operational emissions shown above reflect estimated emissions from operations at the new facility. Since a portion of these emissions already take place under baseline conditions at the existing facilities, the increase in emissions over baseline would be even lower than the values provided above. Particulate matter emissions from the Proposed Project would be minimized through compliance with all of the SJVAPCD's applicable regulations, particularly Regulation VIII, which prescribes fugitive dust control requirements as well as other PM emission limits on the permitted stationary sources. NOx and ROG, which are ozone precursors, are below the mass emission screening level of

significance and controlled by engine emission standards, boiler regulations, organic solvent regulations, and new source review for the cremator. Therefore, the Proposed Project would have a **less-than-significant impact** and would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Impact AQ-3: Potential to expose sensitive receptors to substantial pollutant concentrations — Less than Significant with Mitigation

Construction

Sensitive receptors near the project site would potentially be exposed to various TACs during the Proposed Project's construction activities. The Proposed Project would result in emissions of DPM and gasoline fuel combustion pollutants from construction equipment use. As detailed above in the methods section for construction-related exposure of sensitive receptors, health effects from the Proposed Project's construction were not quantified because of the uncertainty of estimating chronic health effects over a short period, as well as the uncertainty associated with a screening-level (rather than a detailed) HRA.

Because emissions were not quantified and due to the presence of nearby sensitive receptors, the Proposed Project's TAC emissions have been conservatively assumed to have potential to expose sensitive receptors to substantial pollutant concentrations. Implementation of BMPs as identified in **Mitigation Measure AQ-1 (Implement Toxic Air Contaminant Control Measures)** would reduce the amount of construction emissions to the extent feasible through a combination of newer equipment, alternative fuel-powered equipment, after market emission control equipment, equipment maintenance, and work practices to minimize engine use. These construction practices would ensure that health effects from construction of the CHP Santa Barbara Area Office replacement facility would be minimized for nearby sensitive receptors. Therefore, the Proposed Project's effect on nearby sensitive receptors due to construction-related air pollutant emissions would be reduced to a level that is **less than significant with mitigation**.

> **Mitigation Measure AQ-1: Implement Toxic Air Contaminant Control Measures.**
>
> CDFA or its designee shall implement the following measures to minimize exposure of sensitive receptors to TACs.
>
> - Grid power (as opposed to generators) shall be used for jobsite power needs where feasible during construction.
> - Idling times shall be minimized, either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes as required by the California ATCM. Clear signage regarding this requirement shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

- The contractor(s) shall use construction equipment that minimizes air emissions to the extent feasible so that overall fleet emissions are less than or equal to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

- Conduct HRA following SJVAPCD permitting procedures once final building design and stationary source specifications are complete and obtain an authority to construct permit from the SJVAPCD for applicable stationary sources.

Operation

During Proposed Project operations, TACs could be emitted from the crematory, emergency generators, boilers, cooling water tower, chemicals stored and used at the facility, and motor vehicles traveling to and from the site.

Several types of sensitive receptors are present in the project area. To evaluate the impacts of the TACs on nearby sensitive receptors, an HRA was conducted consistent with OEHHA guidance (OEHHA 2015) for determining local community risks and hazards. Detailed information on the methods and data used to conduct the HRA is described in Appendix D Human Health Risk Assessment and Supporting Documentation. Table 5-7 and Table 5-8 shows the results of the HRA for the Proposed Project. All modeled receptors for cancer risk are well below the threshold of 20-in-a-million. For all groups, the maximum modeled Hazard Index (HI) are below the threshold of 1.0.

The results of this HRA are dependent on the assumptions used to represent the emissions and source parameters. Given that there is uncertainty with the final design since this is a design build project and since the acute HI is only slightly below 1.0 and required some adjustment to the placement of the site layout (but still within the overall project acreage) away from Dianne Drive and the nearby sensitive receptors, a detailed health risk assessment required to obtain SJVAPCD authority to construct permit for the stationary sources including the crematory, emergency generator and boilers is required under Mitigation Measure AQ-1 to ensure that final design of the building and sources still ensure that the cancer risk and hazard indexes are below the applicable thresholds which are codified in SJVAPCD permit rules. Therefore, the impact would be **less than significant with mitigation.**

Table 5-7. Results of Human Health Risk Assessment – Excess Cancer Risks (in-a-million)

Group	Exposure Period	PMI	MEIR/MEIW	Threshold[1]	Exceeds Threshold?
Resident	70-year	8.19	1.60[2]	20	No
Child	9-year	6.07	0.41[3]	20	No
Worker	40-year	3.20	0.55[4]	20	No

Notes: PMI = point of maximum exposure (located on southern edge of proposed project's property boundary); MEIR = maximally exposed individual resident; MEIW = maximally exposed individual worker.

[1] San Joaquin Valley Air Pollution Control District (SJVAPCD) threshold (SJVAPCD 2018).

[2] Receptor location (NAD83, UTM 10): x = 687297.19, y = 4152664.00

[3] Receptor location (NAD83, UTM 10): x = 687821.43, y = 4151964.07

[4] Receptor location (NAD83, UTM 10): x = 687297.19, y = 4152639.50

Table 5-8. Results of Human Health Risk Assessment-Non-Cancer Health Impacts

Group	Maximum Modeled HI	Threshold[1]	Exceeds Threshold?
Chronic Resident (Annual)	0.20	1.0	No
Chronic Resident (8-hour)	0.11	1.0	No
Chronic Worker (Annual)	0.09	1.0	No
Chronic Worker (8-hour)	0.11	1.0	No
Acute	0.93	1.0	No

Notes: PMI = point of maximum exposure (located on southern edge of proposed project's property boundary).

[1] San Joaquin Valley Air Pollution Control District (SJVAPCD) threshold (SJVAPCD 2018).

Impact AQ-4: Potential for construction to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people — Less than Significant

The Proposed Project's construction- and operation-related activities would emit the criteria pollutants discussed above as well as potentially odor-causing emissions. Diesel exhaust from construction activities may temporarily generate odors while construction of the Proposed Project is underway. Once construction activities have been completed, these odors would cease. Operational activities would also generate odors, mainly associated with gasoline and diesel fuel and exhaust; these odors would be short-lived and would occur intermittently. While the project would handle animal tissue, it would be stored and disposed of in accordance with applicable rules and procedures for veterinary and laboratory facilities. The SJVAPCD has compiled a list of potential odor sources in the GAMAQI. The SJVAPCD recommends that these types of facilities be located a certain distance away from sensitive receptors in order to minimize odor impacts. The land uses associated with this project are not ones that are typically odorous and are not routinely subject to SCAQMD Rule 402. Impacts related to potential other emissions adversely affecting a substantial number of people are thus expected to be **less than significant**.

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Chapter 6
Biological Resources

6.1 OVERVIEW

This chapter discusses the potential for the Proposed Project to affect biological resources, including special-status species, sensitive habitats, wetlands, and wildlife movement routes. The chapter also describes consistency with applicable plans and policies that protect these resources. Specifically, this chapter describes the existing environmental setting in the Proposed Project area, discusses federal and state regulations relevant to vegetation and wildlife resources that might be affected by the Proposed Project, identifies biological resources potentially affected by the Proposed Project, and proposes mitigation measures to avoid or reduce the potentially significant impacts on these resources.

6.2 REGULATORY SETTING

6.2.1 Federal Laws, Regulations, and Policies

Endangered Species Act

The Endangered Species Act (ESA) (16 United States [U.S.] Code [USC] Section 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC, Chapter 7, Subchapter II) protects migratory birds. Most actions that result in take of, or the permanent or temporary possession of, a migratory bird constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. USFWS is responsible for overseeing compliance with the MBTA.

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and wetlands.

Section 404 – Discharge of Dredged and Fill Materials into Waters of the United States

Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, vernal pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of U.S. Army Corps of Engineers (USACE) under the provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 – Water Quality Certification

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. and affect water quality. In California,USEPA has delegated its authority to the State Water Resources Control Board (SWRCB); the SWRCB, in turn, delegates implementation responsibility to the nine regional water quality control boards (RWQCBs) who will issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan; see discussion in "Porter-Cologne Water Quality Act" below). Applicants for a federal license or permit under CWA Section 404 to conduct activities that may result in the discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA.

6.2.2 State Laws, Regulations, and Policies

California Fish and Game Code

The California Fish and Game Code (CFGC) includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977, the California Endangered Species Act (CESA), prohibitions on the take of native and migratory birds, and conditions for alteration of lakes or streambeds.

The Native Plant Protection Act of 1977 (CFGC Sections 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

CESA (CFGC Sections 2050-2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. Section 2080 of the CFGC prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing the take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

CFGC Sections 3503 and 3513 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, CFGC identifies species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

CDFW regulates activities that will interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the CFGC requires that CDFW be notified of lake or streambed alteration activities. If CDFW subsequently determines that such an activity might adversely affect an existing fish and wildlife resource, it has the authority to issue a streambed alteration agreement, including requirements to protect biological resources and water quality.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) designates the SWRCB and RWQCBs as the State agencies with primary responsibility for water quality control in California and mandates them to address actions that can affect the quality of waters of the State. “Waters of the State” are defined as all surface water or groundwater within the boundaries of the state, including “isolated” waters and wetlands.

The SWRCB is the primary state agency responsible for protecting the quality of the state’s surface water and groundwater supplies. However, much of the SWRCB’s daily implementation

authority is delegated to the RWQCBs, which are responsible for implementing CWA Sections 401, 402, and 303(d) (which relates to impairment of water bodies).

The Porter-Cologne Act requires the RWQCBs to develop water quality control plans, also known as Basin Plans, which designate beneficial uses of California's major surface water bodies and groundwater basins. Basin Plan standards are implemented primarily by regulating waste discharges so that water quality objectives are met.

6.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

PG&E Habitat Conservation Plan

The *PG&E San Joaquin Valley Operation & Maintenance Habitat Conservation Plan* (O&M HCP) (PG&E 2006) covers specific PG&E activities throughout nine counties in the San Joaquin Valley, including Stanislaus County. The PG&E O&M HCP complies with the federal and state ESAs and addresses multiple species and critical habitats. The PG&E O&M HCP outlines steps on minimizing, avoiding, and compensating for possible direct, indirect, and cumulative adverse effects on threatened and endangered species that could result from PG&E operation and maintenance activities in the San Joaquin Valley. The Proposed Project is located within the PG&E O&M HCP boundaries; however, because it is not an activity conducted by PG&E, it is not a covered activity under the PG&E O&M HCP.

6.3 ENVIRONMENTAL SETTING

The Proposed Project site is located in Turlock, which is on the eastern side of California's San Joaquin Valley within the Central Valley, 100 miles east of the San Francisco Bay Area (City of Turlock 2012). The city is on the Hwy 99 corridor as is surrounded by productive agricultural land.

The site is an approximate 7-acre parcel that is located within a portion of an approximately 27-acre parcel. The Project site is bordered by Hwy 99 to the east, West Canal Drive to the south, Dianne Drive to the west, and an almond orchard to the north. TID's Upper Lateral No. 4 (canal) is located directly south of the site. The concrete-lined canal is used to convey and distribute irrigation water to farms throughout TID's service area. Beyond the canal to the south is a detention basin that is used to capture and hold runoff during stormwater events and is also proposed for open/space recreational use (City of Turlock 2017).

The Proposed Project site consists of agricultural row crop land that had been routinely maintained for this purpose prior to CDFA's purchase of the land in March 2020. At the time of the November 2020 biological reconnaissance field survey, the site had been recently disced. Ruderal vegetation consisting mostly of telegraph weed (*Heterotheca grandiflora*), Russian thistle (*Salsola tragus*), soft brome (*Bromus hordeaceus*), and mustard *(Brassica* sp.) were found on the site and along the site borders. No native vegetation communities or aquatic features occur within the site. The only existing structure on the site is an irrigation pumping/fertilizer facility, located in the southern section of the parcel. One almond tree is located along the northeast border of the site near Hwy 99. As such, suitable habitat for nesting birds could occur within the almond tree and within the denser areas of ruderal vegetation on the site. Additionally, rodent burrows observed in the berms located in the northeastern portion of the site could provide suitable habitat for burrowing owls. Ruderal vegetation, rodent burrows, and adjacent trees adjacent to the site could also provide suitable roosting or nesting habitat. The topography is flat with an elevation of approximately 90 feet above mean sea level.

Offsite utility improvements associated with the Proposed Project are likely to include connections to existing facilities along the west side of the site and within the Dianne Drive right-of-way. Installation of the proposed utilities is described in Section 2.4.2, "Construction Activities," in Chapter 2, *Project Description.*

6.3.1 Surveys and Methods

In preparation for the reconnaissance-level biological survey, a Horizon Water and Environment, LLC (Horizon) biologist collected data during database searches and reviewed aerial photographs and satellite imagery. A reconnaissance-level biological survey was conducted by a Horizon biologist on November 10, 2020. The purpose of the survey was to characterize existing conditions and assess the site's potential to support special-status species. Protocol-level botanical or wildlife surveys were not conducted at the Proposed Project site.

6.3.2 Special-Status Species

For the purposes of this DEIR, special-status plant and wildlife species are those species that meet one or more of the following criteria:

- Species that are listed as threatened or endangered under the ESA (50 CFR Section 17.12 for listed plants, 50 CFR Section 17.11 for listed animals);
- Species that are candidates for possible future listing as threatened or endangered under ESA (76 Federal Register [FR] Section 66370);
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR Section 670.5);

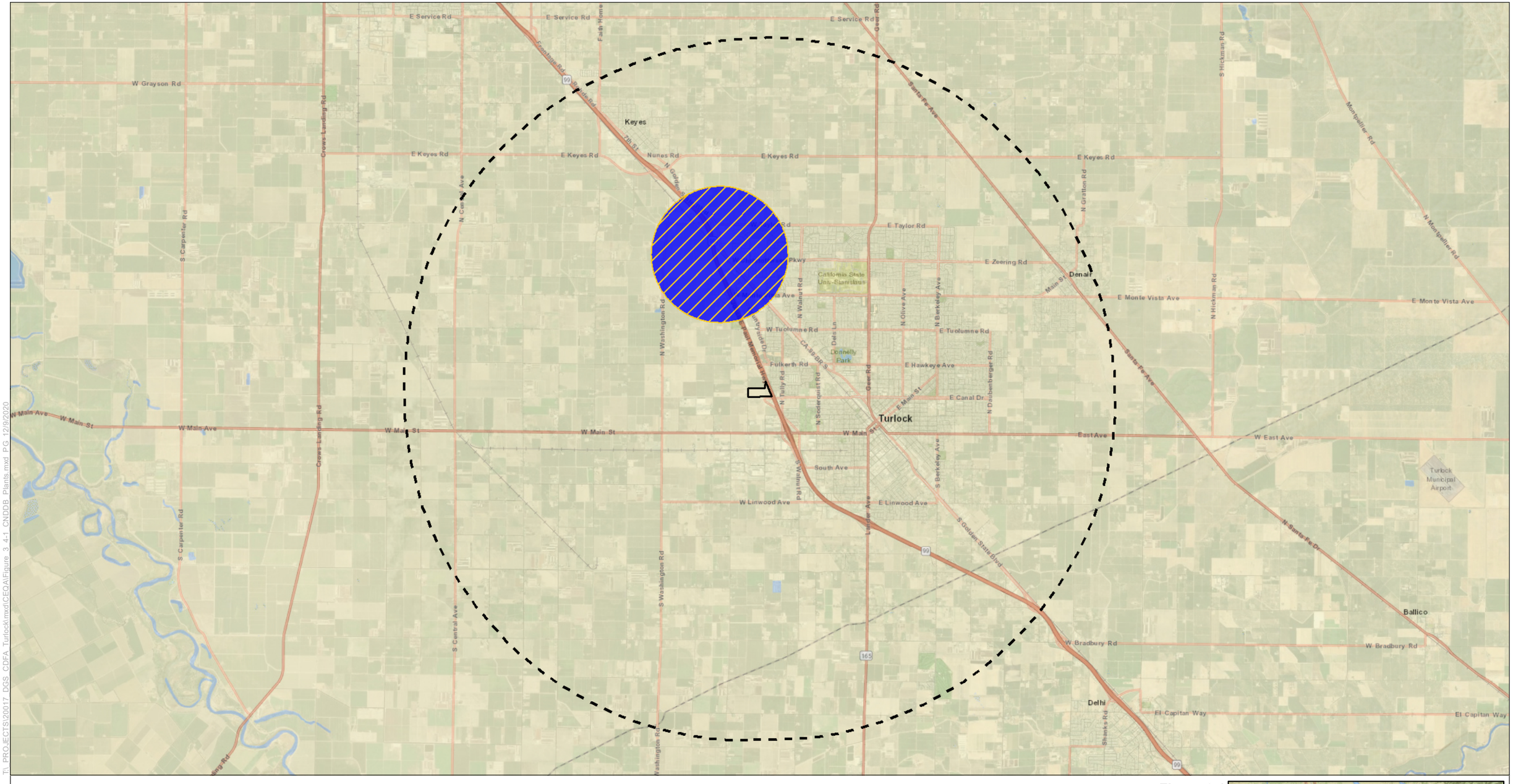
- Plants listed as rare under the California Native Plant Protection Act of 1977 (CFGC Section 1900 et seq.);
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California";
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines Section 15380); and
- Animals fully protected in California (CFGC Section 3503.5).

Special-status plant and animal species with the potential to occur on the Proposed Project site were identified through a review of the following resources:

- USFWS Information for Planning and Consultation Report (USFWS 2020a, provided in **Appendix E**, *Biological Resources Analysis Supporting Information* of this DEIR);
- USFWS's Critical Habitat Data (USFWS 2020b);
- California Natural Diversity Database (CNDDB) queries for the nine U.S. Geological Survey (USGS) 7.5-minute quadrangles containing and surrounding the Project site, Riverbank, Salida, Waterford, Brush Lake, Ceres, Denair, Crows Landing, Hatch, and Turlock (CDFW 2020a, provided in Appendix E);
- CNPS's Inventory of Rare and Endangered Plants of California query for the nine USGS 7.5-minute quadrangles containing and surrounding the Project site (CNPS 2020, provided in Appendix E);
- Information from eBird.org (eBird 2020a, 2020b); and
- Information from the Western Bat Working Group (WBWG 2020).

A total of 41 special-status species, comprising 14 plant species and 27 wildlife species, were identified in database searches associated with the Proposed Project area (USFWS 2020a, CDFW 2020, CNPS 2020, ebird.org 2020a and 2020b, WBWG 2020).

A list of special-status species and their potential to occur within the Proposed Project area is provided as **Table E-1** in Appendix E. **Figure 6-1** and **Figure 6-2** show locations of these species within a 5-mile radius of the Proposed Project area. The area is not within Critical Habitat for any wildlife species and no Critical Habitat is present within 5 miles of the area.



Project Features

- Projct Site
- 5-mile Buffer

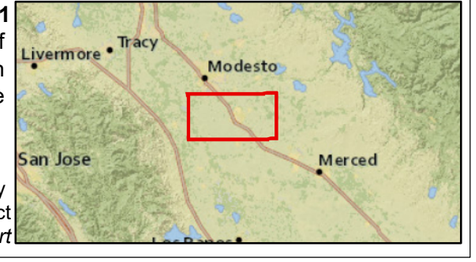
Special-status Plant Species

- heartscale
- subtle orache

Horizon WATER and ENVIRONMENT

Source: ESRI 2018, CDFW CNDDB 2020

Figure 6-1
CNDDB Occurrences of Special-status Plants within 5 miles of the Project Site



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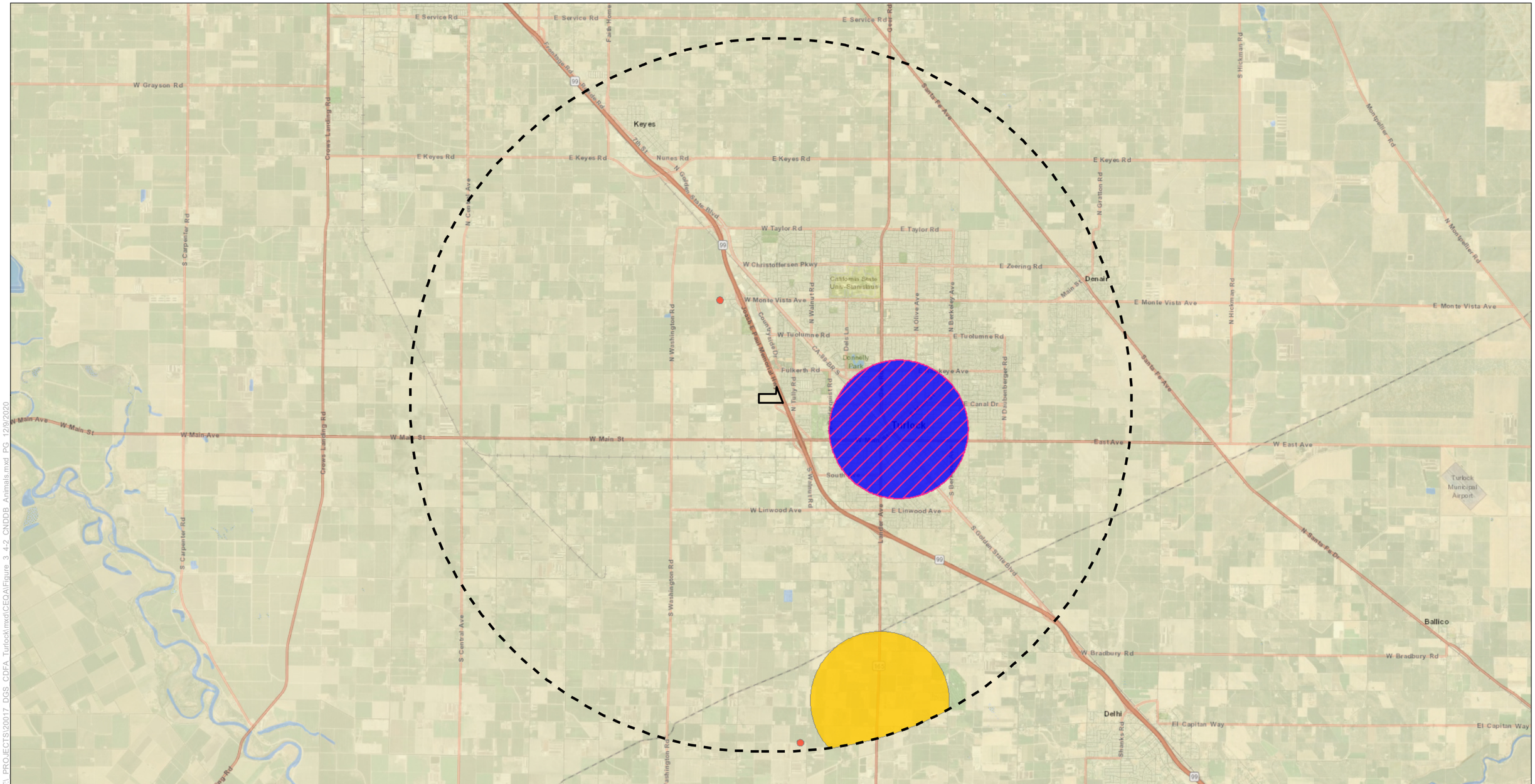

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N

0 1 2
Miles

Project Features

- Projct Site
- 5-mile Buffer

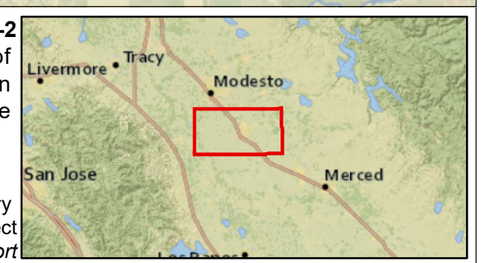
Special-status Animal Species

- Crotch bumble bee
- Northern California legless lizard
- Swainson's hawk
- tricolored blackbird

Horizon WATER and ENVIRONMENT

Source: ESRI 2018, CDFW CNDDB 2020

Figure 6-2
CNDDB Occurrences of Special-status Animals within 5 miles of the Project Site



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The potential for special-status species to occur in areas affected by the Proposed Project was evaluated according to the following criteria:

None: indicates that the area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.

Not Expected: indicates situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and degraded/substantially altered habitats.

Possible: indicates the presence of suitable habitat or key habitat elements that potentially support the species.

Present: indicates that either the target species was observed directly or its presence was confirmed by diagnostic signs during field investigations or in previous studies in the area.

6.3.3 Sensitive Natural Communities

Sensitive natural communities are those that are of special concern to resource agencies, such as those that are protected under CEQA, Section 1600 of the CFGC, or Sections 401 and 404 of the CWA. These include sensitive communities documented in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009), tracked in the CNDDB (CDFW 2020), or classified as riparian communities and waters of the U.S. and state, including wetlands.

Wet areas, including streams, waterways, wetlands, and riparian habitat, were not found at the Proposed Project site. TID Upper Lateral No. 4 and a retention basin are located south of the site; however, these are not natural features and are not considered sensitive communities. No sensitive natural communities identified in the CNDDB were documented within 5 miles of the Proposed Project area.

6.4 IMPACT ANALYSIS

6.4.1 Methodology

The biological resources impact analysis is based on data collected during database searches, biological reconnaissance surveys, and review of aerial photographs and satellite imagery.

Potential impacts on existing biological resources were evaluated by comparing the quantity and quality of habitats in the Proposed Project area under baseline conditions to the anticipated conditions during construction and operation of the Proposed Project. Direct and indirect impacts on special-status species were assessed based on the potential for the species

or their habitats to be disturbed or enhanced by construction or operation of the Proposed Project.

6.4.2 Criteria for Determining Significance

The Proposed 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, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

The analysis considers both species and their habitats. A less-than-significant impact generally refers to a situation in which there is a measurable impact, but the impact is not likely to result in either an adverse outcome for the survival or reproductive success of a particular species or a widespread or long-lasting adverse effect on a natural community. Conversely, an impact is considered potentially significant if it might substantially decrease the likelihood of survival or reproductive success of a particular species (e.g., substantial decrease in a local population size or extirpation) or result in widespread or long-lasting adverse effects on a natural community.

As detailed in the Proposed Project's IS and in Chapter 3, *Introduction to the Environmental Analysis*, of this DEIR, the following criteria were identified as requiring no further analysis:

- Substantial adverse effect on any riparian habitat or other sensitive natural community.
- Substantial adverse effect on federally or state protected wetlands.
- Substantial interference with wildlife movement, established wildlife corridors, or the use of native wildlife nursery sites.
- Conflict with local policies or ordinances protecting biological resources.
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP.

6.4.3 Environmental Impacts

Impact BIO-1: Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species — Less than Significant with Mitigation

Special-status Plant Species

Based on searches of the CNDDB, USFWS Information for Planning and Consultation Report, and the CNPS Inventory of Rare and Endangered Plants, 14 sensitive plant species were identified as historically occurring within 5 miles of the Proposed Project area or having potential to occur in the vicinity (CDFW 2020, USFWS 2020a, CNPS 2020). Table E-1 (provided in Appendix E) lists all these special-status plant species. None of the plant species listed in Table E-1 have potential to occur in the Proposed Project area due to the lack of suitable habitat (see Table E-1). The site and utility connection areas are not within critical habitat for any plant species.

No special-status plant species were observed by the Horizon biologist during the reconnaissance-level site visit; however, a protocol-level rare plant survey was not conducted at the site. The site lacks native vegetation communities and contains scattered ruderal vegetation, consisting mainly of non-native plants, and the proposed utility connections would be connected into existing utilities on and adjacent to the site and/or adjacent roadways. Additionally, the site has been previously used for agricultural row crops but was disked recently. Active farming, followed by disking, has impeded the establishment of special-status plant species. Therefore, no impacts to special-status plants are anticipated and no impact to special-status plants would occur.

Special-status Wildlife Species

A total of 27 special-status wildlife species (four invertebrates, two amphibians, three reptiles, four fish, 10 birds, and four mammals) were identified in database searches associated with the Proposed Project area (USFWS 2020a, CDFW 2020, CNPS 2020, ebird 2020a and 2020b, WBWG 2020) and are documented in Table E-1, including their potential for occurrence on the Proposed Project site. Of these, four species (burrowing owl [*Athene cunicularia*], Swainson's hawk [*Buteo swainsoni*], Northern harrier [*Circus cyaneus*], and white-tailed kite [*Elanus leucurus*]) have potential to occur on site due to the presence of suitable and marginally suitable habitat. The Proposed Project area is not within critical habitat for any wildlife species.

No special-status wildlife species were observed by the Horizon biologist during the reconnaissance-level site visit; however, no focused or protocol-level wildlife surveys have been conducted at the Proposed Project site.

Special-status Invertebrates

One special-status invertebrate, the Crotch bumble bee (*Bombus crotchii*), was identified in database searches as historically occurring within 5 miles of the Proposed Project area (CDFW 2020). Although this species is currently known to inhabit open grassland,scrub habitats, and rodent burrows in California, the Proposed Project site lacks suitable habitat for a native nectar source for this species. Additionally, the recent presence of active agricultural maintenance activities (e.g., disking, harvesting, planting) at the Proposed Project site and surrounding areas indicates that herbicide and/or pesticide was likely used, which further reduces the possibility for this species to occur. Lastly, most rodent burrows found at the site were being actively used by ground squirrels within the berm in the northern portion of the site, also making it unlikely that the Crotch bumble bee would be present. Although no surveys focused on the Crotch bumble bee were conducted, it is not likely that this species would occur within or immediately adjacent to the Proposed Project site; therefore, no impact to this special-status species is expected.

No suitable habitat for vernal pool fairy shrimp (*Branchinecta lynchi*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and vernal pool tadpole shrimp (*Lepidurus packardi*) is present at the site. Vernal pool fairy shrimp and vernal pool tadpole shrimp are dependent upon vernal pool habitat, and the valley elderberry longhorn beetle is dependent upon its host plant, blue elderberry; both vernal pool habitat and blue elderberry are absent from the site. There would be no impact to vernal pool fairy shrimp, valley elderberry longhorn beetle, or vernal pool tadpole shrimp from the Proposed Project.

Special-status Amphibians, Reptiles, and Fish

No suitable habitat (i.e., aquatic areas) for special-status amphibians (California tiger salamander [*Ambystoma californiense*] and California red-legged frog [*Rana draytonii*]) is present at the site. Additionally, the site lacks suitable burrow complexes close to breeding habitat for California tiger salamander.

The Proposed Project site also lacks suitable habitat for special-status reptiles (Northern California legless lizard [*Anniella pulchra*], western pond turtle [*Actinemys marmorata*], and giant garter snake [*Thamnophis gigas*]). The site was actively disked until recently and provides no cover for the Northern California legless lizard. Aquatic habitat suitable for giant garter snake is absent. The site is likely not accessible for a western pond turtle traveling from the retention basin because the steep, concrete-lined walls of TID Upper Lateral No. 4 acts as a barrier. This species may be in the TID canal, but high water velocity during the irrigation season and lack of vegetation reduce this possibility. Were the species to occur within Upper Lateral No. 4, its walls would likely prevent movement outside of the canal near the site.

The Proposed Project site lacks suitable aquatic habitat for special-status fish (Delta smelt [*Hypomesus transpacificus*], hardhead [*Ariopsis felis*], steelhead [*Oncorhynchus mykiss*], and Sacramento splittail [*Pogonichthys macrolepidotus*]). The Proposed Project would have no impact on special-status fish, amphibian, and reptile species.

Birds Protected under the Migratory Bird Treaty Act

Most native migratory birds (including active nest sites) are protected under the MBTA; active bird nests are protected under CFGC Section 3503; and raptor nests are protected under CFGC Section 3503.5. While there is only one tree on the Proposed Project site (an almond tree in the northeastern portion of the 27-acre parcel) that has potential to be used by a nesting bird, areas of weedy vegetation are present throughout the site that could support nesting birds such as song sparrow, mourning doves, or western meadowlarks. One non-active nest was observed on the power line pole near the southern border of the site. Additionally, suitable nesting habitat was observed within 250 feet of the site in the nearby orchard trees and large ornamental trees bordering the nearby residences.

Clearing of trees and vegetation as a result of the Proposed Project could destroy (e.g., crush, remove) active nest sites, if present, on the site during construction. Additionally, noise and disturbance associated with construction of the Proposed Project could adversely affect nesting birds in adjacent areas to the point of nest abandonment and/or failure. Because the potential loss of an active bird nest during construction would potentially violate protections under the MBTA and CFGC, such an impact is considered significant. With implementation of **Mitigation Measure BIO-1 (Conduct Preconstruction Surveys for Nesting Birds and Implement Non-disturbance Buffer Areas)**, the Proposed Project would avoid impacts on nesting birds by identifying and avoiding direct and indirect impacts to occupied nests; therefore, impacts on nesting birds would be **less than significant with mitigation**.

> **Mitigation Measure BIO-1: Conduct Preconstruction Surveys for Nesting Birds and Implement Non-disturbance Buffer Areas.**
>
> To the extent feasible, all removal of vegetation, including trees, shall occur between September 1 and February 14, outside the bird/raptor nesting season, to avoid potential impacts on nesting birds. If construction activities (including staging and vegetation

removal) will occur during the nesting season (February 15 through August 31), the Project Proponent shall retain a qualified wildlife biologist to conduct focused surveys for active bird nests on the site and within a 250-foot buffer no more than 7 days before initiation of construction activities. If no work occurs for a period of 5 days at any time during the nesting season, surveys must be performed before work within 250 feet of suitable nesting substrate is resumed. If the survey indicates that no active nests are present, no further mitigation shall be required.

If an active bird or raptor nest is located during the preconstruction surveys, a qualified biologist shall establish appropriate species-specific non-disturbance buffer zones in consultation with CDFW. No Proposed Project activity shall commence within the non-disturbance buffer until a qualified biologist confirms that the nest is no longer active.

Special-status Birds

Of the 10 special-status bird species considered in this document and listed in Table E-1, only burrowing owl, Swainson's hawk, northern harrier, and white-tailed kite are likely to utilize the site for nesting and/or foraging. Potential impacts to these species are discussed below.

Burrowing Owl

Burrowing owls (BUOWs) are a California Species of Special Concern. No CNDDB records of this species are known within 5 miles of the Proposed Project site. BUOWs are a resident species that live in small colonies and typically nest and roost in burrow systems created by medium-sized mammals (e.g., ground squirrels) or in artificial sites (e.g., drainpipes, culverts). Occasionally, they dig burrows themselves. Rodent burrows in the berm that separates the Proposed Project site from the adjacent orchard could provide suitable nesting and roosting habitat for BUOWs; however, no evidence of owl occupation (e.g., feathers, bones, pellets, whitewash) was observed. Rodent burrows were observed directly south of the site in the sandy area between the retention basin and the TID canal. The site contains an open area that is suitable for BUOW foraging; the nearby orchard may also provide suitable foraging grounds. The presence of trees at nearby residences may reduce the possibility for BUOW to occur because these trees represent suitable perches for predatory raptors.

If BUOWs were to be present on and/or adjacent to the Proposed Project site, construction activities could disturb and/or harm them through noise and visual distraction, which could cause nest abandonment, reduced reproductive success, and reduction in health and vigor of eggs and/or young; destruction of burrows (e.g., burrow collapse, inadvertent entrapment); and direct mortality of individuals. Such impacts would be significant. Implementation of **Mitigation Measure BIO-2 (Conduct Preconstruction Surveys for Burrowing Owls), Mitigation Measure BIO-3 (Burrowing Owl Avoidance), and Mitigation Measure BIO-4 (Burrowing Owl Passive Relocation and Mitigation)** would ensure that burrowing owls are not adversely affected. Therefore, impacts on burrowing owls would be **less than significant with mitigation**.

Mitigation Measure BIO-2. Conduct Preconstruction Surveys for Burrowing Owls.

CDFA or its contractor(s) shall require that a qualified biologist assess suitable burrows for the presence/absence of BUOW by conducting surveys following the California Burrowing Owl Consortium's (CBOC's) *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1993) and CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Specifically, as recommended in the CBOC's protocol and guidelines and CDFW's staff report, three or more surveillance surveys shall be conducted during daylight with each visit occurring at least 3 weeks apart during the peak breeding season (April 15 to July 15), when BUOW are most detectable. If no BUOW or signs of BUOW are detected during the survey, no further mitigation shall be required.

Mitigation Measure BIO-3. Burrowing Owl Avoidance.

If the preconstruction surveys detect occupied burrows, a buffer shall be established, as outlined in CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), within which no ground-disturbing or vegetation removal activity is permissible. Buffers around occupied burrows shall be established following CDFW guidance, as indicated below, unless a qualified biologist determines, based on a site-specific evaluation, that a smaller buffer is sufficient to avoid impacts on the burrowing owl burrow:

Buffers around Burrowing Owl Burrows Based on Level of Disturbance

Location	Time of Year	Low	Med	High
Nesting Sites	April 1-Aug 15	200 meters	500 meters	500 meters
Nesting Sites	Aug 16-Oct 15	200 meters	200 meters	500 meters
Nesting Sites	Oct 16-Mar 31	50 meters	100 meters	500 meters

Mitigation Measure BIO-4. Burrowing Owl Passive Relocation and Mitigation

If avoidance measures cannot be met and occupied burrows are to be relocated, a passive relocation plan shall be developed by a qualified biologist and approved by CDFW prior to implementation. Burrow exclusion will be conducted by a qualified biologist and only during the non-breeding season (September 1 to January 31), before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods such as surveillance. CDFA shall enhance or create burrows in appropriate habitat at a 1:1 ratio (burrows destroyed to burrows enhanced or created) one week prior to implementation of passive relocation techniques. If burrowing owl habitat enhancement or creation takes place, CDFA shall develop and implement a monitoring and management plan to assess the effectiveness of the mitigation. The plan shall be subject to the approval of CDFW.

Swainson's Hawk and White-tailed Kite

Swainson's hawks are a California-listed threatened species and white-tailed kites are a California fully protected species. Both species are known to occur in the region surrounding the Proposed Project site. Swainson's hawks exhibit high nest-site fidelity, returning to the same nests year after year, and lack of suitable habitat in the San Joaquin Valley limits their local distribution and abundance (CDFW 2016). Two CNDDB occurrences of Swainson's hawks are located within 5 miles of the Proposed Project site, approximately 1.5 miles north and approximately 5 miles south of the site. No CNDDB records of white-tailed kite are known within 5 miles of the site, but this species is infrequently tracked in the CNDDB.

Swainson's hawks and white-tailed kites require open areas such as grasslands or alfalfa/grain fields that support rodent populations for foraging. Foraging habitat must be adjacent to breeding habitat, which ranges from groves or lines of tall trees in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, agricultural or ranch lands, and trees with dense foliage to trees within established neighborhoods. Suitable nesting habitat (trees) for these species is absent from the Proposed Project site; however, these species could use the site to forage, and suitable nesting habitat occurs on the west side of Dianne Drive adjacent to the site.

Construction activity in the vicinity of nest sites could disturb breeding through generation of noise and visual distraction. Impacts on raptor nesting sites that result in nest abandonment, nest failure, or reduced health or vigor of nestlings would be a significant impact. The Swainson's Hawk Technical Advisory Committee (SWHA TAC) has developed survey recommendations to maximize detection of nests and thereby reduce the potential for nest failures from project activities (SWHA TAC 2000). Implementation of **Mitigation Measure BIO-5 (Conduct Nesting Raptor Surveys for Swainson's Hawk and White-tailed Kite)** and **Mitigation Measure BIO-6 (Establish Buffers to Avoid or Minimize Impacts on Swainson's Hawk and White-tailed Kite)** would allow identification and avoidance of nests. If an active Swainson's hawk nest cannot be avoided, consultation with CDFW for take authorization shall occur as described in **Mitigation Measure BIO-7 (Swainson's Hawk Take Authorization)**.

Therefore, impacts to these nesting raptors would be **less than significant with mitigation**.

> **Mitigation Measure BIO-5. Conduct Nesting Raptor Surveys for Swainson's Hawk and White-tailed Kite.**
>
> If construction occurs between February 1 and August 31, CDFA or its contractor(s) shall require that a qualified biologist conduct surveys for Swainson's hawk and white-tailed kite in accordance with the recommended timing and methodology developed by the SWHA TAC (2000). The SWHA TAC recommends a 0.5-mile survey distance from the limits of disturbance. The survey protocol includes early-season surveys to assist the Project Proponent in implementing necessary avoidance and minimization measures and identifying active nest sites prior to initiating ground-disturbing activities. If nesting

Swainson's hawk or white-tailed kite are detected, buffers shall be established around active nests in accordance with Mitigation Measure BIO-6.

Mitigation Measure BIO-6. Establish Buffers to Avoid or Minimize Impacts on Swainson's Hawk and White-tailed Kite.

If ground-disturbing activities are to take place during the normal bird breeding season (March 1 through September 15), additional pre-activity surveys for active nests shall be conducted by a qualified biologist no more than 10 days prior to the start of activities to ensure that no Swainson's hawks or white-tailed kites have begun nesting activities near the site. Buffers around active nests will be 0.5 mile unless a qualified biologist determines, based on a site-specific evaluation, that a smaller buffer is sufficient to avoid impacts on nesting raptors. Factors to be considered when determining buffer size include the presence of natural buffers provided by vegetation or topography, nest height, locations of foraging territory, and baseline levels of noise and human activity. Buffers shall be maintained until a qualified biologist has determined that the young have fledged and are no longer reliant on the nest or parental care for survival.

In the event that an active SWHA nest is detected during surveys and a 0.5-mile no-disturbance buffer is not feasible, CDFA shall implement Mitigation Measure BIO-8.

Mitigation Measure BIO-7. Swainson's Hawk Take Authorization.

In the event that an active SWHA nest is detected during surveys and a 0.5-mile no-disturbance buffer is not feasible, consultation with CDFW shall occur to discuss how to implement the Proposed Project and avoid take. If take cannot be avoided, take authorization through the issuance of an Incidental Take Permit, in accordance with CFGC Section 2081 (b) is necessary to comply with CESA.

Northern Harrier

Northern harrier is a California Species of Special Concern and is known to occur within the region surrounding the Proposed Project site. No CNDDB records of Northern harrier are known within 5 miles of the site, but this species is infrequently tracked by the CNDDB.

Northern harriers are found throughout the lowlands of California in grasslands, meadows, seasonal and agricultural wetlands, and marshes. They nest within thickets of vegetation on the ground. Suitable nesting habitat is absent at the site because, until recently, vegetation has been routinely disked and maintained for agricultural purposes; however, this species could use the site to forage. Suitable nesting habitat is present south of the Proposed Project site within the vegetation surrounding the retention basin. Implementation of Mitigation Measure BIO-1 would ensure that impacts to northern harrier are **less than significant with mitigation.**

Special-status Mammals

The Proposed Project site lacks suitable roosting habitat for pallid bat, Townsend's big-eared bat, western red bat, and hoary bat, as identified in Table E-1. Due to the lack of suitable roosting habitat for bats at the Proposed Project site, **no impact** to special-status bat species are expected to occur.

Chapter 7
Cultural Resources

7.1 OVERVIEW

This chapter describes potential impacts of the Proposed Project related to cultural resources. Cultural resources include prehistoric archaeological sites; historic-era archaeological sites; tribal cultural resources (TCRs); and historic buildings, structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period. Historic-era archaeological sites reflect activities conducted after the arrival of colonists in the early 1800s. Prehistoric and historic-era sites contain artifacts, cultural features, subsistence remains, and human burials.

The purpose of this chapter is to describe the regulatory setting associated with cultural resources, the environmental setting for these resources, project impacts on cultural resources, and mitigation measures that would reduce these impacts.

The following key data sources support this chapter:

- Records search from the Central California Information Center (CCIC) of the California Historical Resources Information System at California State University, Stanislaus (Records Search File: 11419N); and
- Files search from the California Native American Heritage Commission (NAHC).

7.2 REGULATORY SETTING

7.2.1 Federal Laws, Regulations, and Policies

The Proposed Project does not require any federal permits, and it is not located on federal lands; therefore, federal laws do not apply to the Proposed Project. The following laws are provided for context only.

The implementing regulations of the National Historic Preservation Act (NHPA) require that cultural resources be evaluated for National Register of Historic Places (NRHP) eligibility if they cannot be avoided by an undertaking (in this instance, the Proposed Project). To determine site significance through application of NRHP criteria, several levels of potential significance that reflect different (although not necessarily mutually exclusive) values must be considered. As provided in Title 36 CFR Section 60.4, “the quality of significance in American history,

architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association" and must be considered within the historic context. Resources must also be at least 50 years old, except in rare cases, and, to meet eligibility criteria of the NRHP, must:

(A) Be associated with events that have made a significant contribution to the broad patterns of our history; or

(B) Be associated with the lives of persons significant in our past; or

(C) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

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

For archaeological sites evaluated under criterion (D) above, integrity requires that the site remain sufficiently intact to convey the expected information to address specific important research questions.

7.2.2 State Laws, Regulations, and Policies

CEQA and CEQA Guidelines

The Proposed Project must comply with CEQA (Pub. Res. Code Section 21000 et seq.) and the CEQA Guidelines (14 CCR Chapter 3), which determine, in part, whether a project would have a significant effect on a unique archaeological resource (according to Pub. Res. Code Section 21083.2) or a historical resource (according to Pub. Res. Code Section 21084.1).

CEQA Guidelines Section 15064.5 notes that "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." Lead agencies are required to identify potentially feasible measures or alternatives to avoid or mitigate significant adverse changes in the significance of a historical resource before such projects are approved. According to the CEQA Guidelines, historical resources are:

- Listed in, or determined to be eligible for listing in, the California Register of Historical Resources (Pub. Res. Code Section 5024.1[e]);
- Included in a local register of historical resources (Pub. Res. Code Section 5020.1[k]) or identified as significant in a historical resource survey meeting the requirements of Pub. Res. Code Section 5024.1(g); or

- Determined by a lead state agency to be historically significant.

CEQA Guidelines Section 15064.5 also applies to unique archaeological resources as defined in Pub. Res. Code Section 21084.1.

Pub. Res. Code Section 21080.3.1, chaptered as the result of AB 52, requires that CEQA lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project if requested by the tribe, and if the agency intends to release a negative declaration, mitigated negative declaration, or environmental impact report for a project. The bill also specifies, under Pub. Res. Code Section 21084.2, that a project with an effect that may cause a substantial adverse change in the significance of a TCR is considered a project that may have a significant effect on the environment. This latter language was added to the CEQA Guidelines Appendix G Environmental Checklist in September 2016. DGS, as the Proposed Project's CEQA lead agency, consulted with Native American tribes pursuant to Pub. Res. Code Section 21080.3.1.

As defined in Pub. Res. Code Section 21074(a), TCRs are:

(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 California Register of Historical Resources; or

   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.

TCRs are further defined under Section 21074(b) and (c) as follows:

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

(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 to the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to the newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

California Register of Historical Resources

Pub. Res. Code Section 5024.1 establishes the California Register of Historical Resources (CRHR). This register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed, or determined to be eligible for listing, in the NRHP, including properties evaluated under Section 106 of the NHPA. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

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

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

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

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

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

7.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

7.3 ENVIRONMENTAL SETTING

7.3.1 Prehistoric Context

Little archaeological work has been conducted in the Turlock area or in the San Joaquin Valley in general; therefore, the archaeology of the Proposed Project area is understood within the prehistoric context developed for the Central Valley as a whole. Since the early 1930s, various

schemes have been set forth by researchers to organize the archaeological data of California into a chronological framework. The Central Valley sequence established by Lillard, Heizer, and Fenenga in 1939 is particularly notable. Based on archaeological investigations in the lower Sacramento Valley, Lillard and colleagues divided human prehistory into three broad cultural horizons: Early, Middle, and Late. This chronology was first known as the Delta sequence and later became the basis of Richard Beardsley's Central California Taxonomic System (CCTS) (Moratto 1984:181). The system relies on the identification of characteristics such as burial patterns, shell bead types, stone tools, and the types of locations where the sites tend to occur. These traits and characteristics are used to identify an archaeological resource as belonging to a specific time period.

The CCTS has continued to undergo significant refinement but remains the framework within which California archaeologists explain cultural change. The general system is still widely used by archaeologists, but it has been expanded and revised to include economic and technological strategies, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods. The current chronology (Rosenthal et al. 2010:150) for central California archaeology includes:

- Paleo-Indian: 11,550 to 8550 B.C.
- Lower Archaic: 8550 to 5550 B.C.
- Middle Archaic: 5550 to 550 B.C.
- Upper Archaic: 550 B.C to 1100 A.D.
- Emergent: 1100 A.D. to Historic

The Paleo-Indian Period (11,550 to 8,550 B.C.) is generally characterized by big-game hunters occupying broad geographic areas. Archaeological deposits from the Paleo-Indian period are rarely found in the Central Valley, however, and those that have been identified have largely been discovered at the south end of the San Joaquin Valley near Tulare Lake. Post-depositional processes, mainly glacial outwash occurring at the end of the Pleistocene Epoch, either destroyed or deeply buried much of the existing evidence of human activity in the region from this period. As result, little is known about Paleo-Indian lifeways in the region (Moratto 1984:214).

Similar to the preceding period, the Lower Archaic Period (8550 to 5550 B.C.) is presumed to reflect a mobile population that continued to hunt big game. Few localities in the Central Valley are associated with this period, and those that have been found are largely isolated artifacts consisting of large wide-stemmed and leaf-shaped projectile points, along with flaked stone crescents. Only two sites with associated deposits of faunal and shell remains have been identified for the Lower Archaic Period, one at Buena Vista Lake in the southern San Joaquin Valley (Rosenthal et al. 2010:151-152) and one in Sacramento (Tremaine 2008). Some sites in

the Sierra Nevada foothills from this period, however, indicate the use of milling equipment (hand stones and milling stones) to process seeds and nuts.

The Middle Archaic Period (5550 to 550 B.C.) indicates a shift to a more settled way of life that is reflected by substantial, though often deeply buried, archaeological sites with artifacts that are more elaborate in design, imply a more diverse subsistence regime, and indicate interregional trade. Sites are often situated along the major rivers and streams within the Central Valley, emphasizing a focus on riverine and marsh habitats. The Windmiller Tradition or Pattern, which was first identified in sites around the Sacramento–San Joaquin River Delta, is often considered representative of this period. Characteristic artifacts from this period include a variety of fish hooks and spears; large stemmed and leaf-shaped projectile points of obsidian and chert; shaped charmstones of alabaster, steatite, or marble; and a variety of Haliotis and Olivella shell ornaments and beads, respectively. Mortars and pestles, associated with acorn preparation, became commonplace by the middle of the period. The presence of ventrally and dorsally extended burials with a western orientation is particularly indicative of the Windmiller Pattern.

Increased sedentism and technological specialization are evidenced during the Upper Archaic Period (550 B.C to 1100 A.D.), as populations exploited more diverse resources and established trade relationships. Mortars and pestles became the primary ground stone implements, suggesting that acorns had become a more important dietary staple. Regional diversity in artifact styles, such as Haliotis shell ornaments, bone tools, and ground charmstones or plummets, became more pronounced; burial postures also varied.

Archaeological sites from the Emergent Period (A.D. 1100 to the historic period) indicate increased social complexity and the development of large, central villages with resident political leaders and specialized activity sites. Enhanced regional diversity in terms of artifact styles, housing, and interment methods is evident in the archeological record. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a variety of shell and stone beads and ornaments.

7.3.2 Ethnohistoric Context

The Turlock area lies within the ancestral territory of the Northern Valley Yokuts. The term “Yokuts” is applied to a large and diverse group of people inhabiting the San Joaquin Valley and Sierra Nevada foothills of central California. The Northern Valley Yokuts inhabited a 40- to 60-mile-wide area straddling the San Joaquin River, south of the Mokelumne River, east of the Diablo Range, and north of the sharp bend that the San Joaquin River takes to the east-northeast near Mendota in Fresno County. The Southern Valley Yokuts occupied the San Joaquin Valley south of the bend in the river. Although they were divided geographically and ecologically, the two Yokuts divisions have a common linguistic heritage (Wallace 1978:462).

The Northern Valley tribes closely resembled the Yokuts groups to the south, although there were some cultural differences. The northerners had greater access to salmon and acorns, two

important dietary resources, compared to the Southern Yokuts, and some of their religious practices reflected the influences of groups to their north, such as the Miwok. While inhumation was the usual practice in the southern valley, the Northern Valley Yokuts either cremated their dead or buried them in a flexed position (Wallace 1978:464, 468). A chief headed the tribal villages, which averaged around 300 people. Family houses were round or oval in shape, sunken, with a cone-shaped pole frame, and covered with tule mats. Each village also had a lodge for dances and other community functions, as well as a sweathouse (Wallace 1978:462-464).

The Northern Valley Yokuts built their riverside villages on elevated areas along the water's edge to avoid the spring floods, which were a result of heavy Sierra Nevada snow melts. Living beside rivers and streams provided plentiful river perch, Sacramento pike, salmon, and sturgeon. Hunting provided waterfowl such as geese and ducks as well as terrestrial animals such as antelope, elk, and brown bear, although by all indications, fish constituted a majority of the diet. The surrounding woodland, grasslands, and marshes provided acorns, tule root, and seeds.

The Northern Valley Yokuts used bone harpoon tips for fishing, stone sinkers for nets, chert projectile points for hunting, and mortars and pestles, scrapers, knives, and bone awl tools to procure and process food. Marine shells, procured from coastal tribes, were used for necklaces and other adornments, and marine shell beads sometimes accompanied the deceased. The northern tribes used tule reed rafts to navigate the waterways for fishing and hunting fowl. The Yokuts also manufactured intricate baskets for a variety of purposes, including storing, cooking, eating, winnowing, hopper mortars, the transport of food materials, and rituals. Very little is known of the Northern Valley Yokuts' clothing, but drawings of their tattoos show that they served not only as a decoration but also as a form of identity (Wallace 1978:464).

Initially, the Diablo Range served as a natural barrier against heavy recruitment of Native Californians by the Spanish, who established missions along the coast; however, by the early 19th century, Spanish—and later, Mexican—missionaries began to explore the inner valleys in search of potential neophytes, or converts to Catholicism. The Yokuts resisted recruitment and California Indians from various tribes sought refuge among the Yokuts after fleeing the missions. Introduced diseases, destruction of traditional resources from cattle grazing, and forced relocation took a heavy toll on the Northern Yokuts. Despite decades of hardship, many individuals who can trace their ancestry to the Northern Valley Yokuts continue to live and thrive in the Central Valley, as well as throughout California and the United States.

7.3.3 Historic Era Context

The historic era began in Stanislaus County when the first Spanish expedition entered the San Joaquin Valley in 1806 under the leadership of Gabriel Moraga. Traveling north and northwest through the region in search of possible mission sites, Moraga's party explored up what came to be known as the Stanislaus River. Moraga visited the area again in 1808 and 1810 (Kyle et al. 2002:516-517).

After Mexico gained its independence from Spain in 1822, two additional expedition forces entered the area; however, the purposes of their campaigns were no longer exploratory. Soldiers were sent into the Central Valley to recover stolen animals and punish rebellious Indians in an attempt to reduce attacks upon coastal towns, missions, and ranchos.

Americans also began to enter the region during the Mexican period. In 1827 and 1828, Jedediah Smith entered the San Joaquin Valley through the Tejon Pass and trapped beavers along the San Joaquin, Kings, and other rivers and streams that flowed from the Sierra. Smith was followed by fellow trappers such as Peter Ogden, Ewing Young, Kit Carson, and Joseph Walker.

The first permanent European settlement in Stanislaus County may have been established when two land grants were issued by the Mexican government in 1843. The first was the *Rancho El Pescadero* on the west side of the San Joaquin River near the border of what would eventually become San Joaquin County. The second was the *Rancheria del Rio de Estanislao* located north of the Stanislaus River bordering Tuolumne County. Two additional land grants were issued the following year. These were the *Ranchos del Puerto* and *Orestimba*, both of which were on the west side of the county near *Rancho Pescadero* (Tinkham 1921).

Anglo-Americans started to arrive in the territory that would become Stanislaus County during the Gold Rush, both as miners seeking gold and as agricultural entrepreneurs who recognized the opportunity to raise livestock or grow food for the gold seekers. As early as 1849, the town of Adamsville was founded on the south bank of the Tuolumne River just east of present-day Modesto. It became the first county seat of Stanislaus County in 1854 but was replaced by Empire, a short distance upriver, soon thereafter (Kyle et al. 2002). After a later move to Knights Ferry, the county seat was finally moved to Modesto in 1971.

During the historic era, the Project area was agricultural, and it has remained so. Turlock was part of a large wheat operation owned by John W. Mitchell, who owned 100,000 acres in the area from Turlock to Atwater. He began growing large acreages of wheat in 1867, hauling his abundance to Stockton. He soon began building houses on sections of land that he sold to other farmers. Non-farmers also moved to the area and began various businesses such as a blacksmith, grocery stores and hotels; a post office was established in 1870. During this time Mitchell had granted right of way to the railroad, which constructed a depot, called Turlock, in 1871 (Turlock Historical Society 2020). By this time, Mitchell had built a grain warehouse in order to store the local grain that would be transported by train and other business that were scattered in the area consolidated around the depot; thus, the city of Turlock was founded.

7.4 IMPACT ANALYSIS

Cultural resources include prehistoric archaeological sites; historic-era archaeological sites; TCRs; and historic buildings, structures, landscapes, districts, and linear features. TCRs are addressed in Chapter 15, *Tribal Cultural Resources*.

7.4.1 Methodology

Archival Search

A records search was conducted by the CCIC of the California Historical Resources Information System at California State University, Stanislaus (Records Search File: 11419N) for the Proposed Project prior to initiating the field study. The purpose of the records search was to determine if the study area had previously been surveyed for cultural resources, and to identify any previously recorded cultural resources in or within ½ mile of the Proposed Project site. The archival research included review of the *California Inventory of Historic Resources*, local historical inventories, historical literature, and historical maps, including USGS topographic maps, General Land Office maps, and Rancho Plat Maps. The results of the record search are included in **Appendix F**, *Archaeological Inventory Report*.

The records search indicated that no cultural resources have been recorded within the Proposed Project footprint or within the 0.5-mile radius. The search identified one previous study, ST-05354, that included the site. The study was a desktop review and did not include an archaeological field survey. In addition, five studies were previously conducted within the 0.5-mile search radius. These studies are listed in **Table 7-1**.

Table 7-1. Cultural Studies Previously Conducted Entirely or Partially Within the Proposed Project Area

CCIC Report No.	Author	Date	Title	Comments
01835	S. Crull	1982	Historic Reminisces of Turlock, California. Publisher: Ghost Rider Limited, ISBN: 0-5247748-0	Within ½-mile search radius; literature search of old Turlock
04074	P. M. Jensen	2000	Department of Transportation Negative Archaeological Survey Report, 10-STA-99, PM 3.5-3.6 CU 10-170, EA 10-965120, Modify Interchange at Rt 99/W. Main Street in Turlock	Within ½-mile search radius; at Hwy 99/W. Main Street Interchange
05354	R. Windmiller and D. Napoli	2004	City of Turlock – Westside Industrial Specific Plan; Background Reports: Archaeological Resources, Historical Resources, Records Search Results	Overview that includes Proposed Project area

CCIC Report No.	Author	Date	Title	Comments
07452	R. Baloian	2011	Historic Property Survey Report / Archaeological Survey Report, Hwy 99/Fulkerth Road Interchange Improvement Project, City of Turlock, Stanislaus County, CA	Within ½-mile search radius; at Hwy 99/Fulkerth Road Interchange
07537	C. Kuzak	2011	Historic Property Survey Report, 10-STA-99, P.M. 0.0/24.7, 2576 E-FIS1000020344, Stanislaus County, California	Within ½-mile search radius; along Hwy 99
08638	N. Jordan	2015	Letter Report: South County Corridor Feasibility Study – Cultural Resources Constraints Analysis	Within ½-mile search radius; literature search

The supporting documentation for the City of Turlock General Plan did not identify any historical areas or points of historical interest in the study area (City of Turlock 2012).

An examination of USGS topographic maps dating back to 1916 and of aerial photography dating to 1939 was conducted for a Phase I Environmental Site Assessment of the Proposed Project parcel (Geocon 2019). These data indicate that the area has been agricultural for the last century, with little change until the construction of the Hwy 99 bypass that is depicted in maps from 1976. The agricultural nature of the parcel is corroborated by aerial imagery that reveals full development of the land on the east side of Hwy 99, directly opposite the Proposed Project site, by 1998. The topographic maps and aerial photos, furthermore, depict the presence of structures (presumably a home and barn or other outbuildings) and surrounding trees located adjacent to Dianne Drive, near the center of parcel as it borders the street. Aerial photos indicate that buildings were present from at least 1948 through 2012; by 2016, they no longer existed. The USGS topographic maps indicate that the house was present by 1939.

The Phase I Environmental Site Assessment (Geocon 2019) reported that the soils present at the Project site include a combination Delhi Loamy Sand, Dinuba Sandy Loam, and Greenfield Sandy Loam. According to Rosenthal et al. (2004), these soil types largely date to the late Pleistocene/early Holocene and generally have a low potential to contain buried archaeological deposits.

Native American Consultation

An email request was made to the NAHC on June 9, 2020, to review its files for the presence of recorded sacred sites on the Project site. The NAHC responded on the same day, stating that no significant resources were identified in the Project area as a result of a search of their files. The NAHC also provided a list of three tribes and tribal contacts with a traditional and cultural affiliation with the Project area for notification pursuant to Pub. Res. Code Section 21080.3.1

(AB 52). Coordination with tribes is described in Chapter 15, *Tribal Cultural Resources*. None of the tribes who were contacted requested consultation on the Project.

Archaeological Survey and Results

A pedestrian archaeological survey was conducted of the study area on November 10, 2020, by a qualified Horizon archaeologist who was overseen by an archaeologist who meets the U.S. Secretary of Interior's professional standards in archaeology. The entire study area was investigated by pedestrian survey in transects spaced approximately 30 meters apart. The parcel had recently been tilled, and ground surface visibility was excellent.

No archaeological resources, including evidence of the historic era buildings identified during the archival research, were observed during the survey. The only cultural resource on the parcel is an irrigation diversion and a ditch that extends 600 feet north through the parcel off the TID Upper Lateral No. 4. The ditch, which is outside of the Proposed Project area of construction, was recorded on a California Department of Parks and Recreation Primary Record (Appendix D in Appendix F of this DEIR). Because it would not be affected by proposed construction activities, the ditch was not evaluated for CRHR eligibility.

7.4.2 Criteria for Determining Significance

The Proposed Project would result in a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5; or
- Disturb any human remains, including those interred outside of formal cemeteries.

As detailed in the Proposed Project's Initial Study and in Chapter 3, *Introduction to the Environmental Analysis*, of this DEIR, the following criterion was identified as requiring no further analysis:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

7.4.3 Environmental Impacts

Impact CR-1: Substantial adverse change in the significance of an archaeological resource — Less than Significant with Mitigation

No archaeological resources were identified during the archaeological survey of the Proposed Project area. However, archaeological remains may be buried with no surface manifestation. Excavation for site preparation and any buried utilities would occur in areas where buildings, structures, and utilities are to be located. Such excavation activities could uncover buried archaeological materials. Prehistoric materials most likely would include obsidian and chert flaked stone tools (e.g., projectile points, knives, and choppers), tool-making debris, or milling equipment such as mortars and pestles. Historic-era materials that might be uncovered include cut (square) or wire nails, tin cans, glass fragments, or ceramic debris related to the buildings depicted in the historic maps.

If archaeological remains are accidentally discovered that are determined eligible for listing in the NRHP/CRHR, and Proposed Project activities would affect them in a way that would render them ineligible for such listing, a significant impact would result. Should previously undiscovered archaeological resources be found, implementation of **Mitigation Measure CR-1 (Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for NRHP/CRHR Eligibility, and Implement Appropriate Measures for Eligible Resources)** would ensure that impacts on NRHP/CRHR-eligible archaeological sites accidentally uncovered during construction are reduced to a less-than-significant level by immediately halting work if materials are discovered, evaluating the finds for NRHP/CRHR eligibility, and implementing appropriate mitigation measures, as necessary. Implementation of Mitigation Measure CR-1 would reduce impacts related to accidental discovery of significant archaeological resources to a level that is **less than significant with mitigation**.

> **Mitigation Measure CR-1: Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for NRHP/CRHR Eligibility, and Implement Appropriate Measures for Eligible Resources.**
>
> If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains, are encountered during any project construction activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and the State will be contacted. Measures shall be taken to protect the find until it can be examined by a qualified archaeologist.
>
> All cultural resources accidentally uncovered during construction within the project site shall be evaluated for eligibility for inclusion in the NRHP/CRHR. Resource evaluations will be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. For finds that are of Native American concerns, local Native American tribes will be

notified, if they have requested notification. If any of the resources meet the eligibility criteria identified in Pub. Res. Code Section 5024.1 or Pub. Res. Code Section 21083.2(g), mitigation measures will be developed and implemented in accordance with CEQA Guidelines Section 15126.4(b) before construction resumes.

For resources eligible for listing in the CRHR that would be rendered ineligible by the effects of Project construction, additional mitigation measures will be implemented. Mitigation measures for archaeological resources may include (but are not limited to) avoidance; incorporation of sites within parks, greenspace, or other open space; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for archaeological resources shall be developed in consultation with responsible agencies and, as appropriate, interested parties such as Native American tribes. Native American consultation is required if an archaeological site is determined to be a TCR. Implementation of the approved mitigation would be required before resuming any construction activities with potential to affect identified eligible resources at the site.

Impact CR-2: Disturbance of any human remains, including those interred outside of formal cemeteries — Less than Significant with Mitigation

No evidence of human remains was observed within the study area. Human remains are not known to exist in or near the Project site; however, human remains may be buried with no surface manifestation. Excavations associated with construction, particularly trenching, have the potential to uncover such remains, if they are present. Impacts on accidentally discovered human remains would be considered a significant impact. Implementation of **Mitigation Measure CR-2 (Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code)** would ensure that the Proposed Project would not result in any substantial adverse effects on human remains uncovered during the course of construction by requiring that, if human remains are uncovered, work must be halted and the County Coroner must be contacted. Adherence to these procedures and provisions of the California Health and Safety Code would reduce potential impacts on human remains to a level that is **less than significant with mitigation.**

Mitigation Measure CR-2: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code.

If human remains are accidentally discovered during the Proposed Project's construction activities, the requirements of California Health and Human Safety Code Section 7050.5 shall be followed. Potentially damaging excavation shall immediately halt within a minimum radius of 100 feet of the remains, the finds will be protected, and the Stanislaus County Coroner shall be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the

Coroner determines that the remains are those of a Native American, he or she must contact NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). Pursuant to the provisions of Pub. Res. Code Section 5097.98, the NAHC shall identify a most likely descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. The State shall work with the MLD to ensure that the remains are removed to a protected location and treated with dignity and respect. Native American human remains may also be determined to be tribal cultural resources. The County Coroner will contend with the human remains if they are not of Native American origin.

Chapter 8
Geology, Soils, and Seismicity

8.1 OVERVIEW

This chapter identifies geologic, soils, and seismic conditions that could affect or be affected by the Proposed Project. The chapter describes the regulatory setting, environmental setting, environmental impacts, and proposed mitigation measures based on published geologic reports and maps, a site-specific technical report, and professional expertise. The discussion of impacts considers the consequences of the Proposed Project on geology, soils, and seismicity, and how geology, soils, and seismicity would affect the Proposed Project.

This chapter also describes the regulatory setting associated with paleontological resources, potential impacts on these resources, and mitigation measures that would reduce these impacts. Paleontological resources are the fossil remains of prehistoric flora and fauna, or traces of evidence of the existence of prehistoric flora and fauna. This chapter addresses the occurrence of paleontological resources within the Proposed Project area and the impact that construction activities and operation of the Proposed Project would have on scientifically important fossil remains, as identified in the CEQA Guidelines. The analysis presented in this chapter conforms to the Society of Vertebrate Paleontology criteria.

8.2 REGULATORY SETTING

8.2.1 Federal Laws, Regulations, and Policies

Section 402 of the Clean Water Act/National Pollutant Discharge Elimination System

The CWA is discussed in detail in Chapter 12, *Hydrology and Water Quality*. Because Section 402 of CWA is also directly relevant to earthwork, additional information is provided here.

The 1987 amendments to CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program. As described in Chapter 12, the USEPA has delegated to SWRCB the authority for the NPDES program in California, where it is implemented by the state's nine RWQCBs. Under the NPDES Phase II Rule, any construction activity disturbing 1 acre or more must obtain coverage under the state's General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). General Permit applicants are required to prepare a Notice of Intent stating that stormwater will be discharged from a construction site, and that a SWPPP describes the

BMPs that will be implemented to avoid adverse effects on receiving water quality as a result of construction activities, including earthwork.

National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) and creation of the National Earthquake Hazards Reduction Program (NEHRP) established a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. The following four federal agencies are responsible for coordinating activities under NEHRP: USGS; National Science Foundation (NSF); FEMA; and National Institute of Standards and Technology. Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2021) are as follows:

(1) Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.

(2) Improve techniques for reducing earthquake vulnerabilities of facilities and systems.

(3) Improve earthquake hazards identification and risk assessment methods, and their use.

(4) Improve the understanding of earthquakes and their effects.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

No federal laws, regulations, or policies apply to paleontological resources and the Proposed Project.

8.2.2 State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act; Pub. Res. Code Section 2621 et seq.) was enacted in 1972 to reduce the risk to life and property from surface faulting in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as “active,” and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are “sufficiently active” and “well defined.” A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during

the Holocene (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Bryant and Hart 2007). Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

As with the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (SHMA) (Pub. Res. Code Sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. The Alquist-Priolo Act addresses surface fault rupture, including strong ground shaking, liquefaction, and seismically induced landslides, and SHMA provisions are similar in concept in that the State is charged with identifying and mapping areas of risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within Seismic Hazard Zones.

Under SHMA, permit review is the primary mechanism by which development can be locally regulated. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been performed and measures to reduce potential damage have been incorporated into the development plans.

California Building Code and International Building Code

Title 24 of the CCR, also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California. CBC standards determine building strength based on regional seismic risks and recommended construction specifications to provide building strength above that risk.

8.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

8.3 ENVIRONMENTAL SETTING

8.3.1 Geology

The Proposed Project area is located in the Great Valley geomorphic province of central California, often referred to as the California Central Valley. This geomorphic province is characterized as an alluvial plain approximately 50 miles wide and 400 miles long (California Geologic Survey [CGS] 2002). The Proposed Project area is within the central portion of the province at the northern end of the San Joaquin Valley. The San Joaquin Valley is bounded by the Sierra Nevada to the east, the Tehachapi Mountains to the south, and the Coast Range (Diablo Range) to the west.

The northern end of the San Joaquin Valley has been filled with a thick sequence of sediments derived from weathering of the adjacent mountain ranges resulting in a stratigraphic section of Cretaceous, Tertiary, and Quaternary deposits. Published geologic mapping depicts the site vicinity underlain by Quaternary age alluvial fan deposits (map symbol Qf), generally consisting of sand and silt over an even westward sloping surface (California Division of Mines and Geology [CDMG] 1966).

The Proposed Project area is flat and at an elevation of 95 feet (approximate) with little variation in topography. Storm runoff generated onsite infiltrates on site or flows overland to irrigation ditches and roadside drainage. No natural surface waters are located near the Proposed Project area.

8.3.2 Soils

The Natural Resources Conservation Service (NRCS), Web Soil Survey indicates that soils in the project area consist of Delhi loamy sand, Dinuba sandy loam, and Greenfield sandy loam on 0 to 3% slopes (NRCS 2021). These soil units are comprised of well drained sandy alluvium derived from granite with a very low to medium runoff class.

A geotechnical investigation of the site was conducted May 2021 (Rutherford & Chekene 2021). Subsurface exploratory investigation found soils consisting mostly of silty sand to sandy silt. Soils were encountered up to the maximum exploratory depth of 30 feet below ground surface (bgs).

Soil Erosion

Soil erosion is the process of removing soil particles from a land surface by wind, water, or gravity. Factors influencing the rate of erosion may include climatic conditions, soil composition and roughness, soil moisture, ground cover, and topography and slope. Most natural erosion occurs slowly. However, ground-disturbing construction activities may increase the rate of erosion by exposing bare soils to the effects of wind and/or water. In general, NRCS data

classifies underlying soils at the Proposed Project area as having a low potential for erosion by water and moderate susceptible for erosion by wind (NRCS 2021).

Expansive Soils

Expansive soils are predominantly composed of clays and can undergo substantial volume change in response to changes in moisture content. During wetting and drying cycles, expansive soils may shrink and swell, creating differential ground movements. The soils in the Proposed Project area have a low shrink/swell potential (NRCS 2021).

8.3.3 Seismicity

California is subjected to enormous tectonic forces stemming from the lateral motion of the Pacific (west) and North American (east) plates moving in opposing directions. The shearing forces of the plate movement results in an extremely fractured boundary referred to as the San Andreas Fault Zone. Many smaller active and historic fault zones are associated with the Pacific/North American tectonic movement as well.

The eastern portion of the San Joaquin Valley and Proposed Project area lies in a region with limited faulting and relatively low seismic activity. Although ground shaking events periodically affect the region, ground shaking has historically been very minimal.

Ground Shaking

Ground movement during an earthquake can vary depending on the overall event magnitude, distance to the fault, and underlying geological units. The greatest seismic hazard in Turlock would likely be ground shaking from earthquakes originating from the San Andreas Fault Zone and the Mammoth Lakes and Owens Valley regions (CGS 2010). Although ground shaking in the Turlock area has historically been very minimal, ground shaking events periodically affect the region. In Stanislaus County, the level of seismic ground shaking decreases from “High” risk along the western border of the County and the foothills of the Diablo Range, to “Moderate” risk in the central part of the County, to “Low” risk in the eastern portion (CGS 2008). The Proposed Project area lies within the central portion of the County and is considered “Moderate” to “Low” to risk for earthquake shaking potential.

Alquist-Priolo Fault Zones and Ground Rupture

Horizontal and/or vertical surface or ground ruptures can occur during seismic events, typically along existing fault lines. Ground rupture that occurs along a fault trace (mapped location of the intersection(s) of a fault with the ground surface) is referred to as “fault rupture.” Some seismogenic faults (e.g., blind thrusts) do not extend to the ground surface and may not generate fault rupture even during major earthquakes. Other rupturing of the ground surface can occur as the result of slope failure or settlement caused by seismic shaking. Ground ruptures can result in damage to buildings, roads, and underground utilities. The potential for ground rupture depends on the proximity of faults, shaking severity, and local geologic

conditions. Fault areas considered to be of greatest risk are identified as Alquist-Priolo fault zones. No Alquist-Priolo designated fault zones or potentially active faults exist within or near the Proposed Project area.

Differential Settling, Subsidence, and Liquefaction

Settlement of the ground surface can be caused by a number of geologic processes. Settlement is the lowering of the land surface elevation as a result of the compression, compaction, or consolidation of underlying soils, sediment, or rock. These processes are exasperated under increased loading (e.g., additional sediment deposition or construction of structures, including fills) or the withdrawal of groundwater. The processes cause a reduction in the volume of the materials. Compaction and compression generally occur within unconsolidated granular soils or sediment over a relatively short timeframe. Consolidation usually occurs over a longer period (sometimes many years) in saturated finer grained material as pore water (i.e., water within the spaces between sediment grains) is forced out of the sediment structure under loading or groundwater pumping. The potential for differential settlement is dependent upon local geologic conditions, soil properties, and land usage.

Surface settlement can be referred to as subsidence, a term generally used for settlement of large magnitude or affecting a large area. Subsidence can also occur following oxidation of buried organic material. Areas consisting of fine-grained sediments (i.e., clays and silts) are more susceptible to ground subsidence. Although mining and extraction activities may also lead to subsidence, excessive pumping of groundwater is the predominant cause for this phenomenon.

Liquefaction can occur when water-saturated, loose sandy soils suddenly lose strength during seismic shaking. The primary factor that triggers liquefaction is moderate to strong ground shaking. The probability of liquefaction correlates directly with the intensity and duration of ground shaking (i.e., the stronger and/or longer the earthquake, the greater the chance of liquefaction). Additionally, physical properties may increase the susceptibility of soil to liquefaction. Saturated relatively clean/loose granular soils have a relatively high susceptibility for liquefaction while cohesive soils (even if saturated) have a low susceptibility. No specific liquefaction hazards have been identified in near the City of Turlock (Bryant and Hart 2007).

Landslide, Slope Failure, and Lateral Spreading

Landslides or slope failure may occur in steeply sloped areas (15 percent slope or greater) following heavy rains, seismic events, or human activities (e.g., grading or excavation activities). Similarly, horizontal displacement of gently sloping ground (five percent or less slope) may occur along riverbanks or exposed embankments, a phenomenon known as lateral spreading. Saturated, loosely consolidated soils and precipitation events increase the likelihood that an earthquake will trigger landslides, slope failure, or lateral spreading.

8.3.4 Paleontological Resources

The paleontological sensitivity of a project area can be assessed by identifying the paleontological importance of rock units that are exposed there. The paleontological sensitivity of a rock formation considers the type of rock (i.e., sedimentary, igneous, or metamorphic), the recorded abundance and types of fossil specimens, and the number of previously recorded fossil sites. Exposures of a specific rock formation at any given project site are most likely to yield fossil remains representing particular species similar to those previously recorded from the rock formation in other locations.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

The standard guidelines for assessment and mitigation of adverse impacts on paleontological resources set forth by the Society of Vertebrate Paleontology (2010) have been used to establish four categories of sensitivity for paleontological resources – High, Low, and No, Undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that consist of rock that is not of sedimentary origin and that have not been known to produce fossils are considered low sensitivity areas and monitoring is not required during project construction or operation. Additionally, when it can be demonstrated that the conditions of the unconsolidated sediments

are such that fossils could not form in these sediments, and that any fossils found in the sediments could not be considered in situ, they would have minimal scientific value, and the area would be considered low sensitivity. Areas consisting of high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) are considered to have no sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys are performed.

A desktop study was conducted to assess the sensitivity of the Proposed Project area or paleontological resources. The Proposed Project area is predominantly underlain by Pleistocene-aged alluvial fan deposits of the Modesto Formation (CDGM 1966). The Modesto Formation is composed primarily of unconsolidated, unweathered, coarse sand and sandy silt along the upper portions of the unit. The older, deeper portions of this unit shift to more consolidated, slightly weathered, well-sorted silt and fine sand, silty sand, and sandy silt. The Modesto Formation is overlain by Holocene alluvium. The Holocene soils can range in depth of over 6.5 feet.

A records search was performed through the University of California, Berkeley Museum of Paleontology (UCMP) on December 2, 2020. No fossil localities have been recorded within the Proposed Project site. However, fossil specimens from sediments referable to the Modesto Formation have been reported at a variety of locations throughout the San Joaquin Valley, including Stockton, Tracy, Manteca, Modesto, and Merced (UCMP 2020).

8.4 IMPACT ANALYSIS

8.4.1 Methodology

The methods used to evaluate the environmental impacts of the Proposed Project on geology, soils, seismicity, and paleontological resources involved a review and assessment of published maps, professional publications, and reports pertaining to the geology, soils, and seismicity within the Proposed Project area vicinity. Information reviewed included USGS and CGS geologic maps (CDGM 1966), NRCS soils maps (NRCS 2021), California seismic hazard zone mapping (Bryant and Hart 2007; CGS 2008, 2010;), California Department of Water Resources (DWR) California Statewide Groundwater Elevation Monitoring (CASGEM) groundwater information (DWR 2020a, 2020b), and USGS historic earthquake data. In addition, Rutherford & Chekene conducted a site-specific geotechnical investigation (2021). A records search at the UCMP was conducted on December 2, 2020, for paleontological resources.

8.4.2 Criteria for Determining Significance

The Proposed Project would result in a significant impact on geology, soils, seismicity, and paleontological resources if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction; or
    - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

CEQA does not establish criteria for determining whether a paleontological resource is unique.

The following criteria were identified in the Initial Study for the Proposed Project as having no impact and are therefore not considered further in the impact analysis:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

8.4.3 Environmental Impacts

Impact GEO-1: Cause Damage to Facilities and Exposure of People to Hazards from Strong Seismic Events, Including Ground Shaking — Less than Significant

Seismically induced ground shaking can cause substantial damage to structures. The severity of ground shaking experienced at a specific location depends on a variety of factors, such as the magnitude and duration of the seismic event, fault type associated with the event, distance from the epicenter, and physical properties of the underlying geology and soils.

Due to the Proposed Project's distance from active faults and the underlying geologic and soil conditions, the Central Valley generally experiences infrequent, lower levels of ground shaking than many other regions of California. Recent seismic events associated with the San Andreas Fault Zone have resulted in light or moderate ground shaking in the Turlock area. Little to no damage would occur to most newly constructed structures (e.g., storage tanks and groundwater wells) in the Turlock area following ground shaking of this magnitude. Additionally, CDFA would be required to comply with CBC standards which would further minimize seismic-related impacts by ensuring that all structures are designed and constructed in compliance with California's seismic-related engineering standards. Any potential for foundational or structural damage associated with seismic ground shaking and adverse effects to structures or people would be minimal. Potential impacts related to seismic ground shaking would be **less than significant**.

Impact GEO-2: Result in Risk to Property and Life from Expansive Soils — Less than Significant

Soils that contain a relatively high percentage of clay minerals have the potential to shrink and swell with changing moisture conditions. The main soil types found in the vicinity of the Proposed Project site include Delhi loamy sand, Dinuba sandy loam, and Greenfield sandy loam (NRCS 2021). These soils are characterized as loamy sand and sandy loams with low clay composition and low degree of plasticity. As such, these soils are not considered expansive. Therefore, this impact would be **less than significant**.

Impact GEO-3: Result in Substantial Soil Erosion or Loss of Topsoil — Less than Significant

Construction activities would have the potential to contribute to accelerated erosion. During construction, clearing, grubbing, and grading activities would remove ground cover and expose and disturb soils. Exposed and disturbed soil would be vulnerable to erosion from wind and precipitation events, with soil particles becoming entrained in the runoff. Altered drainage patterns on site as a result of construction could also cause redirection and concentration of runoff, potentially further exacerbating the erosion problem.

A SWPPP pursuant to either the NPDES General Construction Permit would be required for construction permitting and would include erosion and sediment control BMPs, such as silt fences, straw hay bales, gravel or rock-lined ditches, water check bars, broadcasted straw, hydroseeding, or other suitable measures. These BMPs would be implemented to ensure effective erosion control during construction. Exposed soils within the work area would be stabilized or landscaped following completion of construction activities. With erosion control BMPs and SWPPP compliance, impacts related to accelerated erosion during construction are expected to be **less than significant**.

Impact GEO-4: Result in Subsidence, Liquefaction, or Collapse Due to Seismic Activity or an Unstable Geologic Unit or Soil — Less than Significant

No specific liquefaction hazards have been identified in Stanislaus County (Bryant and Hart 2007). However, a geological hazards evaluation (Rutherford & Chekene 2021) indicated potentially non-contiguous pockets of liquefiable soil materials at the Proposed Project site. Geotechnical exploratory borings encountered groundwater at depths ranging from 20 to 25 feet bgs (Rutherford & Chekene 2021). However, local groundwater conditions likely fluctuate seasonally and may be at high as 12 feet bgs during wet years (DWR 2020b).

Liquefaction in localized areas could result in substantial differential settlement and damage concrete foundations and utility lines. The geological hazards evaluation predicts a maximum estimated liquefaction settlement of up to 3.2 inches (Rutherford & Chekene 2021). Under these parameters, the potential for damage to structures as a result of liquefied settlement can be addressed through compliance with the CBC and implementation of standard construction practices. The CBC is intended to ensure that buildings resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as nonstructural damage. With adherence to construction specifications as defined in the CBC, potential impacts from liquefication would be less than significant.

The Proposed Project area topography is flat with slopes ranging from zero to less than 3% grade. Alterations to the topography and subsurface conditions would be limited to the temporary construction and shallow excavation for building foundations. During this period, open trenches are at risk of potential failure. The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) outlines specific excavation and trenching standards for building (29 CFR Section 1926.650) and utility trenching operations (29 CFR Section 1926.652). In addition, these risks are further minimized through compliance with State regulations and the CBC and implementation and standard construction practices. Operation of the Proposed Project does not include groundwater extraction or other activities that may increase the risk associated with differential settlement or subsidence. Therefore, potential impacts from the Proposed Project that could result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse would be considered **less than significant**.

Impact GEO-5: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature — Less than Significant

No paleontological resources are known at the Proposed Project site or within a 1-mile radius (UCMP 2020). However, fossil specimens from sediments referable to the Modesto Formation have been reported at a variety of locations throughout the San Joaquin Valley, including Stockton, Tracy, Manteca, Modesto, and Merced. Destruction of unanticipated paleontological resources may be considered a significant impact.

Most construction-related earthmoving activities involve relatively shallow excavation and grading, less than 3 feet bgs, and will mostly be within soils previously disturbed by previous agricultural activities. The potential for these shallow earthmoving activities to encounter paleontological resources is discountable. Deeper excavations for building foundations or other Project components greater than 8 feet bgs has a higher likelihood of encountering fossils meeting the significance criteria. However, subsurface exploratory borings encountered soils up to the maximum exploratory depth of 30 feet bgs (Rutherford & Chekene 2021). The potential for fossils to occur in soils underlying the Proposed Project site or for construction-related activities to encounter geological rock units is low. Therefore, the potential for the Proposed Project to directly or indirectly destroy a unique paleontological resource is considered **less than significant.**

Chapter 9
Greenhouse Gas Emissions and Energy

9.1 OVERVIEW

This chapter describes the regulatory and environmental setting and potential impacts of the Proposed Project related to GHG emissions and energy and then evaluates impacts related to the Proposed Project's forecasted energy usage and GHG emissions. This may include fuel and electricity consumption during construction and operation, as well as consistency with State or local plans for renewable energy or energy efficiency.

9.2 REGULATORY SETTING

9.2.1 Federal Laws, Regulations, and Policies

Corporate Average Fuel Economy and Greenhouse Gas Emissions Standards

The federal government is responsible for establishing regulations to improve the efficiency of motor vehicles. The NHTSA CAFE standards regulate how far vehicles must travel on a gallon of fuel. NHTSA sets CAFE standards for passenger cars and for light trucks (collectively, light-duty vehicles), and separately sets fuel consumption standards for medium- and heavy-duty trucks and engines (NHTSA 2021). Jointly with CAFE, NHTSA also regulates GHG emissions from vehicles of various weight classes.

The CAFE and GHG emissions standards have been rolled out in multiple phases. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2020a). In April 2020, NHTSA and USEPA amended the CAFE and GHG emissions standards for passenger cars and light trucks and established new less stringent standards, covering model years 2021 through 2026 known as the SAFE I Rule (USEPA 2020b). The NHTSA and USEPA are currently considering repealing the SAFE I Rule as it may have overstepped the agency's authority by issuing regulations in preemption of state and local laws related to fuel economy standards (NHTSA 2021).

The USEPA has implemented a mandatory GHG emission reporting regulation (40 CFR Part 98) which requires certain industries to report annually their GHG emissions. The Proposed Project is not a mandatory industry and will likely be below the reporting threshold. The USEPA, under the Greenhouse Gas Tailoring rule, has mandated Prevention of Significant Deterioration and Title V requirements applies to facilities whose stationary source carbon dioxide equivalents (CO_2e) emissions exceed 100,000 tons per year. The Proposed Project will have GHG emissions less than 100,000 tons so the tailoring rule is not applicable.

Clean Air Act

Section 608 of the CAA prohibits the knowing release of refrigerant during the maintenance, service, repair, or disposal of air conditioning and refrigeration equipment. The USEPA requires proper refrigerant management practices by those who buy or sell refrigerant, technicians, owners and operators of air conditioning and refrigeration systems and others. These requirements apply for all refrigerants that contain ozone depleting substances and non-exempt substitute refrigerants.

Energy Policy Act

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. This act included establishing energy-related tax incentives for energy efficiency and conservation; renewable energy; oil and gas production; and electricity generation and transmission. The act also established increased amounts of renewable fuel (e.g., ethanol or biodiesel) to be used in gasoline sold in the U.S.; provisions to increase oil and natural gas production on federally-owned lands, and federal reliability standards regulating the electrical grid.

9.2.2 State Laws, Regulations, and Policies

Greenhouse Gas Emissions

In recent years, California has enacted a number of policies and plans to address GHG emissions, energy, and climate change. In 2006, the California State Legislature enacted AB 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 codified an overall goal for reducing California's GHG emissions to 40 percent below 1990 levels by 2030. Executive Orders (EOs) S-3-05 and B-16-2012 further extend this goal to 80 percent below 1990 levels by 2050. CARB has completed rulemaking to implement several GHG emission reduction regulations and continues to investigate the feasibility of implementing additional GHG emission reduction regulations. These include the low carbon fuel standard, which reduces GHG emissions associated with fuel usage, and the Renewables Portfolio Standard (RPS), which requires electricity suppliers to increase the amount of electricity generated from renewable sources to certain thresholds by various deadlines. In 2018, SB 100 updated the RPS to require 50 percent renewable resources by the end of 2026, 60 percent by the end of 2030, and 100 percent renewable energy and zero

carbon resources by 2045. EO B-55–18 signed by Gov. Brown set a goal of statewide carbon neutrality by 2045 and net negative emissions thereafter.

The California Building Code (Title 24) governs construction of buildings in California. Parts 6 and 11 of Title 24 are relevant for energy use and green building standards, which reduce the amount of indirect GHG emissions associated with buildings.

CARB approved the First Update to the AB 32 Scoping Plan on May 22, 2014 (CARB 2014). This update defines climate change priorities for the next 5 years and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The update also highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals and evaluates how to align the State's longer term GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released and adopted a 2017 Scoping Plan Update (CARB 2017) to reflect the 2030 target set by EO B-30-15 and codified by SB 32 (CARB 2021a). The Scoping Plan Update developed statewide inventory projection data for 2030, as well as identified reduction strategies capable of securing emissions reductions that allow for achievement of the EO's new interim goal (CARB 2017). Emission reduction strategies in the 2017 Scoping Plan Update include continuation of the Cap-and-Trade Program through 2030, and incorporates a Mobile Source Strategy that includes strategies targeted to increase Zero Emission Vehicle fleet penetration and a more stringent target for the Low Carbon Fuel Standard by 2030. The Second Update also incorporates approaches to cutting short-lived climate pollutants under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), and acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon.

CARB has implemented a mandatory reporting regulation for GHG emissions for several industries. The Proposed Project is not a mandatory industry and will likely be below the reporting threshold.

State Vehicle Fleet Regulations

SB 498 requires DGS, starting no later than the 2024–25 fiscal year, to ensure that at least 50 percent of the light-duty vehicles purchased for the state vehicle fleet each year are zero-emission. In addition to the statutory targets for transitioning the state fleet to increasing levels of zero-emission vehicles, DGS has in place ZEV-first purchasing mandates applicable to all state agencies that purchase vehicles for the state fleet. These mandates prioritize pure ZEVs (i.e., battery electric and hydrogen fuel-cell vehicles), although allowing for plug-in hybrids and other vehicles to be purchased if the purchasing agency can demonstrate why a pure ZEV cannot meet their transportation requirements

Refrigerant Management Program

As part of the California Global Warming Solutions Act of 2006 (AB 32) the CARB adopted a regulation in 2009 creating the Refrigerant Management Program to reduce GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal.

The Refrigerant Management Program is designed to:

- Reduce emissions of high-global warming potential (high-GWP) refrigerants from leaky stationary, non-residential refrigeration equipment;
- Reduce emissions from the installation and servicing of refrigeration and air-conditioning appliances using high-GWP refrigerants; and
- Verify GHG emission reductions.

The strategy of the regulation includes:

- Registration;
- Refrigerant leak detection and monitoring;
- Leak repair;
- Reporting and recordkeeping;
- System retrofit or retirement planning;
- Required service practices; and
- Refrigerant distributor, wholesaler, and reclaimer prohibitions, recordkeeping, and reporting.

High-GWP refrigerants such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) are used in a large variety of refrigeration and air-conditioning systems.

In California, a more rapid reduction in HFC use is required than specified in the Kigali Amendment (International amendment to the Montréal Protocol for reducing Ozone Depleting Substances) in order to meet official state targets for GHG reduction, as determined by an analysis conducted by Research Division staff at CARB. SB 1383 specifies a target of 40 percent reduction in statewide HFC emissions below 2013 levels by 2030. The measures needed to meet this target were developed first in the Short-Lived Climate Pollutant Strategy (SLCP

Strategy) adopted by CARB's Board in March 2017. CARB is working on additional rulemaking related to refrigerants and may be applicable to the project in the future.

Energy

California Integrated Energy Policy

Senate Bill 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an Integrated Energy Policy Report (IEPR) for the governor and legislature every 2 years. The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2021). The 2019 Integrated Energy Policy Report (CEC 2020) describes California's progress in renewable electricity sources and notes that additional solar and wind resources are needed to reach the goal to cut emissions from the electricity sector to zero while meeting an increasing demand and maintaining energy reliability, controlling costs, and ensuring that benefits reach all Californians. A key challenge is that about 75 percent of the available flexible capacity comes from natural gas power plants as the electricity market grows resources such as energy storage and demand management will help to better integrate renewables and decrease the use of natural gas especially for flexible capacity. Improving building energy use including transitioning to electric water and space heating options as well as integration of smart technologies are a key part of the energy policy. A key policy is implementation of zero-emission vehicles to reduce air pollution. This will require increasing the availability of refueling infrastructure.

Renewables Portfolio Standard

California's RPS, updated in 2018 under SB 100, sets a goal of obtaining 100 percent zero-carbon electricity for the State by 2045. Interim targets are established to achieve 33 percent electricity produced from renewable sources by 2020 and 50 percent by 2026.

California Building Code Title 24

The California Building Code (Title 24) governs construction of buildings in California. Parts 6 and 11 of Title 24 are relevant for energy use and green building standards, which reduce the amount of indirect GHG emissions associated with buildings.

Climate Change Scoping Plan

The energy sector is one of the key sectors targeted in the Climate Change Scoping Plan, which has the following goals and actions related to energy that may apply to the Proposed Project, reasonably foreseeable distribution components, and alternatives (CARB 2017):

- Achieve sector-wide, publicly-owned utility, and load-serving entity specific GHG reduction planning targets set by the State through Integrated Resource Planning.

- Reduce fossil fuel use.
- Reduce energy demand.
- Reduce dependence on fossil natural gas.

9.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

9.3 ENVIRONMENTAL SETTING

9.3.1 Greenhouse Gas Emissions

Climate change results from the accumulation in the atmosphere of GHGs, which are produced primarily by the burning of fossil fuels for energy. Because GHGs (carbon dioxide [CO_2], methane, and nitrous oxide) persist and mix in the atmosphere, emissions anywhere in the world affect the climate everywhere in the world. GHG emissions are typically reported in terms of CO_2e which converts all GHGs to an equivalent basis taking into account their global warming potential compared to CO_2.

Anthropogenic (human-caused) emissions of GHGs are widely accepted in the scientific community as contributing to global warming. Temperature increases associated with climate change are expected to adversely affect plant and animal species, cause ocean acidification and sea level rise, affect water supplies, affect agriculture, and harm public health.

Global climate change is already affecting ecosystems and societies throughout the world. Climate change adaptation refers to the efforts undertaken by societies and ecosystems to adjust to and prepare for current and future climate change, thereby reducing vulnerability to those changes. Human adaptation has occurred naturally over history; people move to more suitable living locations, adjust food sources, and more recently, change energy sources. Similarly, plant and animal species also adapt over time to changing conditions; they migrate or alter behaviors in accordance with changing climates, food sources, and predators.

Many national, as well as local and regional, governments are implementing adaptive practices to address changes in climate, as well as planning for expected future impacts from climate change. Some examples of adaptations that are already in practice or under consideration include conserving water and minimizing runoff with climate-appropriate landscaping, capturing excess rainfall to minimize flooding and maintain a constant water supply through dry spells and droughts, protecting valuable resources and infrastructure from flood damage and sea level rise, and using water-efficient appliances.

In 2018, total California GHG emissions were 425 million metric tons of carbon dioxide equivalents (MMT) CO_2e (CARB 2020). This is 6 MMT CO_2e below the 2020 GHG Limit set by AB 32. This represents a per capita GHG emission rate of 10.7 metric tons (MT) per person. In 2018, the transportation sector of the California economy was the largest source of emissions, accounting for approximately 40 percent of the total emissions and represented a decrease in emission for this sector for the first time since 2013. Emissions from the electricity sector account for 15 percent of the inventory and showed a slight increase in 2018 due to less hydropower. Emissions from high GWP gases have continued to increase as they replace ozone-depleting substances that are being phased out.

A baseline inventory was conducted of GHG emissions in Stanislaus County, including the nine cities within the county, in 2005 (ICF International 2013). Total 2005 GHG emissions from the Stanislaus County region were approximately 6.042 MMT CO_2e (specifically, 6,042,232 MT CO_2e), which does not include stationary-source emissions (658,692 MT CO_2e). Stationary sources, including landfills, were not included because they are regulated by separate federal and state regulations. The greatest regional GHG emission sources were building energy (a combined electricity and natural gas contribution of 40 percent), on-road transportation (27 percent), and agriculture (24 percent). Water-related emissions were approximately 0.5 percent. Per capita GHG emissions for Stanislaus County were 10.2 MT CO_2e, which was less than the 2005 statewide per capita GHG emission rate (12.5 MT CO_2e) but similar to the per capita emission rate of other counties (e.g., Sacramento County, 11.0 MT CO_2e; San Diego County, 10.0 MT CO_2e) (ICF International 2013).

The Proposed Project would replace three existing facilities that currently use energy for employee travel and laboratory operations. The existing CAHFS Turlock Laboratory is 1,080 ft^2 of office space and 4,200 ft^2 of laboratory space. The existing CAHFS Turlock Laboratory has 17 employees and conducts activities similar to those that would take place at the Proposed Project facility, including necropsy, histopathology, bacteriology, biotechnology, parasitology, and serology testing. The existing facility has a cremator that typically operates one load per day, 5 days a week, with up to 1,000 pounds per hour of animal waste material. The existing AHFSS Modesto District Office has 14 employees with 12 of these employees being field staff who do not come to the office regularly. The CDFA Stockton Regional Office of the MDFS has 13 employees with 11 of these employees being field staff who do not come to the office regularly.

The existing employees who commute to the project site consume energy in the form of fossil fuels in their vehicles. Based on the VMT analysis in Table 14.2 in the Transportation Chapter and typical carbon intensity for the vehicles, **Table 9-1** shows the GHG emissions of the existing facilities due to employee commutes. The existing buildings consume electricity and natural gas for space heating and cooling, lighting, ventilation, and operation of laboratory equipment, as well as operation of the cremator at the existing Turlock facility. Table 9-1 shows the existing CAHFS Turlock Laboratory facility's electricity, natural gas, and water use based on data provided by CDFA for 2017-2019. The GHG emissions based on the activity usage were calculated using CalEEMod Version 2016.3.2 defaults. The other existing facilities also use

electricity and natural gas, but their usage is substantially smaller because they have less intense activities and office square footage. Additional GHG emissions associated with the existing facilities include refrigerant leaks, GHG from combustion of animal carcasses, landscape maintenance equipment, and customer and delivery vehicles associated with the existing facilities. The information to estimate these sources was not readily available and is assumed to be similar to usage with the Proposed Project.

Table 9-1. Existing Facility GHG Emissions (Combined)

Emission Source	Activity	Activity Units	GHG Emissions (MT CO_2e)[2]
Employee Commute	223,017	miles	103
Electricity Use[1]	122,745	kWh	23
Natural Gas Use[1]	7,707	therms	41
Water Use[1]	551,720	gallons	132
Waste	422.4	tons	212
		Total	**511**

Notes: kWh = kilowatt-hours; MT CO_2e = metric tonnes of carbon dioxide equivalents.

1. Electricity, natural gas and water use are based on the average use at the existing Turlock Laboratory facility from 2017 to 2019.

2. GHG emissions were calculated in CalEEMod Version 2016.3.2 using default factors for carbon intensity.

9.3.2 Energy Resources and Consumption

California has extensive energy resources, including an abundant supply of crude oil, high production of conventional hydroelectric power, and leads the nation in electricity generation from renewable resources (solar, geothermal, and biomass resources) (U.S. Energy Information Administration [EIA] 2020). California has the second highest total energy consumption in the United States but one of the lowest energy consumption rates per capita (48th in 2018) due to its mild climate and energy efficiency programs (EIA 2020). A comparison of California's energy consuming end-use sectors indicates that the transportation sector is the greatest energy consumer, by approximately two times compared to the other end-use sectors (Industrial, Commercial, and Residential, which are listed in order of greatest to least consumption) (EIA 2020). California is the largest consumer of motor gasoline and jet fuel in the United States (EIA 2020).

TID and PG&E provide electricty and natural gas, respectively, to the Proposed Project area. **Table 9-2** provides a more detailed breakdown of TID energy resources. Approximately 29

percent of the power provided by TID comes from eligible renewable sources. Approximately 26 percent comes from large hydroelectric sources, while the remaining 46 percent comes from a mixture of nuclear, natural gas, and unspecified sources of power.

Table 9-2. Summary of Energy Sources for TID

Energy Resources	2019 TID Power Mix (%)	2019 California Power Mix (%)**
Eligible Renewable	28.8	31.7
Coal	0	3
Large Hydroelectric	25.7	14.6
Natural Gas	30.1	34.2
Nuclear	0.5	9
Unspecified Power*	0.2	7.3
Total	**100**	**100**

Notes:

* "Unspecified sources of power" is defined as electricity from transactions that are not traceable to specific generation sources.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the identified year.

Sources: TID 2020.

The Proposed Project will replace three existing facilities that currently use energy for employee travel and laboratory operations. The existing CAHFS Turlock Laboratory is 1,080 ft^2 of office space and 4,200 ft^2 of laboratory space. The existing Turlock laboratory has 17 employees and conducts activities similar to those that will take place in the Proposed Project including necropsy, histopathology, bacteriology, biotechnology, parasitology and serology testing. This facility has a cremator which typically operates one load per day 5 days a week with up to 1,000 pounds per hour of animal waste material. The existing CDFA Animal Health Branch Modesto District Office has 14 employees with 12 of these employees being field staff who do not come to the office regularly. The CDFA Stockton Regional Office of the MDFS has 13 employees with 11 of these employees being field staff who do not come to the office regularly.

The existing employees who commute to the project site consume energy in the form of fossil fuels in their vehicles. Based on the VMT analysis in Table 14-2 in Chapter 14, *Transportation,* and typical fuel efficiency of vehicles, **Table 9-3** shows the gasoline and diesel consumption of the existing facilities due to employee commutes. For further details see **Appendix C**.

Table 9-3. Existing Gasoline and Diesel Fuel Use by Employees

Office	Annual VMT (miles)	Diesel Use (gallons)	Gasoline Use (gallons)
Animal Health Branch	83,898	16	3,128
Milk Dairy Food Safety	46,926	9	1,750
Turlock Lab	92,193	17	3,438
Total	**223,017**	**42**	**8,316**

The existing buildings consume electricity and natural gas for space heating and cooling, lighting, ventilation, and operation of laboratory equipment as well as operation of the cremator at the existing Turlock facility. **Table 9-4** shows the existing CAHFS Turlock Laboratory facility electricity and natural gas use based on data provided by the Applicant for 2017-2019. The other facilities will have some additional electricity and natural gas but substantially smaller since they have less intense activities and office square footage.

Table 9-4. Existing Electricity and Natural Gas Use at Turlock CAHFS Facility

Month	2017 Electrical (kWh)	2018 Electrical (kWh)	2019 Electrical (kWh)	2017 Natural Gas (therms)	2018 Natural Gas (therms)	2019 Natural Gas (therms)
Jan	8,199	8,340	7,901	1,132	766	1,082
Feb	7,475	7,970	7,907	794	770	960
Mar	6,846	7,500	6,895	479	520	717
Apr	7,883	9,486	9,185	405	343	767
May	10,559	9,243	8,552	600	292	488
Jun	13,565	12,706	12,547	379	421	790
Jul	14,898	15,326	13,210	345	582	571
Aug	15,706	15,362	15,352	415	384	596
Sep	14,748	12,877	13,345	423	294	601
Oct	9,210	9,949	8,586	589	533	614
Nov	8,011	7,645	7,848	805	848	737
Dec	8,423	7,769	7,210	1,014	969	1,095
Total	**125,523**	**124,173**	**118,538**	**7,380**	**6,722**	**9,018**

9.4 IMPACT ANALYSIS

9.4.1 Methodology

Construction-Related Emissions

Construction of the Proposed Project would generate direct GHG emissions from the combustion of fossil fuels in construction equipment, material hauling vehicles, and construction worker commutes. The Proposed Project construction-related emissions were modeled using the CalEEMod Version 2016.3.2. Project-specific construction parameters (e.g., construction schedule, total acres disturbed, quantity of import material, amount of development per land use) were used as inputs in the air quality analysis. Construction was modeled to begin in January 2022 and last approximately 30 months, through June 2024, with construction typically occurring 5 days per week. While this construction duration may be inclusive on times during which heavy-duty equipment and construction vehicles would not be used, the emissions estimates reflect a conservative estimate of construction occurring for the entirely of the 30 months. Construction phases were based upon CalEEMod default phases for land use development, with phase durations scaled to the anticipated project construction duration of 30 months and assuming some overlap of paving and architectural phases with the building construction activities; this is considered a conservative approach to construction phasing, as it extends the building construction phase and results in an increase in total annual emissions. Demolition was not modeled, as the existing site would be decommissioned to allow for future use, but not demolished. Removal of the existing agricultural irrigation utilities at the Proposed Project site is considered captured as a part of site preparation and does not fit the expectation of demolition as it would be modeled in CalEEMod. Construction equipment type, number of pieces, horsepower, and load factor reflect CalEEMod default data inputs for a project of this size. An air compressor was added to the site preparation phase to reflect anticipated equipment requirements, as noted in the Project Description, for utility trenching.

The site is anticipated to be balanced, with no requirement for import or export of fill materials. Approximately 2,000 cubic yards of material and/or soil import was accounted for to serve landscaping purposes. Assuming 16 cubic yards per truck trip, consistent with CalEEMod defaults, a total of 125 trucks (250 one-way truck trips to and from the project site) were accounted for and modeled with the architectural coating phase. While these trucks would serve landscaping purposes and not architectural coating, this captured the emissions from this activity in the latter portion of the construction phases. Worker and truck trips for construction activities were otherwise modeled using CalEEMod defaults, with an additional two trucks (4 one-way trips to and from the project site) to account for water trucks during ground disturbing activities (site preparation and grading phases).

Where project-specific information was otherwise not available, default parameters provided by each model were used. It should be noted that default assumptions in the models are

typically conservative to avoid underestimating emissions when project-specific information is not available.

Operational Emissions

Operation of the Proposed Project would generate both direct and indirect GHG emissions. Direct emissions include fossil fuel combustion from vehicles traveling to and from the Proposed Project, landscape maintenance equipment, emergency generator, natural gas heaters and boilers. The cremator will result in direct GHG emissions from the natural gas and cremation of the animal remains. Direct GHG emissions will result from leaks in the refrigeration systems used in the laboratory. Indirect GHG emissions will come from water use, solid waste, and electricity use. The Proposed Project operational emissions were quantified according to guidance and methods from SJVAPCD, CARB, and USEPA as previously referenced above. The process for determining the parameters and assumptions used to model these emissions, along with the modeling methods, are described below. The existing workforce will be increased to support future operations; the operational analysis assumes that 17 additional workers will be needed to support operations related to this project.

Stationary Combustion Sources

Combustion emission sources include two natural-gas fired domestic heaters with a heat rating of 0.1 MMBtu per hour per heater, two natural-gas fired laboratory heaters with a heat rating of 0.5 MMBtu per hour per heater, three natural-gas fired boilers with a heat rating of 0.75 MMBtu per hour per boiler and a 500-kilowatt-rated diesel-fired emergency generator.

Emissions from operation of the proposed heaters and boilers will meet the standards detailed in SJVAPCD Rule 4308 for Boilers, Steam Generators and Process Heaters 0.075 MMBtu per hour to less than 2.0 MMBtu per hour. Boilers and heaters will also be required to meet the applicable best performance standards (BPS) established by the SJVAPCD for GHG emission reductions. Operation of the boilers and heaters was assumed to have no restrictions, allowing them to operate 24 hours per day, 8,760 hours per year. Direct criteria air pollutant and GHG emissions from natural gas consumption were calculated using natural gas emission factors of "Appendix D_2020-04-0 Default Data Tables" for CalEEMod.

Diesel emergency generator emissions were estimated using USEPA nonroad compression-ignition engine emission standards for Tier 4 engines, and sulfur content for ULSD. The generator was assumed to operate for 1 hour a day for up to 50 hours a year for testing and maintenance purposes. The emergency generator was assumed to operate at approximately 73 percent load, per the default load factor in CalEEMod.

Emissions associated with the animal cremator originate from four 1.0 MMBtu per hour primary and one 2.25 MMBtu per hour secondary natural gas-fired burners and the animal charges. It was assumed that there would be up to two charges of 1,250 pounds per day of remains. The animal cremator will be limited by permit conditions to 16 hours per day and

237 days per year of operation. The combustion of the animal carcasses will emit GHG emissions due to the carbon contained in the animal tissue. It was assumed that the animal tissue contains 25 percent carbon and that all carbon is released as CO_2. The GHG emissions from the animal tissue would be classified as biogenic emissions and some regulations and inventories treat these emissions differently. The biogenic emissions are included to ensure a complete representation of the direct GHG emissions associated with this project.

Mobile Sources

The operational analysis assumes that 17 additional workers will be needed to support operations related to this the Proposed Project, along with an increase in trips associated with walk-ins and deliveries. Trip distances were derived from the transportation study developed for the Proposed Project. Mobile-source emissions related to these vehicle trips were estimated using CalEEMod, with the default trip rates and distances adjusted to reflect the above-noted project-specific data inputs. The VMT outputs from CalEEMod are slightly higher than those provided in Chapter 14, *Transportation*, as the transportation analysis accounted for daily worker commute trips but not the intermittent walk-in or delivery vehicle trips, which were accounted for in the estimates of air pollutant and GHG emissions as they may not contribute to traffic impacts due to the intermittent nature of such trips, but would contribute to annual operational emissions resulting from the Proposed Project.

Other Direct Operational Sources

The laboratory will have various refrigerators and freezers associated with the project which will contain chlorofluorocarbons classified as high global warming potential GHGs. These refrigerants could be emitted through equipment leaks. As discussed in the regulatory setting, refrigerant leaks and recharging of refrigerants are tracked and reported to CARB. If leaks occur, the facility is required to repair the leaks and increase monitoring frequency. Since this project is a design build, the specific refrigerants and quantity in pounds of the refrigerants is unknown at this time. This information is required in order to estimate GHG emissions based on the leak rate allowed in the regulation. Regardless of the final type and quantity of refrigerants used, the facility will be required to regularly monitor for leaks and promptly repair any leaks that are found. Thus, compliance with the regulation is assumed to adequately control and minimize the GHG emissions since quantification is not feasible at this time.

Indirect Emissions Sources

Operations would also result in an increase of solid waste generation, water consumption, and electricity demand which generate indirect GHG emissions. Since this is a unique facility, estimates were primarily based on scaling the usage from the existing Turlock Laboratory facility.

The solid waste generation rate accounted for general building operation waste generation and medical waste unique to the proposed use. Typical building operation waste generation was based on CalEEMod default factors for the proposed land use and square footage. Medical

waste quantification was based upon waste generation rates of the existing Tulare facility, scaled based on the relative square footage of that facility and the proposed facility. The two rates were added together and input into CalEEMod to estimate annual GHG emissions from solid waste disposal.

Water consumption was estimated based on existing water use data from the existing Turlock facility, which is inclusive of indoor and outdoor water use, and scaled based on the relative square footage of that facility and the proposed facility. This water consumption rate was input into CalEEMod as indoor water use to estimate annual GHG emissions from water supply, treatment, distribution, and wastewater treatment. This is likely a conservative estimate due to implementation of California green building codes and landscaping practices which will reduce water demand.

Electricity demand were estimated based on the electricity consumption data for the existing Tulare lab, and scaled based on the relative square footage of that facility and the proposed facility. Emissions associated with electricity consumption were calculated outside of CalEEMod. Indirect GHG emissions associated with electricity were estimated using intensity factors from the "CalEEMod User Guide Appendix D_2020-4-0" for TID.

Energy Usage and Consumption

The impact analysis used basic assumptions regarding construction-related fossil fuel use and operational energy requirements. Construction-related fossil fuel use was estimated based on the anticipated construction equipment use and vehicle trips as detailed in Section 9.4.1, "Methodology." To estimate the diesel and gasoline use from the construction equipment, material hauling vehicles, vendor vehicles and worker vehicles the GHG emissions from these categories was divided by the carbon intensity factor which is in terms of MT CO_2e per gallon of fuel. This carbon intensity factor was from the EIA (2016). Further details are in Appendix C.

During operation of the Proposed Project, there will be fossil fuel use associated with employee, vendors, and customer vehicles trips, lawn maintenance as well as natural gas used to provide space heating, fuel boilers, emergency generator and the cremator. Other operational energy use will include electricity use for the building to run laboratory equipment, power lights, HVAC system, and other electricity needs. The details of these activity assumptions are found in Section 9.4.1, "Methodology." To estimate the gallons of diesel and gasoline from the operational vehicles, EMFAC 2021 was run for Stanislaus County to get the total VMT and fuel consumption for each vehicle class and fuel type. Dividing the total VMT for a given vehicle class and fuel type by the fuel consumption, a fuel consumption per mile factor was obtained. This fuel consumption factor was multiplied by the vehicle class and fuel type weight and the vehicle miles traveled for the project as estimated in CalEEMod. Further details are in Appendix C.

9.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact related to GHG emissions if it would:

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

The Proposed Project would result in a significant impact to energy if it would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The SJVAPCD recommends evaluating the significance of operational project-specific GHG emission impacts on global climate change, based on the use of BPS. The SJVAPCD defines BPS as "the most effective achieved-in-practice means of reducing or limiting GHG emissions from a GHG emissions source." Types of BPS include equipment type, equipment design, operational and maintenance practices, measures that improve energy efficiency, and measures that reduce VMT. Currently, SJVAPCD has established BPS for boilers and heaters. There is no BPS currently established for cremators and emergency generators. There are not clear BPS or thresholds for the evaluation of construction-related or short-term, one-time effects under CEQA.

The SJVAPCD threshold has also not been updated to reflect the SB 32 2030 goal, which needs to be considered given the timeline of the project construction activities. Therefore, the published mass emissions thresholds of other California air districts were reviewed and considered in developing an appropriate threshold. The applicable threshold for the Proposed Project's construction and operational emissions was determined to be 10,000 MT per year, which is the threshold for industrial sources used by the Santa Barbara County Air Pollution Control District (SBCAPCD) (SBCAPCD 2015) and the SCAQMD (SCAQMD 2008). Although quantitative construction-specific thresholds have not been determined by the SCAQMD, the SBCAPCD recommends amortizing construction emissions over the life of the project (defined as 30 years) and adding it to the operational emissions (SCAQMD 2008). In addition, where construction-specific quantitative significance thresholds have not been defined, operational significance thresholds are typically applied or construction emissions are amortized and considered along with operational emissions to determine a project's overall significance. Therefore, for the Proposed Project, GHG emissions have been considered less than significant

if the generated GHG emissions are less than the operational threshold of 10,000 MT CO_2e/year.

With regard to the second criterion of consistency with applicable plans and policies, the following impact analysis evaluates the project's operational-related emissions for consistency with CARB's Scoping Plan and updates, which outline the strategies that will need to be implemented for the state to meet the goals of AB 32, SB 32, and EO S-3-05. Specifically, if a proposed component would not conflict with CARB's GHG emission reduction policies, it would have a less-than-significant impact.

9.4.3 Environmental Impacts

Impact GHG/E-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment — Less than Significant with Mitigation

Construction Impacts

Construction-related GHG emissions would result from the combustion of fossil-fueled construction equipment, material hauling, and worker trips. These emissions were estimated using CalEEMod version 2016.3.2, with default assumptions as described in the methodology section. The Proposed Project's construction-related GHG emissions are estimated at 524 metric tonnes of carbon dioxide equivalents (MT CO_2e). Further details are available in Appendix C.

Operational Impacts

Operational GHG emissions would result from fossil-fueled equipment and motor vehicles, building energy use, water use, and solid waste. The Proposed Project's operational emissions were estimated with CalEEMod Version 2016.3.2 using assumptions detailed in the methodology above. Additional GHG emissions will result from the operation of stationary sources including boilers, heaters, and the cremator which were estimated as described in the methodology. Some additional sources of GHG emissions were not able to be quantified at this time due to lack of sufficient detail available since this is a design build project. The laboratory will have various refrigerators and freezers associated with the project which will contain chlorofluorocarbons classified as high global warming potential GHGs. These refrigerants could be emitted through equipment leaks. As discussed in the regulatory setting, refrigerant leaks and recharging of refrigerants are tracked and reported to CARB. If leaks occur, the facility is required to repair the leaks and increase monitoring frequency. Since this project is a design build, the specific refrigerants and quantity in pounds of the refrigerants is unknown at this time. This information is required in order to estimate GHG emissions based on the leak rate allowed in the regulation. Regardless of the final type and quantity of refrigerants used, the facility will be required to regularly monitor for leaks and promptly repair any leaks that are

found. Thus, compliance with the regulation is assumed to adequately control and minimize the GHG emissions since quantification is not feasible at this time.

Table 9-5 shows the GHG emissions from operation by source category. Further details of these GHG emissions calculations can be found in Appendix C. As shown in Table 9-5, the operational emissions are estimated to be 4,078 MT CO_2e per year. This is a conservative estimate as it does not subtract out the existing facility GHG emissions estimated in Table 9-1. It also does not take into account the building energy reductions that may occur due to implementation of California Green Building Standards which may reduce some of the building energy use, natural gas use, and water use. The emission estimate is based on existing carbon intensity for electricity and does not take into account further implementation of the RPS as well as any potential renewable energy that may be considered during the design build process.

Table 9-5. Proposed Project Operational GHG Emissions

Emissions Source	Non-Permitted	Permitted	Total
Area	0.004	-	0.004
Energy	690.95	-	690.95
Mobile	292.99	-	292.99
Stationary Sources	1,256.27	1,575	2,831.12
Waste	507.39	-	507.39
Water	1.62	-	1.62
Total Annual Operational Emissions	**2,749**	**1,575**	**4,324**

Given that some of the GHG emissions are tentative since this is a design build project and final features for energy efficiency, VMT reductions or encouragement of alternative fueled vehicles cannot be quantified at this time. Furthermore, the amount of emission from refrigeration is still unknown. Thus, implementation of Mitigation Measure GHG-1 (Refrigerant Management, Implementation of BPS for Stationary Sources and Evaluation of GHG Reduction Measures during Design-Build Process) will require the facility to evaluate the feasibility of some of these measures during the design build process and implement those deemed feasible.

Since the project GHG emissions are less than 10,000 MT CO_2e per year and Mitigation Measure GHG-1 provides for consideration of additional GHG reduction measures during the design build process as well as quantification of GHG emissions from refrigerant leaks, the impact from GHG emissions is **less than significant with mitigation.**

Mitigation Measure GHG-1: Refrigerant Management, Implementation of BPS for Stationary Sources and Evaluation of GHG Reduction Measures during Design-Build Process.

- CDFA and/or the project contractors shall quantify the total refrigerant charge of the Proposed Project's refrigerant systems and estimate GHG emissions based on the average annual leak rate for the refrigerant systems.
- CDFA and/or the project contractors shall prepare a Refrigerant Management Plan to ensure that the facility is in compliance with state and federal regulations related to refrigerants including details on their monitoring and reporting process.
- CDFA and/or project contractors shall implement BPS established by SJVAPCD for all stationary sources where a BPS has been established.
- CDFA and/or the project contractors shall evaluate the feasibility of including at a minimum number specified for each category of the GHG reduction measures listed below.

Transportation (minimum of three measures)

- Bike parking (minimum of 1 short term bike rack space per 20 vehicle spaces and 1 long-term storage space per 20 employee parking spaces)
- End of trip facilities such as showers, lockers, and changing space.
- Public transit subsidy program
- Create ridesharing program (carpool or vanpool)
- Electric vehicle charging stations

Building Efficiency and Energy Use (minimum of two measures)

- Reduce the building envelop energy use by 10 percent better than current Title 24 building codes.
- Install solar panels on the roof or parking areas.
- Install low flow water toilets, faucets, and showers.
- Install LED lighting and automatic light switches.

Landscaping (minimum of one measure)

- Use drought tolerant and native landscaping to reduce water use.
- Use recycled water for landscaping.
- Use electric landscaping equipment.

Impact GHG/E-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs — Less than Significant

Consistency with strategies outlined in CARB's Scoping Plan and future updates are used to ensure that the state goals of AB 32, SB 32, and EO S-3-05 will be met. The RPS would reduce GHG emissions compared to the existing mix of energy sources and would likely result in the components having a considerable percentage reduction by at least 2030. This is consistent with the emissions reductions goal of AB 32 and SB 32, as well as the policies and actions described in CARB's Scoping Plan.

With implementation of Mitigation Measure GHG-1 the Proposed Project would reduce and control GHG emissions for the project based on criteria to be evaluated during the design build process. Therefore, the project would comply with all applicable plans, policies, and regulations, including AB 32 and SB 32, and as well as the policies and actions described in CARB's Scoping Plan. Therefore, this impact would be **less than significant**.

Impact GHG/E-3: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation — Less than Significant

The Proposed Project would use fossil fuels during project construction which is necessary for completion of the project. The construction equipment would be subject to state and federal regulations which require engines to meet certain performance standards.

During operation, the Proposed Project would use fossil fuels to heat and operate the facility as well as dispose of animal carcasses. Employees, vendors, and visitors to the facility would use fossil fuels in vehicles used to transport them to and from the facility. The facility would consume electricity not only for lighting in the building, but also for operation of laboratory equipment and refrigeration units.

Table 9-6 shows the anticipated energy use by fuel type for construction and operation of the Proposed Project. Table 9-6 has not been adjusted to account for the baseline energy use by the existing facilities which will be replaced with the Proposed Project. While the methodology to estimate electricity and natural gas use was based on scaling the existing CAHFS Turlock Laboratory facility, the actual energy use may be lower than this due to implementation of

California Green Building Codes which have resulted in substantial building energy use reductions from older buildings.

Table 9-6. Existing Electricity and Natural Gas Use at Turlock Facility

Phase	Energy Requirement	Unit
Construction (average per year over 2.5 year construction period)		
Diesel	36,936	gallons/yr
Gasoline	10,405	gallons/yr
Building Operations		
Electrical	1,558,000	KWh/yr
Natural Gas	6,110,000	kBTU/yr
Diesel (emergency generator)	6,857	gallons/yr
Operational Transportation		
Diesel	97	gallons/yr
Gasoline	21,187	gallons/yr

Note: Totals do not add due to rounding.

Source: Modeled by AECOM in 2021;see Appendices C and D

Since the project is a design build project, details regarding specific energy efficient features are not available at this time. Potential energy efficient features include improved building envelope, energy efficient HVAC systems, installation of on-site renewable energy, availability of transportation mode shift features and support of electric and/or alternative fuel vehicles is not known at this time. These features may reduce further the energy use associated with the project and will be evaluated for feasibility during the design build process.

The services provided by the Proposed Project represent a consolidation of operations that provide necessary and important functions for the state and the agriculture operations of the state. These activities do not represent wasteful or inefficient use of energy resources.

It is not anticipated that substantial quantities of fossil fuel would be required for the Proposed Project since maintenance and operation vehicle trips would not increase substantially from existing conditions based on the addition of approximately 17 new staffing positions. Construction activities would require some fossil fuel use for construction equipment, material hauling, and worker commuting. However, the amount of fossil fuel use would not result in the need for additional fossil fuel energy resources beyond what would be available with existing resources. The amount of natural gas required would not be substantial compared to the projected available natural gas supply from PG&E. It is not anticipated that any new sources of

natural gas supply would be required to meet this demand. The amount of electricity required would not be substantial compared to the projected available electricity supply from TID, however, and it is not anticipated that any new sources of electricity generation would be required to meet this demand. Since there would not be a substantial increase in energy demand or the need for additional energy resources, this impact would be **less than significant.**

Impact GHG/E-4: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency — Less than Significant

The Proposed Project would not conflict with or obstruct any state or local goals, policies, or implementation action identified in the applicable energy plans such as the Integrated Energy Policy Report because the Proposed Project would be completed as efficiently as possible and the building would be designed to meet required efficiency standards. Thus, the Proposed Project would not conflict with any plans relating to renewable energy or energy efficiency. Therefore, this impact is considered **less than significant.**

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Chapter 10
Hazards and Hazardous Materials

10.1 OVERVIEW

This chapter describes the regulatory setting and affected environment associated with hazardous materials and wastes, the methodology and significance criteria used to evaluate impact significance, and the Proposed Project's potential impacts related to hazardous materials and wastes. Hazards related to proximity to airports, wildland fires, and emergency response are also addressed.

This chapter also addresses impacts related to the use of research materials that do not meet the standard criteria of hazardous materials but whose presence and use at the Proposed Project site may be seen as a matter of concern to the surrounding community. These materials include laboratory research animals and transgenic materials.

10.2 REGULATORY SETTING

Because regulations for hazardous materials were developed over time, hazardous materials are regulated by numerous agencies whose jurisdictions and responsibilities sometimes overlap. Federal agencies that regulate hazardous materials include the USEPA and OSHA. At the state level, agencies such as Cal/OSHA, and the California Emergency Management Agency (Cal EMA) govern the use of hazardous materials. State and local agencies often have either parallel or more stringent rules than federal agencies.

Generation, transportation, and disposal of hazardous wastes can also be regulated by different agencies. The lead federal agency is USEPA. The California Department of Toxic Substances Control (DTSC) has primary State regulatory responsibility, but may delegate enforcement authority to local jurisdictions that enter into agreements with the State agency.

The following is a review of federal and state regulations that are potentially pertinent to the Proposed Project.

10.2.1 Federal Laws, Regulations, and Policies

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 et seq.) was enacted in 1976 to address the increasing problems the nation faced from the growing volume of municipal and industrial solid waste. The RCRA sets national goals for protecting human health and the environment from the potential hazards of waste disposal, conserving energy and natural resources, reducing the amount of waste generated, and ensuring that wastes are managed in an environmentally sound manner. To achieve these goals, RCRA established three interrelated programs: the solid waste program, the hazardous waste program, and the underground storage tank program.

The hazardous waste program established a system for controlling hazardous wastes from the time they are generated to the time they are disposed ("cradle-to-grave" management). Under RCRA, owners and operators of hazardous waste treatment, storage, and disposal facilities must follow a set of standards (e.g., facility design and operation, contingency planning and emergency preparedness, and recordkeeping) to minimize risk and impacts on human health and the environment, codified in Title 40 of the CFR Part 264.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act) (42 USC Section 9601 et seq.) was established to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. CERCLA created a tax on the chemical and petroleum industries to generate funds to clean up abandoned or uncontrolled hazardous waste sites in which no responsible party could be identified (USEPA 2019a). CERCLA also granted authority to USEPA to respond directly to hazardous waste spills and required those responsible for a spill or accidental release of hazardous materials to report the release to USEPA.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) (Public Law 99-499) amended some provisions of CERCLA (USEPA 2019b). SARA increased the focus on human health problems posed by hazardous waste releases, stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, and encouraged greater citizen participation in making decisions on how sites should be cleaned up (USEPA 2019b).

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA) was enacted in October 1986. This act was created to help communities plan for chemical emergencies. It requires industry to report on the storage, use and releases of hazardous substances to federal, state and local governments. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their communities. In California, this information is implemented through the California Accidental Release Prevention (CalARP) Program.

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Section 402 of the CWA regulates stormwater discharges to surface waters through the NPDES program. The USEPA has delegated authority to the SWRCB for administration of the NPDES program in California, where it is implemented by the State's nine RWQCBs). Under the NPDES Phase II Rule, any construction activity disturbing 1 acre or more must obtain coverage under the State's General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). General Permit applicants are required to prepare and implement a SWPPP that describes the BMPs that will be implemented to avoid adverse effects on receiving water quality as a result of construction activities, including earthwork.

Energy Policy Act of 2005

Title XV, Subtitle B of the Energy Policy Act of 2005 (the Underground Storage Tank Compliance Act of 2005) contains amendments to Subtitle I of the Solid Waste Disposal Act, the original legislation that created the UST Program. As defined by law, an underground storage tank (UST) is "any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous substances and that is substantially or totally beneath the surface of the ground." In cooperation with USEPA, the SWRCB oversees the UST Program. The intent is to protect public health and safety and the environment from releases of petroleum and other hazardous substances from USTs. The four primary program elements include leak prevention (implemented by Certified Unified Program Agencies [CUPAs], described in more detail below), cleanup of leaking tanks, enforcement of UST requirements, and tank integrity testing.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (HMTA) which is administered by the U.S. Department of Transportation (USDOT). The HMTA governs the safe transportation of hazardous materials by all modes, excluding bulk transportation by water. The USDOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped or who is involved in any way with the manufacture or testing of

hazardous materials packaging or containers. The USDOT regulations pertaining to the actual movement govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Spill Prevention, Control, and Countermeasure Rule

USEPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR Part 112) applies to facilities with a single above-ground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges into navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

Occupational Safety and Health Administration Regulations

The Occupational Safety and Health Act of 1970 created the OSHA to ensure safe and healthful conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance. To fulfill this purpose, OSHA develops and enforces mandatory job safety and health standards These standards, codified in 29 CFR Part 1910, address issues that range in scope from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE) (i.e., protective equipment for eyes, face, or extremities; protective clothing; respiratory devices). They include exposure limits for a wide range of specific hazardous materials, as well as requirements that employers provide PPE to their employees wherever it is necessary (29 CFR Section 1910.132).

Biosafety Standards

Numerous federal laws regulate the possession, access, use and transfer of biohazardous materials. Title 42 CFR Part 73 implements provisions of the Public Health Security and Bioterrorism Preparedness Response Act. This act requires the Secretary of Health and Human Services to regulate the possession of certain biological agents harmful to humans. The regulation controls the access, use and transfer of select agents to ensure that these are shipped only to institutions or individuals equipped to handle them appropriately and only to those who have legitimate reasons to use them. A facility must register with the CDC if it possesses any of the 40 select agents that could "cause substantial harm to human health" listed in sections 73.3 and 73.4 of 42 CFR Part 73. Section 73.5 details what is to be done if a clinical or diagnostic laboratory is presented for diagnosis or verification of a select agent or toxin. In this situation the CDFA would be required to secure the select agent or toxin against theft, loss or release during the period between identification and transfer or destruction of the agent and any theft, loss or release of such agent or toxin is reported. Within seven calendar days after identification of the select agent or toxin except for Botulinum neurotoxin and/or Staphylococcal enterotoxin which requires reporting within 30 days. The specimens collected must be transferred in accordance with section 73.16 or destroyed on site by a recognized sterilization or inactivation process within seven calendar days. The identification of the agent

or toxin is reported to CDC or U.S. Department of Agriculture's Animal and Planet Health Inspection Service, the specimen provider and to other appropriate authorities required by federal, state or local law by telephone facsimile or email. Certain select agents or toxins require immediate reporting such as Bacillus cereus Biovar anthracis, Botulinum neurotoxins, Botulinum neurotoxin producing species of Clostridium, Ebola viruses, Francisella tularensis, Marburg virus, Variola major virus (Smallpox virus), Variola minor (Alastrim), or Yersinia pestis. Activities at this CDFA Turlock North Valley Laboratory would not involve working with any of these select agents or toxins; however, specimens may be presented to CDFA for identification that may contain these select agents or toxins.

Another federal law regulating biohazardous materials is the Bioterrorism Preparedness Response Act of 2002 which requires that entities that possess, use, or transfer of agents or toxins deemed a severe threat to animal or plan health must notify and register with the Secretary of the USDA. The USDA's Animal Plant Health Inspection Service has been designated as the agency for implementing the law.

The CDC and NIH have issued federal guidelines addressing biological safety. Compliance with these laws is required in any research receiving federal funding. These guidelines govern containment and handling in microbiological and biomedical research laboratories. In 2002, the NIH issued *Guidelines for Research Involving Recombinant DNA Molecules*, which classifies biohazardous agents into four safety levels, depending on the risk group of the agent used:

- Risk Group 1 poses minimal or no potential hazard to laboratory personnel or equipment.
- Risk Group 2 agents are considered to be of ordinary (not special) potential hazard and may produce varying degrees of disease thorough accidental inoculation, but may be effectively contained by ordinary laboratory techniques and facilities.
- Risk Group 3 agents pose serious risks; therefore, work with these agents must be conducted in contained facilities using special ventilation systems and controlled access separate from public areas.
- Risk Group 4 agents pose a high risk of life-threatening disease for which there may be no available vaccine or therapy; therefore, work with these agents must be conducted under the most stringent containment conditions.

CDFA has adopted these guidelines. Only work involving Risk Group 2 would be conducted at the Proposed Project site.

10.2.2 State Laws, Regulations, and Policies

California Health and Safety Code—Hazardous Waste and Hazardous Materials

Several sections of the California Health and Safety Code deal with hazardous waste and hazardous materials. Division 20, Chapter 6.5 addresses hazardous waste control and contains regulations on hazardous waste management plans, hazardous waste reduction, recycling and treatment, and hazardous waste transportation and hauling. Under Chapter 6.5, Article 6, persons generating hazardous wastes that are to be transported for offsite handling, treatment, storage, or disposal must complete a hazardous waste manifest before transport, indicating the facility to which the waste is being shipped for treatment, disposal, or other purposes.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

The Safe Drinking Water and Toxic Enforcement Act, or Proposition 65, requires the Governor to maintain and publish a list of chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. Once a chemical has been listed, businesses are responsible for providing a warning before knowingly or intentionally exposing their employees or the public to an amount of the chemical that poses a significant risk. The OEHHA is the lead agency responsible for implementing Proposition 65, with input from California Department of Pesticide Regulation and other agencies so that the best scientific information is used in listing chemicals. In its current state, the Proposition 65 list contains a wide variety of chemicals (OEHHA 2019).

Unified Program—Certified Unified Program Agencies

The Unified Program consolidates and coordinates several regulatory programs in California related to hazardous wastes and materials (California Environmental Protection Agency [Cal/EPA] 2012). Codified in 27 CCR Division 1 and Chapter 6.11 of the California Health and Safety Code, the Unified Program consolidates the following programs: Hazardous Materials Business Plans, California Accidental Release Program, Underground Storage Tank, Aboveground Petroleum Storage Act, Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting), and California Uniform Fire Code Hazardous Materials Management Plans.

The Unified Program also transfers responsibility for implementation of these hazardous waste and materials regulatory programs to local agencies, such as cities and counties (Cal/EPA 2012). After local agencies are certified by Cal/EPA as CUPAs, they must establish a program that consolidates, coordinates, and makes consistent the administrative requirements, permits, inspection activities, enforcement activities, and hazardous waste and hazardous materials fees associated with programs under the Unified Program. With oversight from Cal/EPA, CUPAs

conduct inspections for all program activities according to the standards contained in the relevant statute or regulation (Cal/EPA 2012).

Hazardous Materials Business Plans

Hazardous materials business plans are required for businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity (40 CFR Part 355 Appendix A) (California Office of Emergency Services [Cal OES] 2014). Business plans are required to include an inventory of the hazardous materials used/stored by the business, a site map, an emergency plan, and a training program for employees. In addition, business plan information is provided electronically to a statewide information management system, verified by the applicable CUPA, and transmitted to agencies responsible for the protection of public health and safety (i.e., local fire department, hazardous material response team, and local environmental regulatory groups).

California Occupational Safety and Health Administration Regulations

The Cal/OSHA regulations contain various provisions that require safe operation of equipment, safety instructions provided in a language that employees understand, and access to first aid. Cal/OSHA regulations also contain regulations relating to bloodborne pathogens (including from animals), which require exposure control plans and establish and maintain a sharps injury log. Cal/OSHA also has regulations regarding aerosol transmissible diseases by animals in California Code of Regulations Title 8 Section 5199 and Section 5199.1. These regulations require certain employers with employees exposed to aerosol-transmissible diseases (ATD) to have effective written safety plans, provide protective equipment as needed, and train employees on safety procedures. These regulations on bloodborne pathogens and aerosol-transmissible diseases would apply to the Proposed Project facility.

California Accidental Release Prevention

The purpose of the CalARP Program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. In accordance with this program, businesses that handle more than a threshold quantity of regulated substances are required to develop a risk management program (RMP). This RMP must provide a detailed analysis of potential risk factors and associated mitigation measures that can be implemented to reduce accident potential. CUPAs implement the CalARP Program through review of RMPs, facility inspections, and public access to information that is not confidential or trade secret.

Fire Prevention

Sections 51175–51181 of the California Government Code outline the responsibilities of CAL FIRE and local agencies with respect to fire prevention. CAL FIRE is legally responsible for

providing fire protection on all State Responsibility Area (SRA) lands. SRA lands do not include lands within city boundaries or under federal ownership.

CAL FIRE Defensible Space Requirements

California law requires that homeowners in SRAs maintain defensible space1 around their buildings to 100 feet. This requirement is designed to halt the progress of an approaching wildfire, as well as to keep firefighters safe while defending the structure (CAL FIRE 2019). The law also requires that new homes be constructed with fire-resistant materials, such as fire-resistant roofing, enclosed eaves, and dual-paned windows.

California Department of Toxic Substances Control

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. Regulations implementing the hazardous waste control laws list 791 hazardous chemicals as well as 20 to 30 more common materials that may be hazardous; establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal and transportation; and identify hazardous waste that commonly would be disposed of in landfills. Hazardous waste manifests must be retained by the generator for a minimum of three years. The generator must match copies of the hazardous waste manifests with copies of manifests receipts from the treatment, disposal or recycling facility.

Government Code Section 65962.5(a), Cortese List

The Hazardous Waste and Substance Sites Cortese List is a planning document used by the state, local agencies, and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires Cal/EPA to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List

Hazardous Waste Transportation

In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. The DTSC maintains a list of active registered hazardous waste transporters throughout the state. All hazardous waste transporters and permitted treatment, storage and disposal facilities must have ID numbers, which are used to identify the hazardous waste handler and to track the waste from its point of origin to its final disposal ("From Cradle to Grave"). Hazardous waste shall not be accepted for

transport without a Uniform Hazardous Waste Manifest that is properly completed and signed. This manifest must be in possession while transporting the hazardous waste.

California Department of Public Health

Medical Waste Management Program

To protect the public and the environment from potentially infectious disease-causing agents, the Environmental Management Branch of the California Department of Public Health (CDPH) manages the Medical Waste Management Program (MWMP), which regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). This includes waste such as sharps used in the care of animals, waste generated in necropsy, waste generated in research using animal pathogens, and animals that die of infectious diseases to be treated as medical waste if the carcass presents a danger of infection to humans. The MWMP requires generators to submit a medical waste management plan with their medical waste enforcement agency. There are different requirements depending on if a site is a small quantity medical waste generator (less than 200 pounds per month) or a large quantity generator (greater than 200 pounds per month). The Proposed Project facility would be a large quantity generator of medical waste.

California Department of Food and Agriculture

CDFA has many programs aimed at reducing hazards associated with its activities and providing guidance to the food and agriculture industry regarding hazards and hazardous materials. The Animal Health and Food Safety Division tracks diseases in animals and provides information in particular on biosecurity of these hazards across several animal species. A key component of this program is to operate facilities such as the Proposed Project facility to aid in preventing and reducing infectious agents to farms.

10.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

10.3 ENVIRONMENTAL SETTING

10.3.1 Existing Hazards and Hazardous Materials

In February 2019, Geocon prepared a Phase I and Limited Phase II Environmental Site Assessment evaluating the history and current conditions of the Proposed Project site and surrounding properties for the potential for hazardous chemicals or wastes to have adversely impacted the

underlying soil and groundwater (Geocon 2019). The Proposed Project site consists of relatively flat-lying agricultural row crop land with access from Dianne Drive. TID Upper Lateral No. 4 is adjacent to the property. The surrounding vicinity generally consists of agricultural land and rural residences west of Hwy 99 and residential and commercial development east of Hwy 99. Prior to CDFA's acquisition of the Proposed Project site in March 2020, the site included a diesel-powered generator and fertilizer pump. These facilities are no longer on site. There are several facilities near the Proposed Project site that are listed as small quantity waste generation/disposal, chemical storage, permitted USTs, and ASTs (Geocon 2019):

- N. Daniel Farm, 1130 Dianne Drive, adjacent property to the north of the Proposed Project site;
- Western Truck Parts and Equipment, 730 N. Walnut Road, 250 feet south-southeast of the Proposed Project site;
- Holt of California, 700 N. Walnut Road, 500 feet south-southeast of the Proposed Project site;
- Shore Chemical Co., 743 N. Tully Road, 500 feet southeast of the Proposed Project site;
- Charter Communications, 731 N. Walnut Road, 700 feet south-southeast of the Proposed Project site; and
- Joe Gomes & Sons Inc., 725 N. Tully Road, 800 feet southeast of the Proposed Project site.

A facility located at 725 North Tully Road, which is approximately 800 feet southeast of the Proposed Project site, is on the Leaking Underground Storage Tanks (LUST) database for a release of gasoline to soil and groundwater. However, the Stanislaus County Department of Environmental Services closed its regulatory case regarding this release in 2012 (Geocon 2019).

The limited Phase II Environmental Site Assessment sampled the Proposed Project site for arsenic and organochlorine pesticides following USEPA test methods. Arsenic was detected in the samples, but at concentrations that likely represent naturally occurring background levels (Geocon 2019). Organochlorine pesticides were not detected above the laboratory reporting limits except for one sample of dichlorodiphenyltrichloroethane (DDT) which was still several orders of magnitude below environmental screening levels.

10.3.2 CDFA Existing Facilities

CDFA currently operates three facilities whose activities will be combined and expanded upon in the Proposed Project. These facilities operate, and will continue to operate at the new location, under the purview of UC Davis Safety Services and UC Office of the President Policies and Procedures, which include a robust Injury and Illness Prevention Program, occupational

health oversight and monitoring, and industrial health and hygiene programs. CAHFS also has a full-time system-wide Safety Officer responsible for ensuring development of internal safety policies and adherence to safety protocols as well as a system-wide safety committee with local representation at each location. CAHFS conducts annual safety training for all laboratory personnel and conducts regular safety audits to ensure potential safety issues are identified and remediated immediately.

The CDFA facilities are regularly inspected by the counties for both chemical and medical waste regulatory compliance. UC Davis Safety Services (UC Davis Fire Prevention and Environmental Health & Safety) also annually inspects the facility for regulatory compliance with state fire codes as well as medical and chemical safety regulations. Additionally, the facilities perform multiple in-house inspections to make sure that safety regulations are being followed and any safety issues are quickly corrected. The existing CAHFS Turlock Laboratory facility has no Cal/OSHA complaints or reportable injuries currently on record.

There are several laboratory accreditations, certifications, and plans that these facilities currently operate under and these same or similar accreditations, certifications and plans are anticipated to be obtained or developed for the Proposed Project facility operation. Some of these key accreditations, certifications and plans are listed below:

- The American Associate of Veterinary Laboratory Diagnosticians Accreditation Committee Full Accreditation/ All Species
- Formaldehyde Exposure Control Plan
- Medical Waste Management Plan
- Aerosol-Transmissible Disease Plan
- Emergency Response Plan
- Injury and Illness Prevention Program

As described in Chapter 2, *Project Description,* Section 2.4.3, these facilities conduct various activities including avian and other animal necropsy, histopathology, bacteriology, biotechnology, parasitology, and serology testing. The existing CAHFS Turlock Laboratory facility as well as the Proposed Project facility operates an incinerator to dispose of animal carcasses and other animal tissue.

Various chemicals and other hazardous materials are used at the existing CAHFS Turlock Laboratory; these generally include laboratory chemicals, biogenic materials, industrial-grade solvents and cleaners, and other evaporative compounds. All hazardous chemicals and materials are stored, handled, transported, and disposed of in accordance with local, state, and

federal regulations. The following hazardous chemicals and materials are used at the existing facility:

10% Buffered Formalin Phosphate
4-Chloro-1-naphthol
Acetic Acid
Acetone
Agarose
Bacdown Detergent Disinfectant
Bleach
Bouin's solution
Carbol-fuchsin solution
Carbon dioxide, gas
Cargille Immersion Oil
Crystal violet
Cytoseal 60
Cytoseal 60
Eosin Y
Ethanol
Ethidium bromide
Fecasol
Formalin solution
Gelatin
Glycerol
Gram's crystal violet solution
Gram's decolorizer solution
Gram's iodine solution
Gram's safranin solution
Hematoxylin stain solution, Gill 2 Form
Hydrochloric acid
Hydrogen peroxide
Indole Reagent-Ehrlich's
Iodine
Iron (III) chloride
Isopropanol
Kovac's Aldehyde Reagent
Lactophenol Blue stain solution
Lithium carbonate
Malachite Green chloride
Methanol
Methylene blue
Mineral oil
Nitrate B Reagent
Phloxine B
Potassium borohydride
Potassium chloride
Potassium hydroxide solution
Propar
Proteinase K
Schiff's reagent
Sodium chloride
Sodium citrate
Sodium phosphate dibasic
Sodium phosphate monobasic
Sulfanilic acid
Tris base
Tris-Acetate-EDTA (TAE) buffer solution
Tween 20
Virkon disinfectant cleaner
Voges Proskauer B Reagent
Xylenes
Zinc

10.3.3 Airports

No airports or airstrips are located within 2 miles of the Proposed Project site. The nearest airports are the Turlock Municipal Airport and the Modesto City-County Airport, which are both more than 9 miles away from the Project site.

10.3.4 Wildfire Hazards

The Project site is located in a rural area with primarily cultivated agriculture crops that is transitioning towards urban development and the area does not contain wildland areas. The Proposed Project is not located in, nor is it near, SRA identified by CAL FIRE as very high fire hazard severity zones (CAL FIRE 2007).

10.3.5 Sensitive Receptors

Sensitive receptors are those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with serious pre-existing health problems affected by air quality (e.g., asthma). Examples of locations that contain sensitive receptors are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences include houses, apartments, and senior living complexes. Medical facilities can include hospitals, convalescent homes, and health clinics. Playgrounds include play areas associated with parks or community centers. There are a few residences located across the street along Dianne Drive. A list of non-residential sensitive receptors within 2 kilometers of the Proposed Project site are shown in **Table 10-1**.

Table 10-1. Sensitive Receptor Locations

Name	Address
Atch Pedretti Park	2918 West Tuolumne Road
Centennial Park	Pinto Way
Osborn Elementary School	201 North Soderquist Road
John B. Allard School	350 North Kilroy Road
Summerfaire Park	North Soderquist Road and Fulkerth Road
Soderquist Ballfield	North Soderquist Road and Flower Street
Donnelly Park	Donnelly Park Drive and West Hawkeye Avenue
Walter M Brown Elementary	1400 Georgetown Avenue
Kids Community Campus LLC	2490 North Walnut Road
Pruitt Family Daycare	2325 Gala Court #8421
Columbia Park	Farr St and Columbia Avenue
Turlock Nursery School	415 Grant Avenue
Central California Child Development Services – Turlock Child Development Center	400 North Kilroy Road
Stable Living (Adult Day Care)	2380 North Walnut Road

10.4 IMPACT ANALYSIS

10.4.1 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 significant present, or potential hazards to human health and safety or to the environment if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, 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 would be harmful to the environment if released into the workplace or the environment (California Health and Safety Code Section 25501).

Although often treated separately from hazardous materials, petroleum products (including crude oil and refined products, such as fuels and lubricants), and natural gas are considered in this analysis because they might pose a potential hazard to human health and safety if released into the environment.

Hazardous wastes include residues, discards, byproducts, contaminated products, or similar substances that exceed regulatory thresholds for properties of toxicity, ignitibility, corrosivity, or reactivity. Federal and state regulations identify by name the specific hazardous wastes that USEPA has designated as "listed wastes." Hazardous material also includes a discussion of biological materials including biohazards and the potential for ATDs identified by federal and state agencies as well as any emerging ATDs.

10.4.2 Criteria for Determining Significance

The Proposed Project would result in a significant effect related to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the 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 wastes within 0.25 mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled in accordance with California Government Code Section 65962.5 (i.e., "Cortese List"), and as a result, create a significant hazard to the public or the environment;

- Result in a safety hazard or excessive noise for people residing or working on the project area if the project is within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport;

- 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, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Of the above criteria, the following criteria are not relevant to the Proposed Project, as described below, and are therefore not considered further in the impact analysis:

- **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school.** No existing or proposed schools are located within 0.25 mile of the Proposed Project site. Therefore, there would be no impact.

- **Be located on a site that is included on a list of hazardous materials sites compiled in accordance with California Government Code Section 65962.5 (i.e., "Cortese List"), and as a result, create a significant hazard to the public or the environment.** A search of state records conducted for the Proposed Project indicates that no listed hazardous or waste sites are located on the project site (Geocon 2019). Therefore, the Proposed Project would not be located on a site included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5, and would not create a significant hazard to the public or environment associated with any such sites. Therefore, there would be no impact.

- **Result in a safety hazard or excessive noise for people residing or working on the project area if the project is within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport.** No airports or airstrips are located within 2 miles of the Proposed Project site. The nearest airports are the Turlock Municipal Airport and the Modesto City-County Airport, which are both more than 9 miles away from the Project site. Therefore, there would be no impact.

- **Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.** Since the Proposed Project is not within or near an SRA, or lands classified as very high fire hazards severity zones, the Proposed Project would not interfere with an adopted emergency response plan or emergency evacuation plan, nor would wildfire risks be exacerbated. No installation or maintenance of infrastructure would be required and people or structures would not be exposed to any downslope or downstream flooding or landslides. As a result, there would be no impacts related to wildfire.

10.4.3 Environmental Impacts

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials — Less than Significant

Construction

Construction activities for the Proposed Project would require onsite handling of hazardous materials, such as fuels, lubricating fluids, and solvents for use with construction equipment. Accidental spills or improper use, storage, transport, or disposal of these hazardous materials could result in a public hazard or the transport of hazardous materials (particularly during storm events) to the underlying soils and groundwater.

Although these hazardous materials could pose a hazard as described above, Project activities would be required to comply with extensive regulations so that substantial risks would not result. Examples of compliance with these regulations would include preparation of a hazardous materials business plan, as described above, which would include a training program for employees, an inventory of hazardous materials, and an emergency plan (Stanislaus County 2020). All storage, handling, and disposal of these materials would be done in accordance with regulations established by DTSC, USEPA, OSHA, California Office of Emergency Services, CUPA, and Cal/OSHA. In addition, a SWPPP would be prepared for the Proposed Project as part of its compliance with applicable NPDES permits and would include appropriate spill prevention and other construction BMPs. These BMPs would protect the environment (water quality) from hazardous materials, and may include, but not be limited to, developing and implementing a spill prevention and emergency response plan, minimizing use or storage of hazardous materials, and other measures.

As a result of compliance with the applicable regulations as described above and implementation of applicable BMPs, no significant risks would result to construction workers, the public, or the environment from the construction-related transport, use, storage, or disposal of hazardous materials. Therefore, this impact would be **less than significant**.

Operation

Operation of the Proposed Project would necessitate the use and storage of several hazardous items and materials. Items and materials that would be on site and could pose a risk to human health and safety and the environment. Hazardous materials would be stored on site and used or disposed of at regular intervals. Accidental spills or improper use, storage, transport, or disposal of these hazardous materials could result in a public hazard or the transport of hazardous materials to the underlying soils and groundwater. This includes the use of hazardous material, operation of boilers and cremators, handling of biohazardous material and transgenic animals. This includes the following:

- AST of diesel for emergency generator
- Hazardous waste storage building which will contain various chemicals including at least two 55-gallon drums for fresh and used ethanol
- Various hazardous chemicals similar to those listed for the existing facility
- Various biological agents and biohazardous material

The chemicals that would be used in the Proposed Project would be similar to those currently used at the existing CAHFS Turlock Laboratory facility. The level and the nature of the hazards posed by these chemicals and wastes vary widely and are unique to the individual materials, although they often can be grouped by chemical types. Substances can possess one or more common hazard characteristics such as corrosivity (acids and bases), flammability (solvents such as acetone), toxicity (cyanides, mercuric chloride) and reactivity. Some nonradioactive chemicals have the potential for causing cancer or acute and chronic illnesses, while some substances may present little hazard. Because most handling of hazardous materials at the facility takes place indoors, potential pathways for exposure to non-radioactive hazardous chemicals under routine conditions include direct contact or injection during research or through accidental spills, or inhalation. The risk to the public or the environment would be minimal under normal routine conditions.

Specific health risks associated with operation of the stationary sources including the cremator, boilers, heaters, and emergency generator as well as from fugitive emissions of laboratory chemicals were evaluated by conducting a health risk assessment and are detailed in Chapter 5, *Air Quality*. Given the numerous state and regulatory requirements and CDFAs existing policies and procedures surrounding the use of hazardous materials, this impact under routine use is less than significant.

Hazardous waste is generated through laboratory operations as well as facilities maintenance and operations. CDFA has prepared guidelines for proper disposal of hazardous wastes including medical waste that are based on regulations established by the USEPA, DTSC, and CDPH. CDFA staff are trained and responsible for disposing of hazardous waste. Prior to

disposal, they must be packaged and labeled properly, which includes placing them in appropriately closed containers, segregating incompatible materials, and identifying the contents.

The Proposed Project would include construction of a new natural-gas-powered package cremator capable of handling 1,250 pounds per hour for disposal of animal parts and tissue samples. Such wastes would routinely be incinerated as they are produced. The resulting residual ash would not be considered hazardous waste and would be removed as part of regular waste collection. Biohazardous wastes (contaminated laboratory clothing and materials) would be autoclaved or otherwise decontaminated before being removed for disposal as non-hazardous waste. All other hazardous wastes, flammable wastes (mostly solvents), corrosives (acids and bases), oils, poisons, heavy metals, and oxidizers would be shipped off site for recycling, treatment, or disposal. Given the numerous state and regulatory requirements and CDFAs existing policies and procedures surrounding the transport of hazardous waste under routine use would be less than significant.

The facility may work with transgenic materials including microorganisms, plants, and animals that have been genetically modified to assist in laboratory and research activities. The facility would work with animal tissue and other biohazardous materials and plans to dispose of animal carcasses by cremation onsite. Other biohazardous material would be sterilized on site then transported off site by a third party for proper disposal. The majority of biological research conducted at the Proposed Project involves the use of relatively low-level biohazardous materials and the Proposed Project is designed to conduct activities in compliance with Biosafety Safety Level 2 (BSL-2). The Proposed Project would follow the current edition of the publication Biosafety in Microbiological and Biomedical Laboratories. This publication defines the biosafety levels that apply to biohazardous materials operations. Although these biosafety levels were originally intended to protect human health, these guidelines are widely used to prevent release of animal pathogens from laboratories. BSL-2 is appropriate for use with biohazardous materials that are considered to be of ordinary potential hazard and may produce varying degrees of disease through accidental autoinoculation, ingestion, and skin or mucous membrane exposure.

Most biohazardous materials pose no significant hazard to the public due to their limited viability in the environment; however, others could pose a potential hazard if accidentally released or improperly handled.

The Proposed Project office areas would be isolated from laboratory and animal/sample holding areas and decontamination facilities. Laboratory areas would be organized based on intended functions and assumed hazard level, with individual spaces located within a layout that would provide multiple layers of safety measures to prevent cross-contamination or accidental exposure and to limit access to authorized personnel only. Internal security features such as individual door locks and keypad access would be used to limit access to laboratory areas.

Laboratory areas would be separated from areas open to the public and from other laboratory personnel who do not work within a particular zone by controlled access zones and decontamination areas. All procedures in which infectious aerosols or spills could be created would be conducted in biosafety cabinets or other forms of primary containment. All waste from the laboratories would be autoclaved or otherwise decontaminated prior to leaving the facility.

Each lab would have single-pass (non-recirculated) air, with negative pressurization relative to the surrounding spaces (i.e., air would flow into the lab space from outside and not out of the lab into other building spaces). Consistent with federal guidelines, all windows would be sealed, breakage resistant, and inoperable in order to preserve the air flow balance. The layout of the laboratories would allow potential hazards to be divided into zones based on degree of hazard, with directional air flow moving from less hazardous to more hazardous zones within a space. For example, desk areas for computer use where supply air would enter the space would be considered a less hazardous zone, while a chemical fume hood where the air would be exhausted from the space would be considered more hazardous. Some laboratory areas would also include HEPA-filtered room exhaust and shower-out capabilities in addition to baseline BSL-2 guidelines.

Conclusion

Given the regulations and procedures applicable to construction and operation of the Proposed Project facility, the facility design required to operate a BSL-2 facility, and the routine training and audits of safety practices, the impact from routine use and transport of biohazardous materials is **less than significant**.

Impact HAZ-2: 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 — Significant and Unavoidable

As discussed in Impact HAZ-1, adherence to hazardous materials and waste transport regulations and CDFA policies and procedures would ensure that the Proposed Project does not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of most hazardous materials. However, the potential exists for the facility to encounter known and unknown biological hazards, and in particular ATDs, that may be classified as select agents or toxins under Title 42 CFR Part 73. Some of these select agents or toxins are recommended to be handled by facilities with higher containment levels than BSL-2. These select agents or toxins may enter the facility inadvertently due to the nature of its activity in accepting potentially diseased animals and tissue for evaluation and examination, during which they may be discovered to have a select agent or toxin. This would create a significant hazard to the public and the environment and would be a significant impact.

Implementation of **Mitigation Measure HAZ-1 (Compliance with Biosafety Regulations and Preparation of Biosafety Plans)** would ensure that CDFA complies with Title 42 CFR Part 73 regulations in handling, securing, and reporting any encounters of select agents or toxins. California regulations require the facility to have a Biosafety Plan for ATDs.

> **Mitigation Measure HAZ-1: Compliance with Biosafety Regulations and Preparation of Biosafety Plans**
>
> CDFA will prepare a biosafety plan and develop standard operating procedures for dealing with potential encounters with select agents or toxins including ATDs. The biosafety plan will outline emergency procedures to be implemented in the event of a foreign animal disease outbreak, spill in the laboratory, emergency evacuation, loss of negative pressure in biosafety cabinets, power failure, earthquake, bomb threat, severe weather, and fire. The biosafety plan will require medical surveillance and monitoring of employees and reporting of any exposures. The biosafety plan will require the laboratory to undergo annual inspections and a biosafety audit. Employees will evaluate the standard operating procedures for biosafety during annual refresher training.
>
> Specifically, CDFA's biosafety plan will outline procedures for minimizing the risk of ATD exposure or release from the facility and the procedures required if a select agent or toxin is encountered that is recommended to be handled by a BSL-3 or -4 facility. This will include details regarding proper containment and securing of the select agent or toxin; safe handling practices; decontamination and disinfection procedures; and a list of potential ATDs that may be encountered by this facility. This Plan shall list proper contacts to inform appropriate federal, state, and local personnel who may be required to coordinate in the event of an accidental release of a select agent or toxin.

Implementation of **Mitigation Measure HAZ-1 (Compliance with Biosafety Regulations and Biosafety Plans)** would ensure that the Proposed Project continues to evaluate and minimize the potential for accidental release of any select agents or toxins including ATDs. While there are numerous regulations, plans and policies to prevent the accidental release of select agents or toxins and ATDs, the potential release to the public or environment is still possible and therefore, the impact is **significant and unavoidable**.

Impact HAZ-3: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan — Less than Significant with Mitigation

Construction

Construction-related employee vehicle trips and truck trips for the Proposed Project would potentially increase traffic on Dianne Drive and West Canal Drive and cause slowdowns as construction vehicles enter and exit the Project site over the duration of the 30-month construction period. Offsite utility improvements may require temporary land closures during

construction activities. An increase in traffic or lane closures could impair emergency responders. These impacts may be considered potentially significant.

Construction-related traffic would be temporary and only a limited number of employee vehicles and trucks would travel to and from the Project site on a daily basis. Utility implementation within roadways would be conducted as efficiently as possible to minimize potential traffic and closures. Access to the Project site and surrounding properties for fire and emergency response vehicles would be maintained at all times. **Mitigation Measure HAZ-2 (Prepare and Implement a Construction Traffic Management Plan)** would require the preparation of a construction traffic management plan. With implementation of mitigation, the impact from construction-related activities associated with the Proposed Project and its utilities would be reduced to a level that is **less than significant with mitigation**.

> **Mitigation Measure HAZ-2: Prepare and Implement a Construction Traffic Management Plan.**
>
> The Contractor shall prepare and implement a construction traffic management plan to reduce potential interference with an emergency response plan, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders.

Operation

Project operations would result in an increase in trips to the Project site; however, this is not anticipated to interfere with any emergency responders. The Proposed Project is not anticipated to interfere with any emergency response plan or emergency evacuation plan. The facility maintains its own emergency response plans and coordinates when necessary, with other agencies in particular any event involving potential release of hazardous material including biological hazards and ATDs. Thus, this impact would be **less than significant**.

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Chapter 11
Hydrology and Water Quality

11.1 OVERVIEW

This chapter discusses the potential for the Proposed Project to affect hydrology and water quality and also describes consistency with applicable plans and policies that protect these resources. Specifically, this chapter describes the existing environmental setting in the Proposed Project area, discusses federal and state regulations relevant to surface and groundwater resources that might be affected by the Proposed Project, identifies hydrology and water quality resources potentially affected by the Proposed Project, and proposes mitigation measures to avoid or reduce potentially significant impacts on these resources.

11.2 REGULATORY SETTING

11.2.1 Federal Laws, Regulations, and Policies

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA Section 402 is discussed in this section, as it pertains to stormwater management and hydrology. CWA Section 404, which regulates the discharge of dredged and fill materials into waters of the United States (waters of the U.S.), is also discussed briefly below.

Section 303(d)

Under CWA Section 303(d), states are required to identify and make a list of water bodies that are polluted. In California, this responsibility falls to the SWRCB and its nine RWQCBs. In addition to identifying impaired water bodies, states must identify the pollutants causing the impairments; establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality, including development of total maximum daily loads (TMDLs).

Section 402

CWA Section 402 regulates facilities that discharge pollutants into waters of the U.S. through the NPDES. Under the NPDES, all facilities discharging pollutants from any point source into waters of the U.S. must obtain a NPDES permit. While originally focused on municipal and

industrial discharges from pipes or other point sources, Section 402 of the CWA was amended in 1987 to include stormwater discharges which may be non-point source in nature. Phase I of the NPDES Storm Water Program imposed permitting requirements on several types of stormwater discharges, including certain industrial activities, medium (i.e., serving 100,000 to 250,000 people) and large (serving greater than 250,000 people) municipal separate sanitary sewer systems (MS4s), and construction sites disturbing 5 or more acres. Phase II of the Storm Water Program regulations, issued in 1999, expanded permitting requirements to include small (serving less than 100,000 people) MS4s, construction sites of 1 to 5 acres, and other certain previously exempt industrial facilities.

Construction General Permit

Most construction projects that disturb 1 acre or more of land are required to obtain coverage under the SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities ("Construction General Permit") (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ), in accordance with CWA Section 402. The general permit requires the applicant to file a public notice of intent to discharge stormwater and prepare and implement a SWPPP. The SWPPP must include a site map and a description of the proposed construction activities; demonstrate compliance with relevant local ordinances and regulations, and present a list of BMPs that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters. Enrollees in the Construction General Permit are further required to conduct monitoring and reporting to ensure that BMPs are correctly implemented and are effective in controlling the discharge of construction-related pollutants.

Section 404

As noted above, CWA Section 404 regulates the discharge of dredged and fill materials into waters of the U.S., or jurisdictional waters, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Before any actions that may discharge dredged or fill material into surface waters or wetlands are carried out, a delineation of jurisdictional waters of the U.S. must be completed, following USACE protocols (USACE 1987), in order to determine whether the project area encompasses wetlands or other waters of the U.S. that qualify for CWA protection. Section 404 permits are discussed in detail in Chapter 6, *Biological Resources*.

11.2.2 State Laws, Regulations, and Policies

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (also known as the Porter-Cologne Act), passed in 1969, established the SWRCB and divided the state into nine hydrogeologic regions, each overseen by an RWQCB. In conjunction with the federal CWA, the Porter-Cologne Act is the principal law governing water quality regulation in California. The Porter-Cologne Act requires that each RWQCB develop a water quality control plan (also known as a Basin Plan) to identify

the existing and potential beneficial uses of waters of the State and establish water quality objectives to protect these uses. Waters of the State are defined differently than waters of the U.S., described above under CWA Section 404, and include any surface water or groundwater, including saline waters, which are within the boundaries of the state.

The Porter-Cologne Act also implements many provisions of the CWA, such as the NPDES permitting program, described above under "Federal Laws, Regulations, and Policies." Any entity discharging or proposing to discharge materials that could affect water quality must file a report of waste discharge with the applicable RWQCB.

Municipal Stormwater Permitting Program

The SWRCB regulates stormwater discharges from MS4 through its Municipal Stormwater Permitting Program. Permits are issued under two phases depending on the size of the urbanized area/municipality. Phase I MS4 permits are issued for medium (population between 100,000 and 250,000) and large (population of 250,000 or more) municipalities, and are often issued to a group of co-permittees within a metropolitan area. Phase I permits have been issued since 1990.

In 2003, SWRCB began issuing Phase II MS4 permits for smaller municipalities (population less than 100,000). The City of Turlock (City) is covered under the most recent Phase II MS4 permit, the General Permit for the Discharge of Stormwater from Small MS4s (Order No. 2013-0001-DWQ), which covers Phase II permittees statewide. Some requirements in the permit that might be applicable to the City are discharge prohibitions, effluent limitations, receiving water limitations, and provisions applicable to all traditional small MS4 permittees (SWRCB 2013).

Basin Plan for the Central Valley Region

The Basin Plan for the Central Valley Region incorporates by reference the SWRCB water quality control plans and policies to protect beneficial uses of state water resources. The Basin Plan outlines the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. Regional plan objectives and discharge requirements are included in waste discharge requirements (WDRs) or NPDES permits administered by the California SWRCB through its nine RWQCBs.

In recognizing that some localized potable water sources have become polluted to the degree they are unsafe to drink, the Central Valley RWQCB adopted Resolution R5-2008-0181 in 2008 to develop a Groundwater Quality Protection Strategy framework referred to as the Roadmap for the Central Valley. The roadmap focuses on several future actions to be implemented in the next five to 20.

- Salt and Nutrient Management Plan
- Groundwater Quality Monitoring Program and Groundwater Database
- Groundwater Protection Programs
- Well Design and Destruction Program
- Alternative Dairy Waste Disposal
- New Individual and General Orders for Poultry, Cattle Feedlots and other Confined Animal Feeding Operations
- Long-term Irrigated Lands Regulatory Program
- Update Land Development Waste Disposal Guidelines
- Coordinate with California Department of Food and Agriculture on Fertilizer Program Enhancements

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), passed in 2014, became law in 2015 and created a legal and policy framework to locally manage groundwater sustainably. The SGMA allows local agencies to customize groundwater sustainability plans to their regional economic and environmental conditions and needs, and establish new governance structures, known as Groundwater Sustainability Agencies (GSAs). The SGMA is intended to prevent undesirable results, which are defined as the following:

- Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed).
- Significant and unreasonable reduction of groundwater storage.
- Significant and unreasonable seawater intrusion.
- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.
- Significant and unreasonable land subsidence that substantially interferes with surface land uses.
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

California Statewide Groundwater Elevation Monitoring Program

In 2009, the California State Legislature amended the California Water Code with SBx7-6, which mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California. Pursuant to this amendment, DWR established the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The CASGEM Program establishes the framework for regular, systematic, and locally managed monitoring in all of California's groundwater basins. To facilitate implementation of the CASGEM Program and focus limited resources, as required by the California Water Code, DWR ranked all of California's basins by priority: high, medium, low, and very low based on the following factors:

- Population overlying the basin;
- Rate of current and projected growth of the population overlying the basin;
- Number of public supply wells that draw from the basin;
- Total number of wells that draw from the basin;
- Irrigated acreage overlying the basin;
- Degree to which persons overlying the basin rely on groundwater as their primary source of water;
- Any documented impacts on the groundwater within the basin, including overdraft, subsidence, saline intrusion, and other water quality degradation; and
- Any other information determined to be relevant by DWR.

11.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

11.3 ENVIRONMENTAL SETTING

11.3.1 Regional Watershed Setting

The City of Turlock and the Proposed Project site are situated within the San Joaquin River Hydrologic Region, Tuolumne River Sub-basin. The San Joaquin Hydrologic Region covers an area of approximately 15,200 square miles and includes counties of Calaveras, Tuolumne,

Mariposa, Madera, San Joaquin, and Stanislaus (DWR 2003). The Turlock Subbasin lies between the Tuolumne and Merced Rivers and is bounded on the west by the San Joaquin River and on the east by crystalline basement rock of the Sierra Nevada foothills (DWR 2006). The site is located at an elevation of approximately 90 feet above mean sea level.

The climate of the San Joaquin Valley region is semi-arid to arid and characterized by mild, wet winters and warm, dry summers (DWR 2015). Most of the region's precipitation falls between October and April (DWR 2015). In the Turlock area, the lowest average monthly temperature is approximately 38 °F in the winter (Western Regional Climate Center [WRCC] 2017). The highest average monthly temperature reaches approximately 95 °F in the summer (WRCC 2017). This area receives an average of 11.9 inches of precipitation annually (WRCC 2017).

11.3.2 Surface Water

No surface water bodies are located on the Proposed Project site. The nearest artificial surface water to the Proposed Project site is TID Upper Lateral No. 4 directly south of the site (Figure 2-2). The concrete-lined canal is used to convey and distribute irrigation water to farms throughout TID's service area. Beyond the canal to the south is a retention basin that is used to capture and hold runoff during stormwater events and is also proposed for open/space recreational use (City of Turlock 2017).

The nearest major rivers to Turlock are the San Joaquin River and the Tuolumne River, located approximately 10 miles west and 6 miles north, respectively. The Tuolumne River is the nearest natural surface water body to the Project site, which is 8 miles south of the river. The Tuolumne River ultimately is a tributary to the San Joaquin River. The segment of the Tuolumne River from New Don Pedro Dam downstream to its confluence with the San Joaquin River, including the Proposed Project site, is designated for the following existing beneficial uses: irrigation, stock watering, contact recreation, canoeing and rafting, other non-contact recreation, warm- and cold-water freshwater habitat, cold-water migration, warm- and cold-water spawning, and wildlife habitat (Central Valley RWQCB 2018). Municipal and domestic supply is listed as a potential beneficial use (Central Valley RWQCB 2018).

Under Section 303(d) of the CWA, states are required to identify "impaired water bodies" (i.e., those water bodies not meeting established water quality standards); identify the pollutants causing the impairment; establish priority rankings for waters on the list; and develop a schedule for adoption of control plans to improve water quality. The Lower Tuolumne River reach from Don Pedro Reservoir to the San Joaquin River (approximately 60 miles) is listed on the 2014-2016 303(d) list for the following impairments: Group A pesticides, mercury, toxicity, and water temperature (SWRCB 2018).

11.3.3 Stormwater

Stormwater infrastructure and maintenance in the Project vicinity is provided by the City. The City utilizes detention/retention basins to capture runoff throughout the city, and, for areas

without these basins, pumps runoff to TID's local drainage channels for disposal after a storm event. The City maintains a discharge permit with the TID that limits the amount of stormwater that can be discharged into the canals (City of Turlock 2013). The City of Turlock's stormwater discharges are covered under the SWRCB's General Permit for the Discharge of Storm Water from MS4s. The City's stormwater system planning and infrastructure improvements are based on the City's Storm Water Master Plan (2013).

At the Proposed Project site, the parcel is relatively flat and comprised of pervious surfaces (i.e., former agricultural lands). Stormwater generated on the Project site either infiltrates into the soil or sheet-flows toward the south. A stormwater retention system would be constructed on the Proposed Project site and would be sized to retain all stormwater on site. A 60-inch storm drain line located in Dianne Drive adjacent to the Proposed Project site flows south and discharges to the detention basin south of TID Upper Lateral No. 4. The Office of the City Engineer has stated that this line "has been known to surcharge during heavy rain events" and currently has no additional capacity (Bray pers. comm. 2021). Therefore, the Proposed Project would retain all stormwater on site The City has identified improvements in the City's Storm Water Master Plan to increase the capacity of this line in the future, which may allow the Proposed Project to connect in the future.

11.3.4 Groundwater Basin and Sustainability Planning

The Proposed Project site is located within the San Joaquin Valley Groundwater Basin, Turlock Subbasin (subbasin 5-22.03). This subbasin lies between the Tuolumne and Merced Rivers and is bounded on the west by the San Joaquin River and on the east by crystalline basement rock of the Sierra Nevada foothills. The primary hydrogeologic units in the Turlock Subbasin are consolidated and unconsolidated sedimentary deposits of varying ages/composition, making up three groundwater bodies: the unconfined water body; the semi-confined and confined water body in the consolidated rocks; and the confined water body beneath the E-clay[1] in the western portion of the subbasin (DWR 2006). The Turlock Subbasin has an area of approximately 544 square miles. The Turlock Subbasin has been identified as a "high priority" basin under DWR's CASGEM Program (DWR 2020a).

SGMA became law in 2015 and created a legal and policy framework to manage groundwater sustainably. The Proposed Project site is within the GSA jurisdiction of the West Turlock Subbasin Groundwater Sustainability Agency, which is composed of twelve public agencies. Together with the East Turlock Subbasin GSA, the West Turlock Subbasin GSA is planning to adopt a single groundwater sustainability plan covering the entire Turlock Subbasin (Turlock

[1] "E-clay" is a term used to describe a clay layer, also known as the Corcoran clay, underlying the western half of the Turlock Subbasin. This clay layer is present at depths ranging between 50 and 200 feet below ground surface and establishes an effective barrier to water movement between the confined and unconfined water bodies (DWR 2006).

Groundwater 2020). The Turlock Subbasin must be covered by a DWR-approved Groundwater Sustainability Plan by January 31, 2022 (Turlock Groundwater 2020).

The primary source of groundwater recharge in the Turlock subbasin is agricultural and urban irrigation (TID 2008). Additional groundwater recharge sources include precipitation, percolation from the Tuolumne and Merced rivers, leakage from Turlock Lake, underflow from the Sierra Nevada foothills, and upward seepage from deep geologic fractures (TID 2008).

11.3.5 Groundwater Levels, Flows, and Quality

Groundwater flow direction may be affected by surface topography, hydrology, hydrogeology, soil conditions, and nearby wells. In general, groundwater flow in the Turlock subbasin is towards the southwest (DWR 2006). However, agricultural pumping in the eastern areas of the subbasin has at times resulted in a cone of depression that may alter the flow patterns to an easterly direction (TID 2008). Historic groundwater levels in the basin and in wells near the Project site have varied between 8 and 40 feet bgs over the last 20 years (DWR 2006, 2020b).

Groundwater in the Turlock subbasin and the City of Turlock area has primarily contaminants related to fuels and associated volatile organic compounds (VOCs) (City of Turlock 2016). Other contaminants found in the City's wells include nitrates, tetrachloroethylene (PCE), chromium, lead, and other heavy metals (City of Turlock 2016). For nitrates in particular, wells may have caused inter-aquifer mixing leading to higher nitrate levels in the deeper aquifers (City of Turlock 2016).

The Phase I and Limited Phase II Environmental Site Assessment for the Proposed Project site (Geocon 2019) did not identify any known or likely soils or groundwater contamination onsite within the Project site boundaries. Outside of the site boundaries but within the 27-acre parcel, the Phase I identified that soils under a generator formerly used for a fertilizer pump should be removed. These soils have subsequently been removed.

11.3.6 Floodplains, Tsunamis, and Dam Inundation

The Project site is located within a FEMA-designated area of minimal flood hazard (Zone X) (FEMA 2020). Additionally, the Project site is outside of any tsunami inundation areas (California Office of Emergency Services [CAL OES] 2020). The City of Turlock and the Project site are outside of any dam inundation areas (City of Turlock 2012).

11.4 IMPACT ANALYSIS

11.4.1 Methodology

Impacts related to hydrology and water quality were evaluated qualitatively by considering aspects of the Proposed Project, reasonably foreseeable distribution components, and

alternatives as they relate to applicable CEQA Guidelines Appendix G significance criteria and the existing regulatory and environmental settings.

11.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project, reasonably foreseeable distribution components, and the alternatives would result in a significant impact on hydrology and water quality if they would:

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

The following criteria were identified in the Initial Study for the Proposed Project as having no impact and are therefore not considered further in the impact analysis:

- Substantially alter the existing drainage pattern through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: result in substantial erosion or siltation; increase the rate or amount of surface runoff resulting in flooding; create or contribute runoff water which would

exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows.

- Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones**.**

11.4.3 Environmental Impacts

Impact HYDRO-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality – Less than Significant

Project Construction

Construction of the Proposed Project would involve ground disturbance that could result in sediments being transported into local storm drainage systems, thereby degrading the quality of receiving waters. Construction would also include the potential storage, use, transport, and/or disposal of hazardous materials (e.g., fuels, oils, solvents) used for construction equipment. Accidental spills of these materials or improper material disposal could pose a risk to the groundwater underlying the spill or disposal area if the materials seep into the soil or groundwater. In addition, ground-disturbing activities (such as deeper excavations for the cremator) during Project construction could potentially expose groundwater, thereby providing a direct pathway by which hazardous materials could enter groundwater and potentially impair its quality. Improper disposal of dewatering effluent could also pose a potential threat to surface water or groundwater quality if the dewatered groundwater was polluted and transported to surface waters or groundwater. Hazardous materials spills on the Project site could affect surface water if they enter the existing stormwater system near the Project site and ultimately were transported to the stormwater system's receiving waterbodies.

As discussed further in Chapter 10, *Hazards and Hazardous Materials,* storage or use of hazardous materials for construction activities would be limited and would be performed in compliance with all applicable federal, state, and local hazardous materials and hazardous waste regulations. No chemical processing or storage or stockpiling of substantial quantities of hazardous materials would take place at the Project site other than what would be necessary for standard construction activities. Furthermore, CDFA and/or its contractor(s) would dispose of hazardous materials at an appropriate hazardous materials disposal facility or landfill in accordance with all applicable federal, state, and local hazardous materials and hazardous waste regulations.

The Proposed Project also would be required to comply with applicable NPDES permits such as the NPDES General Permit for Construction Activities. In compliance with this permit, CDFA and/or its contractor(s) would prepare a SWPPP and prevent polluted dewatered groundwater from being discharged to surface waters or groundwater. The SWPPP would identify the

sources of pollutants that may affect the quality of stormwater and include BMPs (e.g., sediment control, erosion control, and good housekeeping) to control the pollutants in stormwater runoff. Compliance with these measures would prevent substantial impacts to surface or groundwater quality from occurring. Therefore, this impact would be less than significant.

Project Operation

Domestic water used for the Proposed Project, including water from the cooling tower, would be discharged to the City's sewer system, which would treat the effluent before discharge to the San Joaquin River. The City has indicated that the sewer system has sufficient capacity to accept discharges from the Proposed Project (Bray pers. comm. 2021). As a result, such effluent would not be expected to violate water quality standards or otherwise degrade water quality.

As detailed in Chapter 2, *Project Description*, and Chapter 10, *Hazards and Hazardous Materials*, operation of the Proposed Project would include the use and storage of hazardous materials, including fuel and oils, and would generate hazardous wastes from laboratory activities and truck rinse activities. These hazardous materials and wastes could result in an impact on water quality if transported to downstream surface waters (through the stormwater infrastructure) or into soils or groundwater. All hazardous materials would either be contained within the buildings (e.g., solvents used for laboratory cleaning) or have appropriate containment measures. Specifically, hazardous materials stored outdoors would be kept in containers that have secondary or tertiary containment.

Conclusion

Construction and operation of the Proposed Project would comply with regulations and requirements related to stormwater disposal and water quality. This impact would be **less than significant**.

Impact HYDRO-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin – Less than Significant

Project Construction

The Proposed Project would develop approximately 7.5 acres of the 27-acre site. Approximately 4.5 acres of this development would be impervious surfaces; the remainder of the site would be unpaved, such as for landscaping and stormwater management. These quantities are subject to change pending final design. Addition of impervious surfaces can reduce groundwater recharge by preventing water falling on the site as precipitation from infiltrating into the soil and groundwater below.

Given that depth to groundwater at the site is likely in the range of 8-20 feet bgs, most Proposed Project construction activities are unlikely to encounter substantial quantities of groundwater or require substantial dewatering, so groundwater supplies are unlikely to decrease in this way. Dewatering may be required for the deeper excavation activities associated with construction of the cremator but would not be anticipated to substantially reduce the groundwater supplies. Construction BMPs, as required by the Construction General Permit and SWPPP, would sufficiently reduce infiltration of pollutants to groundwater during construction.

If groundwater dewatering is required during excavation activities, CDFA and/or its contractor(s) would obtain coverage under the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimis) Threat to Water Quality (Order No. R8-2009-0003, NPDES No. CAG998001) (De Minimis Permit) from the Central Valley RWQCB. This permit requires testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to release to the storm drain system. As a result, groundwater dewatering would not introduce pollutants to receiving waters at levels that would violate water quality standards or waste discharge requirements, degrade water quality, increase pollutant discharge, or alter the quality of the receiving water.

Construction-related water demands for dust control over the anticipated 22-month construction period would be met using water trucks. While the source of water provided by the water trucks could derive from groundwater, the amount of water used during construction would not be sufficient to substantially affect regional groundwater supplies. Construction impacts to groundwater supplies or interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin water quality from groundwater dewatering would be less than significant.

Project Operation

As described above, recharge in the Turlock subbasin occurs primarily through agricultural and urban irrigation. Although the Proposed Project may result in the creation of approximately 5 acres of impervious surfaces and a corresponding reduction in recharge in this specific area from previous agricultural irrigation or precipitation sources, it would not substantially affect overall rates of recharge in the subbasin since it is not in a principal recharge area. Additionally, water falling on landscaped areas of the Proposed Project site would still have the opportunity to infiltrate into soil and groundwater. Furthermore, because the Proposed Project would not involve the installation of a well or pumping from an existing well on the site, the project would not directly remove any groundwater, and would therefore not conflict with sustainable groundwater management of the Turlock subbasin.

During operation, the Proposed Project would obtain water from the City of Turlock. Groundwater is currently used to meet the City of Turlock's water needs. The water sales agreement between the City and the Stanislaus Regional Water Authority would allow delivery of TID surface water beginning in 2023, which would help to mitigate future groundwater

quality degradation (West Yost Associates 2016). The City has indicated that its water supply system has sufficient capacity to serve the Proposed Project (Bray pers. comm. 2021), and the City's 2020 Urban Water Management Plan confirms that sufficient water supplies would be available to serve the Proposed Project and reasonably foreseeable future development. The Urban Water Management Plan found that the City would be able to withstand the effects of a single dry year and a 5-year drought at any period between 2025 and 2045. The City's drought risk was specifically assessed between 2021 and 2025, assuming that the next 5 years are dry years. In each case, water supplies comfortably exceed water demands. This remains true whether the drought occurs in 2021, 2045, or any year between (West Yost Associates 2020). normal, dry, and multiple dry years. The total annual operational water demand of 675,597 gallons is not anticipated to exceed the capacities or entitlements of existing water suppliers in the area. The estimated increase in water demand associated with the Proposed Project would represent 0.00007 percent of the City's projected water supply (approximately 8,462 million gallons) for 2025. Of this, only 5.8 percent (or approximately 39,547 gallons) would be new demand; the remaining 94.2 percent would be relocated from the existing CAHFS Turlock Laboratory facility. In addition, the Proposed Project would use water-efficient LEED practices and technologies and would be consistent with applicable land use designations and general plan policies. Therefore, the impact of operation on groundwater supply and groundwater recharge would be **less than significant**.

Conclusion

Water to serve construction and operation of the Proposed Project is available from the City without substantially decreasing groundwater supply, and the Proposed Project would not substantially interfere with groundwater recharge. Therefore, Proposed Project water demands would have a **less-than-significant impact** on groundwater water supplies, nor would these demands exceed the City's anticipated water demands from planned development.

Impact HYDRO-3: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan – Less than Significant

The Proposed Project involves the construction and operation of a replacement laboratory facility and associated improvements. As stated above, the Proposed Project would connect to and discharge domestic and laboratory wastewater to the City's wastewater collection and treatment system, and, ultimately to the San Joaquin River through the wastewater treatment plant's treated effluent discharges. The City receives industrial waste streams at its wastewater treatment plant, and the Proposed Project's anticipated laboratory wastewater stream 2,500 gallons per day would not cause an exceedance or compliance issue with the City's NPDES requirements for its wastewater treatment plant, and subsequently affect the RWQCB's water quality control plan for the San Joaquin River.

The Proposed Project would rely on the City's water supplies, which are entirely derived from groundwater. In its General Plan, the City identified that, without implementation of a planned

surface water supply project, the City would not have sufficient water supplies to meet all of the demands associated with its planned population growth (City of Turlock 2012). The Stanislaus Regional Water Authority's Surface Water Supply Project, which will replace a substantial portion of the City's groundwater use with treated surface water, is currently under construction. The Proposed Project would obtain LEED silver certification and would feature water-efficient fittings and fixtures to conserve water. In this regard, the new facility would likely be more water-efficient than the existing Turlock Laboratory facility. Therefore, Proposed Project water demands would not adversely affect substantially the implementation of a water quality control plan or sustainable groundwater management plan. The impact would be **less than significant**.

Chapter 12
Mineral Resources

12.1 OVERVIEW

This chapter describes the setting and potential impacts of the Proposed Project related to mineral resources. For the purposes of this analysis, mineral resources include rock aggregate, oil and gas deposits, iron ore, and other materials used in industry or construction.

12.2 REGULATORY SETTING

12.2.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies apply to mineral resources and the Proposed Project.

12.2.2 State Laws, Regulations, and Policies

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) requires that the State Mining and Geology Board (SMGB) identify, map, and classify aggregate resources throughout California that contain regionally significant mineral resources. The CDOC and CGS designate land areas following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. The objective of the designation process is to ensure, through appropriate lead agency policies and procedures, that mineral materials would be available when needed and do not become inaccessible as a result of inadequate information during the land use decision-making process. Mineral land classification reports are produced by the State Geologist as specified by SMARA.

Local jurisdictions are required to enact planning procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans. The four Mineral Resource Zone (MRZ) classifications used in the SMARA classification-designation process are defined below (CDOC n.d.):

> **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
>
> **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. This

zone shall be applied to known mineral deposits or where well-developed lines of reasoning, based upon economic-geologic principles and adequate data, demonstrate that the likelihood for occurrence of significant mineral deposits is high.

MRZ-3: Areas containing known or inferred aggregate resources of undetermined significance.

MRZ-4: Areas where available information is inadequate for assignment to any other zone.

12.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

12.3 ENVIRONMENTAL SETTING

In the context of CEQA, mineral resources generally refer to aggregate materials throughout California that contain regionally significant minerals as determined by their MRZ classification (discussed above). Sand and gravel (known collectively as aggregate) are the primary extractive mineral resources in Stanislaus County (County of Stanislaus 2016a). Minerals found throughout Stanislaus County include bementite, braunite, chromite, cinnabar, garnet, gypsum, hausmannite, hydromagnesite, inesite, magnesite, psilomelane, pyrobrsite, and rhodochrosite, as well as small deposits of gold, clay, and lead (County of Stanislaus 2016b).

The Proposed Project area is designated by the CGS as MRZ-3a. MRZ-3a areas contain known mineral occurrences of undetermined mineral resource significance[1] (CDOC 1993). Furthermore, the Proposed Project site is located in a zone that consists of Pliocene and younger alluvium (MRZ-3a$^{sg(C14)}$) containing sedimentary rocks classified as predominantly fine- and coarse-grained alluvium (CDOC 1993). The MRZ-3a$^{sg(C14)}$ zone includes the following sedimentary formations: Laguna Formation, the North Merced Gravel, Turlock Lake Formation, Riverbank Formation, Modesto Formation, and post-Modesto alluvium. These sediment formations have drained from the Sierra Nevada during the past 4 million years and have formed elevated river terraces and alluvial fan deposits (CDOC 1993). Generally, the uppermost

[1] To be considered significant for the purpose of Mineral Land Classification, a mineral deposit, or a group of mineral deposits that can be mined as a unit, must be actively mined under a valid permit or meet marketability and threshold value criteria adopted by the SMGB.

Thirty to fifty feet of alluvium within the MRZ-3a$^{sg(C14)}$ zone are composed of sand, silt, and clay with lesser amounts of pea gravel and pebbles.

The nearest mining operations to the Proposed Project site are located near the Merced River and the city of Delhi. Two of the mines have been closed and reclaimed and one remains active. All three mines were/are used for sand and gravel excavation:

- The Morrison and Morrison Sand Mine (Mine ID: 91-24-0046) is approximately 6 miles southeast of the Proposed Project site near Letteau Avenue in Delhi. The mine was permitted for 17 acres and was owned and operated by Morrison & Morrison. As of report year 2010, mining operations are closed, and reclamation has been certified as complete by the lead agency for this mine, the County of Merced (CDOC 2020a).

- The BMD Excavation (Mine ID: 91-24-0022) is an open pit operation approximately 7 miles southeast of the Proposed Project site near Griffith Avenue in Delhi. The mine was permitted for 65 acres and was owned and operated by Bettencourt & Mason Dairy. As of report year 2001, mining operations are closed and the reclamation has been certified complete by the lead agency for this mine, the County of Merced (CDOC 2020b).

- The Green Pit (Mine ID: 91-50-0021) is an active open pit mine approximately 8.5 miles southwest of the Proposed Project site near the Merced River. The site is permitted for approximately 27 acres and is owned and operated by CalMat, Inc./Vulcan Materials Company. As of report year 2019, the mine is still active, and reclamation is in progress (CDOC 2020c).

Two oil and gas wells are located within 1.5 miles of the Proposed Project site:

- Well #10-1 is northeast of the Proposed Project site on the southern border of Rotary International Park is operated by Mobil Oil Exploration & Production North America, Inc. It is no longer in use and has been plugged and abandoned (CDOC 2020d).

- Well #1 is southwest of the Proposed Project site, south of West Main Street and east of South Washington Road. The well was operated by L & B Oil Co. It is no longer in use and has been plugged and abandoned (CDOC 2020e).

12.4 IMPACT ANALYSIS

12.4.1 Methodology

To evaluate proposed project impacts on mineral resources, this section is based on an evaluation of the MRZ classifications of project area soils and reference to the following sources:

- California Department of Conservation – California Surface Mining and Reclamation Policies and Procedures: Guidelines for Classification and Designation of Mineral Lands (CDOC n.d.);
- California Department of Conservation – Mineral Land Classification of Stanislaus County (CDOC 1993);
- California Department of Conservation – Mines Online (CDOC 2020a, 2020b, 2020c);
- California Department of Conservation – Well Search (CDOC 2020d, 2020e);
- Stanislaus County – Previous General Plan Support Documents: Chapter 3, Conservation/Open Space (Stanislaus County 2016b); and
- Stanislaus County – General Plan and Airport Land Use Compatibility Plan Update Draft PEIR (Stanislaus County 2016a).

12.4.2 Criteria for Determining Significance

The Proposed Project would result in a significant impact on mineral resources if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

As detailed in the Proposed Project's Initial Study and in Chapter 3, *Introduction to the Environmental Analysis*, of this DEIR, the following criteria were identified as requiring no further analysis:

- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

12.4.3 Environmental Impacts

Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state — Less than Significant

Based on MRZ data for the surrounding land, the Proposed Project area is comprised of sedimentary formations consisting of sand, gravel, silt, and clay materials. Sand and gravel can be used for concrete for road and building construction and would potentially be considered significant mineral commodities. The City of Turlock's *General Plan Draft Environmental Impact Report* states that most gravel and sand used in the road and construction industry have been found in mining operations near the Merced and Tuolumne Rivers (City of Turlock 2012). These mining operations are far outside of the project vicinity. No known economically viable sources of sand and gravel materials are present near the Proposed Project site. Therefore, the Proposed Project would not result in the substantial loss of availability of a known mineral resource that would be of value to the region or residents of the state, and this impact would be **less than significant**. No mitigation is required.

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Chapter 13
Noise and Vibration

13.1 OVERVIEW

This chapter describes potential impacts related to noise and vibration in the project area associated with the Proposed Project. To provide context for the impact analysis, this chapter begins with an environmental setting describing the existing conditions in the Proposed Project area related to noise-sensitive receptors, noise-generating land uses, and vehicular transportation. Next, the regulatory framework is described, which informs the selection of the significance thresholds used in the impact analysis. The regulatory framework also includes existing general plan policies related to the impact analysis. The chapter concludes with the applicable significance thresholds, the noise and vibration impacts of the Proposed Project, recommended mitigation measures, and significance conclusions.

Modeling data used in the evaluation of noise and vibration impacts are provided in **Appendix G** of this DEIR.

13.2 REGULATORY SETTING

13.2.1 Federal Laws, Regulations, and Policies

Noise Control Act of 1972

The USEPA Office of Noise Abatement and Control originally was established to coordinate federal noise control activities. After its inception, this agency office implemented the federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, USEPA administrators determined that noise would be better addressed by state and local governments. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments.[1]

[1]However, the noise-control guidelines and regulations contained in USEPA rulings from prior years remain in place with designated federal agencies, allowing more individualized control by designated federal, state, and local government agencies for specific issues.

U.S. Environmental Protection Agency Noise Control Act (Public Law 92-574)

The federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that would jeopardize public health or welfare.[2] Although the USEPA was given a major role in disseminating information to the public and coordinating federal agencies, each federal agency retains authority to adopt noise regulations pertaining to agency programs.[3]

In 1974, in response to the requirements of the federal Noise Control Act, the USEPA identified indoor and outdoor noise level limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor and indoor noise exposure limits of 55 dBA Ldn (energy average of the A weighted sound levels occurring during a 24-hour period) and 45 dBA Ldn, respectively, are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. The sound-level criterion identified to protect against hearing damage in commercial and industrial areas is 70 dBA 24-hour Leq (equivalent sound level (the sound energy averaged over a continuous period of time) (both outdoors and indoors).

Federal Transit Administration Transit Noise and Vibration Impact Assessment

The FTA has published a technical manual, *Transit Noise and Vibration Impact Assessment*, which provides guidelines for determining groundborne vibration impacts related to building damage during construction activities (FTA 2018). Although the Proposed Project would not be subject to the FTA guidelines, the research that underpins these guidelines is relevant to this assessment. The FTA manual recommends using local construction noise limits, if possible. The primary concern regarding construction vibration is potential damage to structures. The thresholds for potential damage are much higher than the thresholds for evaluating potential

[2]USEPA was given the responsibility for providing information to the public regarding identifiable effects of noise on public health and welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act also directed that all federal agencies comply with applicable federal, state, interstate, and local noise control regulations.

[3]The USEPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

annoyance used to assess the impact from operational vibration on occupants of nearby buildings.

Building vibration damage criteria recommended by FTA are shown in **Table 13-1**. These vibration limits are the levels that pose a damage risk for each building category, not the level at which damage would occur. According to the guidelines, a measurement of 0.20 in/sec peak particle velocity (PPV) would indicate a risk for vibration damage for nonengineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber would have a risk of vibration damage at 0.50 in/sec PPV, pursuant to the guidelines.

Table 13-1. FTA Building Vibration Damage Criteria

Building Category	PPV (inch/second)	Approximate RMS Vibration Velocity Level* (VdB)
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Notes:

PPV = peak particle velocity

VdB = vibration decibel

*The root-mean-square (RMS) vibration velocity level is the process used to determine the average power output (continuous waveform) over a long period of time, measured in VdB relative to 1 micro-inch per second.

Source: FTA 2018

To avoid temporary annoyance to occupants of nearby buildings during construction or construction interference with vibration-sensitive equipment inside special-use buildings, such as that from a magnetic resonance imaging machine, FTA recommends comparing a project's construction-related vibration decibel (VdB to the criteria shown in **Table 13-2** for frequent, occasional, and infrequent events. FTA defines frequent events as more than 70 events per day, occasional events as 30 to 70 events per day, and infrequent events as fewer than 30 events per day. It was conservatively assumed that the construction-related, vibration-generating activities related to construction of the Proposed Project would be categorized as occasional events.

The vibration annoyance criteria for construction activities are based on land uses, as shown in Table 13-2. The guidelines recommend a vibration level of 80 VdB or less for residential uses and buildings where people normally sleep, and 83 VdB or less for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2018).

Table 13-2. FTA Construction Vibration Annoyance Criteria

Land Use Category	Frequent Events (VdB)	Occasional Events (VdB)	Infrequent Events (VdB)
Category 1: Buildings where vibration would interfere with interior operations*	65	65	65
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:

VdB is relative to 1 micro-inch/second.

"Frequent events" are defined as more than 70 vibration events from the same source per day.

"Occasional events" are defined as 30-70 vibration events from the same source per day.

"Infrequent events" are defined as fewer than 30 vibration events from the same source per day.

*The Category 1 limit 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 the acceptable vibration levels.

Source: FTA 2018

Occupational Health and Safety Administration Regulations

Noise levels are regulated by OSHA to protect workers from the effects of occupational noise exposure. The noise exposure level of workers is restricted to 90 dBA over an 8-hour work shift to protect hearing (29 CFR 1910.95). Exposure to levels exceeding 85 dBA requires that employers develop a hearing conservation program. Such programs include adequate warning, the provision of hearing protection devices, and periodic employee testing for hearing loss.

13.2.2 State Laws, Regulations, and Policies

State of California General Plan Guidelines

In 1971, the State required cities and counties to include noise elements in their general plans (Government Code Section 65302 *et seq*.). The *State of California General Plan Guidelines* (Governor's Office of Planning and Research [OPR] 2017) identify guidelines for the noise elements of local general plans, including a sound level/land-use compatibility chart. The noise element guidelines identify the "normally acceptable" range of noise exposure for low-density residential uses as less than 60 dBA Ldn, and the "conditionally acceptable" range as 55 to 70 dBA Ldn. The "normally acceptable" range for high-density residential uses is identified as below 65 dBA Ldn, and the "conditionally acceptable" range is identified as 60 to 70 dBA Ldn. For educational and medical facilities, levels below 70 dBA Ldn are considered "normally acceptable," and levels of 60 to 70 dBA Ldn are considered "conditionally acceptable." For office and commercial land uses, levels below 70 dBA Ldn are considered "normally acceptable," and levels of 67.5 to 77.5 dBA Ldn are considered "conditionally acceptable." Overlapping noise level ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

State law intended that noise elements guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of their populations to excessive noise levels. In 1984, State noise element provisions were revised to "recognize" guidelines prepared by the Office of Noise Control of the California Department of Health Services and to analyze and quantify, "to the extent practicable, as determined by the legislative body," noise from a long list of sources, including highways, freeways, primary arterials, and major local streets; passenger and freight railroad operations and ground rapid transit systems; commercial, general aviation, and other ground facilities and maintenance functions related to airport operation; local industrial plants; and other ground stationary noise sources identified by local agencies as contributing to the community noise environment. As noted in the draft update to the General Plan Guidelines, the guidelines have since been incorporated into the General Plan Guidelines for Noise Elements (OPR 2017).

The draft update to the General Plan Guidelines also addresses the balance between environmental noise and other planning objectives, including recognition that developed infill locations may experience higher levels of noise but are often desirable places to live and work precisely because they are active. Moreover, design strategies are available that can reduce adverse exposure to noise even in areas with relatively higher ambient noise levels (OPR 2017).

California Department of Transportation Vibration Criteria

The effects of groundborne vibration include movement of building floors, rattling of windows, shaking of items that sit on shelves or hang on walls, and rumbling sounds. In extreme cases, vibration can damage buildings, although this is not a factor for most projects. Human annoyance from groundborne vibration often occurs when vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance can be well below the damage threshold for normal buildings.

Vibration impacts would be significant if vibration levels would exceed the Caltrans-recommended standard of 0.2 in/sec PPV with respect to the risk of structural damage for normal buildings or FTA's maximum-acceptable vibration standard of 80 VdB with respect to human response (i.e., annoyance) at nearby vibration-sensitive land uses, such as residences. **Table 13-3** shows Caltrans' general thresholds for structural responses to vibration levels.

Table 13-3. Caltrans Thresholds for Risk of Structural Damage from Groundborne Vibration

Structure and Condition	Vibration from Transient Sources (in/sec PPV)	Vibration from Continuous/Frequent Intermittent Sources (in/sec PPV)
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes: in/sec = inches per second; PPV = peak particle velocity.

Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

Criteria relating to human perception have also been developed and are summarized in **Table 13-4**. The vibration amplitude can be compared to the criteria shown for a simple evaluation of the potential for annoyance and adverse impact. Some individuals may be annoyed at barely perceptible levels of vibration, depending on the activities in which they are participating.

Table 13-4. Caltrans Thresholds for Human Annoyance from Groundborne Vibration

Perceptibility of Vibration	Vibration from Transient Sources (in/sec PPV)	Lv from Transient Sources (VdB)	Vibration from Continuous/ Frequent Intermittent Sources (in/sec PPV)	Lv from Continuous/ Frequent Intermittent Sources (VdB)
Barely perceptible	0.04	80	0.01	68
Distinctly perceptible	0.25	96	0.04	80
Strongly perceptible	0.9	107	0.10	88
Severe	2.0	114	0.4	100

Notes: in/sec = inches per second; PPV = peak particle velocity; Lv = RMS vibration velocity level; VdB = vibration decibels.

Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

13.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Proposed Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in **Appendix B**.

13.3 ENVIRONMENTAL SETTING

This section describes the terminology used throughout this report to characterize the noise environment and describes the existing conditions in the Proposed Project area. The primary noise source in the area is Hwy 99. Other noise sources in the area include agricultural activities and natural sources (e.g., wind, birds). The Proposed Project area does not intersect with any military bases, special use airspaces, or low-level flight paths, and is not located in safety zones

or noise contours associated with airfields or airports that are a concern for land use compatibility planning.

13.3.1 Fundamentals of Environmental Noise

Below is a brief description of certain terminology used throughout this report to characterize the noise environment in the Project area.

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); it consists of variations in air pressure that the ear can detect. Noise is often described as unwanted sound (i.e., loud, unexpected, or annoying sound), and thus is a subjective reaction to the physical phenomenon of sound. Acoustics is the physics of sound. Sound levels are measured and expressed in decibels (dB), which is the unit of measurement for describing the amplitude of sound.

In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path(s) between the two. The loudness of the sound source and obstructions or atmospheric factors affecting the propagation of the sound to the receiver determine the sound level and characteristics of the sound perceived by the receiver. Acoustics primarily addresses the propagation and control of sound.

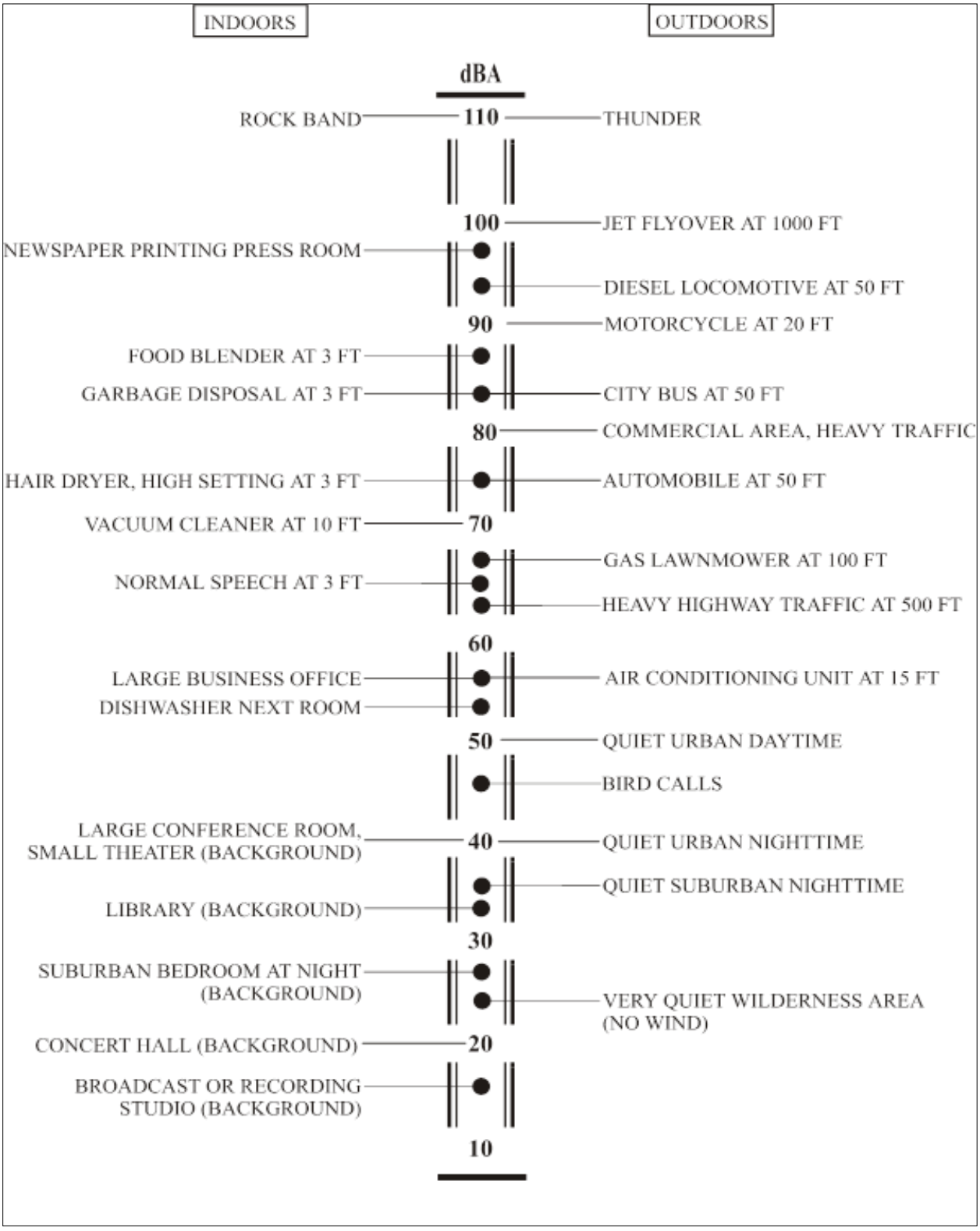
Frequency

The number of sound pressure peaks traveling past a given point in space during a single second is referred to as the frequency, expressed in cycles per second or Hertz (Hz). A given sound may consist of energy at a single frequency (pure tone) or in many frequencies over a broad frequency range (or band). Human hearing is generally affected by sound frequencies between 20 Hz and 20,000 Hz (20 kHz).

A-Weighted Decibels

Figure 13-1 illustrates sound levels associated with common sound sources. The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. Acoustical professionals often quantify sounds by “weighting” frequencies based on how sensitive humans are to that frequency. Within the usual range of environmental sound levels, perception of loudness is relatively predictable, and this perception is approximated using the A-weighting method. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment, and noise levels shown in this report are A-weighted.

Figure 13-1. Decibel Scale and Common Noise Sources



Source: Caltrans 2013

Human Response to Changes in Noise Levels

Under controlled conditions in a laboratory setting a human is able to discern 1 dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency range (1,000 Hz-8,000 Hz). In typical noisy environments, changes in noise level of 1 to 2 dB are generally not perceptible. However, people are able to begin to detect sound level changes of 3 dB in typical environments. A 5-dB change is readily noticeable, a 6-dB change is clearly noticeable, and a 10-dB change is generally perceived as a doubling or halving of loudness (Caltrans 2013).

Noise Descriptors

Noise in our daily environments fluctuates over time. Some fluctuations are minor, but some are substantial. Noise may occur in regular patterns or at random, levels may fluctuate rapidly or slowly, and some noise levels vary widely while others are relatively constant. Because these factors can influence human perception of sound, various noise descriptors have been developed to help describe noise exposure as it relates to time:

Equivalent Sound Level (Leq): The Leq represents an average of the sound energy occurring over a specified time period. In effect, the Leq is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour, A-weighted equivalent sound level (Leq[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period, and is the basis for noise abatement criteria (NAC) used by Caltrans and the Federal Highway Administration (FHWA).

Percentile-Exceeded Sound Level (Ln): The Ln represents the sound level exceeded "n" percentage of a specified period.[4]

Maximum Sound Level (Lmax): The Lmax is the highest instantaneous sound level measured during a specified period.

Day-Night Average Level (Ldn): The Ldn (or DNL) is the energy-average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours (10 p.m. to 7 a.m.).

[4] For example, L_{10} is the sound level exceeded 10 percent of the time, and L90 is the sound level exceeded 90 percent of the time.

Community Noise Equivalent Level (CNEL): Similar to Ldn, CNEL is the energy-average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours (10 p.m. to 7 a.m.), and a 5 dB penalty applied to the A-weighted sound levels occurring during evening hours (7 p.m. to 10 p.m.). The CNEL is usually within 1 dB of the Ldn, and the two are basically interchangeable. As it is easier to compute and of more common use, the Ldn is used as the long-term noise measure in this study.

13.3.2 Existing Noise Environment

Noise-sensitive Land Uses

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Places where people live, sleep, worship, and study are sensitive to noise because intrusive sound can be disruptive to these activities. Noise-sensitive uses include residentially designated areas, nursing homes, schools, libraries, and places of worship. Noise sources include highway and surface streets, railways, aircraft, and stationary noise sources such as commercial and industrial uses, construction sites, as well as neighborhood parks and schools.

Noise conflicts can occur when larger-scale commercial and industrial uses are located near or adjacent to residential neighborhoods, but recreational and other non-residential land uses can also create conflicts. Whether or not the juxtaposition of different land uses creates a noise conflict depends on the design, scale, character, and operation of both the noise-generating use and the noise-sensitive use.

The Proposed Project site is in Turlock, California, west of Hwy 99. The land use nearby is mostly agricultural. The nearest noise-sensitive land uses to the Proposed Project facilities are rural residences within 50 feet of the western boundary of the Project site. Noise-sensitive land uses generally consist of those uses for which 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.

Existing Sources of Noise

The existing noise environment in the Project area is primarily influenced by surface-transportation noise from vehicular traffic on Dianne Drive, West Canal Drive, and Hwy 99. **Table 13-5** presents the estimated existing noise levels at the residences along Dianne Drive across the street from the Proposed Project site, as well as distances to the 60 dBA, 65 dBA, and 70 dBA Leq traffic noise contours from the two primary roadways contributing to traffic noise in the Project area.

Table 13-5. Existing Traffic Noise Levels and Contour Distances along Dianne Drive

Roadway	Roadway Segment	ADT	Leq at Residential Uses	70 dBA Leq Contour Distance (ft)	65 dBA Leq Contour Distance (ft)	60 dBA Leq Contour Distance (ft)
Hwy 99	West Main Street to Fulkerth Road	12,200	58.9	329	708	1,525
Dianne Drive	Fulkerth Road to West Canal Drive	500	51.7	3	7	14
	Combined Level	**12,700**	**59.7**	**332**	**715**	**1,539**

Notes: ADT = average daily traffic; dB = decibels; Leq = equivalent sound level.

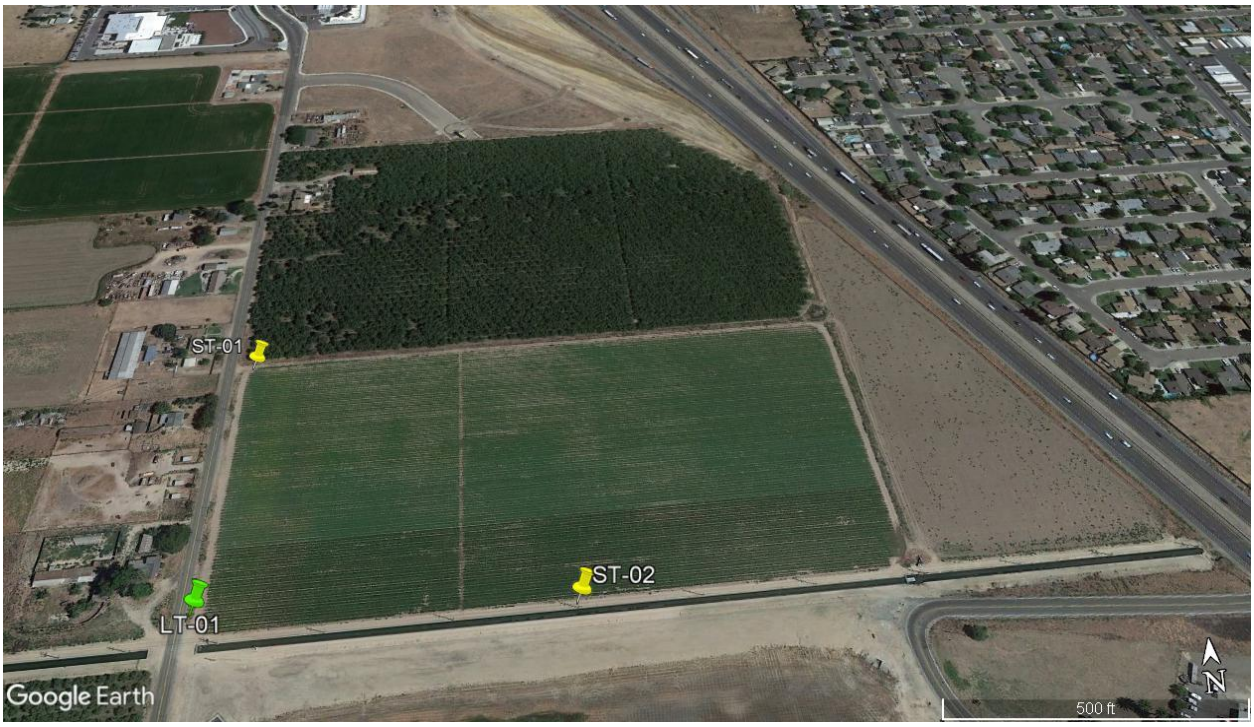
Source: Traffic data from Caltrans 2019, Fehr & Peers 2021, noise modeling conducted by AECOM in 2021 (Appendix G)

Other existing noise sources in the Project area include intermittent noise from outdoor activities at the surrounding residences (e.g., people talking, operation of landscaping equipment, car doors slamming, and dogs barking), birds, and wind that also influence the existing noise environment.

Ambient Noise Level Measurements

An ambient noise survey was conducted along the boundary of the Project site from December 1 to December 2, 2020, to establish existing noise conditions. Ambient noise measurements were conducted at three locations near existing noise-sensitive uses (single-family residences) on the west side of Dianne Drive, across from the Project site (**Figure 13-2**). Noise-level measurements were completed using a Larson Davis Laboratories (LDL) Model 820 and 831 precision integrating sound-level meter. The meter was calibrated before the measurements using an LDL Model CAL200 acoustical calibrator. The meter was programmed to record A-weighted sound levels using a "slow" response. The equipment used complies with all pertinent requirements of the American National Standards Institute for Class 1 sound-level meters (American National Standards Institute [ANSI] S1.4).

Figure 13-2. Ambient Noise Measurement Locations Adjacent to the Proposed Project Site



The results of the noise survey are shown in **Table 13-6**. Two short-term measurements (ST-1 and ST-2) were conducted during daytime hours. One long-term (24-hour) measurement was conducted along the boundary of the Proposed Project site. As shown in Table 13-6, measured ambient average noise levels at the noise-sensitive land uses closest to the site are 54 to 62 dBA Leq and 68 dBA Lden.

Table 13-6. Summary of Average Ambient Noise Level Survey Results in the Vicinity of the Project Site

Site ID*	Date	Time	Duration	Daytime Leq (dBA)	Daytime Lmax (dBA)	Nighttime Leq (dBA)	Nighttime Lmax (dBA)	Lden/CNEL (dBA)
LT-01	12-1/2-2020	13:00	24 hours	61.6	96.6	60.7	95.0	67.5
ST-01	12-1-2020	13:28	30 minutes	53.5	66.9	NA	NA	NA
ST-02	12-1-2020	15:56	15 minutes	65.2	77.5	NA	NA	NA

Notes: dBA = A-weighted decibels; Leq = equivalent sound level; Lmax = maximum instantaneous sound level; Lden = day-evening-night sound level; CNEL = community noise equivalent level.

*Site ID corresponds to the ID markers in Figure 13-2.

Source: Data compiled by AECOM in 2020.

13.4 IMPACT ANALYSIS

13.4.1 Methodology

Existing physical conditions were compared to future anticipated conditions under the Proposed Project during construction and operation. Land uses similar to the Proposed Project and data obtained during onsite noise monitoring were used to determine the potential locations of noise-sensitive receptors and noise-generating land uses in the Proposed Project area, as discussed above in Section 13.2.2 under "Ambient Noise Level Measurements." Noise-sensitive land uses and major noise sources were identified based on existing documentation (e.g., equipment noise levels and attenuation rates) and site reconnaissance data. Baseline ambient noise levels were based, in part, on the noise surveys. Predictions from traffic noise modeling and stationary-source noise levels were based on manufacturers' specifications.

The methodology used for this analysis is consistent with approaches recommended by the FTA, Caltrans, and the City of Turlock. Noise modeling was conducted using the FHWA's traffic noise prediction model (FHWA-RD-77-108) and the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018). Stationary-source noise levels were obtained from manufacturers' specifications and industry-standard technical reports. Traffic data from the traffic impact analysis (provided in Appendix H) were used to model existing and future traffic noise levels. Detailed noise analytical information is provided in Appendix G.

Construction Noise

To assess the potential short-term noise impacts from construction, sensitive receptors and their relative levels of exposure were identified. Construction noise was predicted using the

FHWA's Roadway Construction Noise Model (FHWA 2006). The noise emission levels referenced, and usage factors are based on FHWA's Roadway Construction Noise Model (FHWA 2006). Noise levels of specific construction equipment and resultant noise levels at the locations of sensitive receptors were calculated.

Groundborne vibration impacts were assessed based on FTA methodology for construction (e.g., vibration levels produced by specific construction equipment operations and the distance of sensitive receptors from a given source) and transportation vibration sources (FTA 2018). See Section 13.3.1, "Federal Laws, Regulations, and Policies," for more information about FTA transit noise and vibration impact assessment.

Traffic Noise

Noise impacts were also evaluated by comparing traffic noise generation associated with the operation of the Proposed Project to existing conditions in the Proposed Project area. The FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to predict traffic noise levels under existing conditions and under the Proposed Project operation scenarios.

Stationary Noise

Potential long-term (operational) noise impacts from stationary non-transportation sources and other area noise sources (e.g., cooling tower, emergency generator, pumps, HVAC, landscape, parking lot, and onsite project operational activities) were assessed based on existing documentation (equipment noise levels) and site reconnaissance data.

13.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, a noise impact is considered significant if implementation of the Proposed Project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure for people residing or working in the project area to excessive noise levels.

Of the above criteria, one criterion is not relevant to the Proposed Project, as described below, and is therefore not considered further in the impact analysis:

- **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure for people residing or working in the project area to excessive noise levels.** The Proposed Project area does not intersect with any military bases, special use airspaces, or low-level flight paths, and is not located in safety zones or noise contours associated with airfields or airports that are a concern for land use compatibility planning. The Proposed Project area is not located within 2 miles of a public or private airstrip. A private airstrip, Turlock Airpark, is located 2.6 miles to the southeast of the Proposed Project site. No airports or airstrips would be used by the Proposed Project under construction or operation. Also, the Proposed Project would not be impacted by noise from the operations of any public or private airport and would not expose people working in the Proposed Project site to excessive noise levels. Therefore, the Proposed Project would have **no impact** relative to excessive noise levels from aircraft noise.

13.4.3 Environmental Impacts

Impact NOI-1: Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies — Less than Significant with Mitigation

The Proposed Project would increase existing noise levels associated with the development of the property. As described in Chapter 2, *Project Description*, construction activities would involve site preparation, grading, clearing, and excavation, and building construction as well as paving and architectural coating. Typical construction equipment and vehicles would be used, such as air compressors, rubber-tired dozers, tractors/loaders/ backhoes, excavators, graders, cranes, forklifts, generator sets, welders, cement and mortar mixers, pavers, paving equipment, and rollers. Staging areas for materials and equipment would be located on the Proposed Project site. Trucking for delivery and disposal of materials would take place throughout the construction period. The nearest noise-sensitive uses to the construction activities for the Proposed Project are approximately 50 feet from the site.

Construction Equipment

To assess potential short-term, temporary (i.e., construction-related) noise impacts, noise levels of specific construction equipment were determined and resultant noise levels at given distances from the source were calculated. **Table 13-7** is a summary of the estimated noise levels associated with construction equipment onsite. Detailed noise calculations are provided in Appendix G.

Table 13-7. Predicted Construction Noise Levels at Closest Noise-sensitive Uses

Noise Source	Construction Activity at Nearest Boundary of Site (50 feet)	Distance to 70 dBA Contour	Construction Activity at Center of Site (260 feet)
Site Preparation	85 dBA	207 ft	65 dBA
Grading	87 dBA	250 ft	67 dBA
Building Construction	86 dBA	213 ft	66 dBA
Paving	88 dBA	259 ft	70 dBA
Architectural Coating	86 dBA	238 ft	66 dBA

Note: dBA = A-weighted decibels

Source: Noise modeling conducted by AECOM in 2021 (Appendix G)

The nearest noise-sensitive uses to the boundary of the Proposed Project site are residences approximately 50 feet to the west across Dianne Drive. As shown in Table 13-7, construction activities could generate intermittent noise levels of approximately 88 dBA at 50 feet during the noisiest construction phase. Construction activities in the center of the site (260 feet from residences) could generate intermittent noise levels of 70 dBA. As indicated in Table 13-6, existing ambient average noise levels at the noise-sensitive land uses closest to the site are 54-62 dBA Leq and 68 dBA Lden. Therefore, construction activities within 260 feet of residences would generate a substantial temporary increase in ambient noise levels.

The majority of the construction activities would take place farther than 50 feet from the nearest noise-sensitive uses; most would occur in the central portion of the site where the laboratory building would be constructed. Only portions of the parking areas and access road would possibly have construction equipment within 50 feet of nearest noise-sensitive uses (the residences along Dianne Drive) for short durations of the overall construction period. As shown in Table 13-7 above, construction could generate combined intermittent noise levels of approximately up to 70 dBA during the noisiest construction phase at 260 feet, the distance from the center of construction site to the residences along Dianne Drive. For these reasons, and because such work would satisfy the City's noise limit of 70 dBA, the temporary increases in ambient noise levels associated with construction would be **less than significant**.

Construction Traffic

With respect to construction traffic, worker trips and haul truck trips would increase traffic noise in the area. A maximum of approximately 85 worker trips would occur during the peak construction phase (building construction). Truck trips for delivery and disposal of materials would occur throughout the construction period, up to 250 haul truck trips over 43 days during the entire project construction, and would average 6 trips per day. **Table 13-8** presents the predicted distances to the 60 dBA, 65 dBA, and 70 dBA Leq traffic noise contours during Proposed Project construction. These contour distances identify portions of the Proposed

Project site that could be subject to noise impacts. Detailed noise calculations are provided in Appendix G.

As shown in Table 13-8, combined existing traffic noise levels at the noise-sensitive residential uses along Dianne Drive are estimated to be 59.7 dB, which is at the threshold level of 60 dB for residential uses according to the Turlock General Plan Noise Element (City of Turlock 2012). The noise from construction-related traffic of about 91 trips per day (85 worker trips and 6 truck trips) added to the noise from traffic on Hwy 99 and Dianne Drive would not cause a perceptible increase in traffic noise at the noise-sensitive residential uses along Dianne Drive. Because Proposed Project-related construction traffic would not cause a distinctly perceptible change in existing noise at nearest noise-sensitive uses along Dianne Drive, the impact from construction traffic would be less than significant.

Table 13-8. Existing Plus Construction Traffic Noise Levels and Contour Distances along Dianne Drive

Roadway and Segment	Existing Noise Level (Leq, dBA) at Residential Uses	Distance to Existing 70 dBA Contour	Distance to Existing 65 dBA Contour	Distance to Existing 60 dBA Contour	Existing + Construction Noise Level (Leq, dBA) at Residential Uses	Distance to Existing + Construction 70 dBA Contour	Distance to Existing + Construction 65 dBA Contour	Distance to Existing + Construction 60 dBA Contour
Hwy 99 from West Main Street to Fulkerth Road	58.9 dBA	329 ft	708 ft	1,525 ft	59.0 dBA	330 ft	711 ft	1,533 ft
Dianne Drive from Fulkerth Road to West Canal Drive	51.7 dBA	3 ft	7 ft	14 ft	56.2 dBA	6 ft	13 ft	28 ft
Combined Level	**59.7 dBA**	**332 ft**	**715 ft**	**1,539 ft**	**60.8 dBA**	**336 ft**	**724 ft**	**1,561 ft**

Notes: dBA = A-weighted decibels; Leq = equivalent sound level.

Source: Traffic data from Caltrans 2019, Fehr & Peers 2021, noise modeling conducted by AECOM 2021 (Appendix G).

Project-related construction noise (construction equipment noise level of 58 dB and construction traffic noise level of 60.8 dB) combined with existing combined traffic noise level of 59.7 dB from Hwy 99 and Dianne Drive would result in a combined noise level of 64 dB at the roadside exterior of the residences located along Dianne Drive. This level would not be a substantial increase from ambient conditions. Also, the Proposed Project would implement noise-reducing BMPs, particularly for those activities along the site's Dianne Drive frontage, to control noise from construction that would most affect the residents across the street. Therefore, the impact from short-term, temporary construction traffic noise would be less than significant.

Conclusion

Because construction activities would result in a substantial temporary increase in ambient noise levels, the Proposed Project would have a significant impact. As a State project on State-owned land, the Proposed Project is exempt from the local development regulations, including the noise ordinance. Nevertheless, the State maintains a "good neighbor" policy with regard to local regulations, where feasible. Implementation of **Mitigation Measure NOI-1 (Implement Noise-reducing BMPs during Construction Activities within 260 Feet of Residences)** would reduce intermittent construction noise levels through such means as temporary sound barriers, restricting the use of certain pieces of equipment, and retrofitting equipment with damping materials, mufflers, or enclosures. As a result, the impact would be **less than significant with mitigation**.

> **Mitigation Measure NOI-1: Implement Noise-reducing BMPs during Construction Activities within 260 Feet of Residences.**
>
> BMPs shall be utilized to the extent practical when equipment is operating near residential areas and may include use of a temporary sound barrier; alternating or limiting the use of construction equipment in a particular area; substituting construction equipment with quieter equipment; retro-fitting equipment with damping materials, mufflers, or enclosures; and/or siting noisy equipment as far as possible from residents. The use of diesel-powered construction equipment would be temporary and episodic, affecting only a few nearby receptors for a limited period of time.

Impact NOI-2: Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies — Less than Significant

Operation of the Proposed Project would have the potential to expose existing noise-sensitive uses to new noise sources, including traffic noise and fixed, non-transportation noise. Typical ongoing noise would be generated by mechanical equipment such as the onsite cooling tower, generator, pump, and HVAC equipment. As stated in Chapter 2, *Project Description*, the Proposed Project would be staffed at a level similar to the existing CAHFS Turlock Laboratory

and CDFA field offices, with a typical Monday-through-Friday work schedule, operating during normal business hours, from 8 a.m. to 5 p.m.

The standards of Turlock's Noise Ordinance are used for this analysis to assess noise from the Proposed Project during occupancy. The following analysis examines each noise source and discusses the potential for environmental impacts.

Transportation Noise

The Proposed Project would generate and attract vehicular traffic, which would increase traffic noise levels along existing roadways. As illustrated in **Table 13-9**, increased traffic volumes associated with Proposed Project operation would result in a less-than-perceptible increase in noise level (an increase of less than 1 dB). Existing noise-sensitive uses along Dianne Drive would experience increased traffic noise of less than 1 dB (from 59.3 dBA to 59.4 dBA) as a result of the minimal increase in traffic generated by the Proposed Project. The resulting noise level increase would not be substantial or exceed the existing General Plan's exterior noise standard for noise-sensitive uses of 60 dBA Ldn/CNEL for outdoor activity areas. Thus, traffic noise impacts associated with Proposed Project operations would be less than significant. Detailed noise calculations are provided in Appendix G.

Table 13-9. Existing and Proposed Operational Traffic Noise Contour Distances along Dianne Drive

Segment	Existing Noise Level (Ldn, dBA) at Residential Uses without Project	Distance to Existing 70 dBA Contour	Distance to Existing 65 dBA Contour	Distance to Existing 60 dBA Contour	Noise Level (Ldn, dBA) at Residential Uses with Project	Distance to Existing + Project 70 dBA Contour	Distance to Existing + Project 65 dBA Contour	Distance to Existing + Project 60 dBA Contour
Hwy 99 from West Main Street to Fulkerth Road	58.5 dBA	310 ft	668 ft	1,439 ft	58.5 dBA	310 ft	668 ft	1,440 ft
Dianne Drive from Fulkerth Road to West Canal Drive	51.3 dBA	3 ft	6 ft	13 ft	52.1 dBA	3 ft	7 ft	15 ft
Combined Level	**59.3 dBA**	**313 ft**	**674 ft**	**1,452 ft**	**59.4 dBA**	**313 ft**	**675 ft**	**1,455 ft**

Notes: dBA = A-weighted decibels; Ldn = Day-Night Average sound level.

Source: Traffic data from Caltrans 2019; transportation information provided by Fehr & Peers in 2021; noise modeling conducted by AECOM in 2021 (Appendix G).

Stationary-source Noise

The General Plan also provides standards for exposure to non-transportation noise sources such as industrial facilities, automotive servicing, or equipment yards, as 55 dB for daytime (7 a.m. to 10 p.m.) and 45 dB for nighttime (10 p.m. to 7 a.m.). Also, Section 5-28-108a of the Turlock Municipal Code defines the City's exterior noise limits (Levels Not to Be Exceeded More Than 30 Minutes in Any Hour) for residential uses (One- and Two-Family) as 60 dBA during the daytime hours (7 a.m. to 10 p.m.), and 50 dBA during the nighttime hours (10 p.m. to 7 a.m.). The local noise ordinance also states that short term noise increases can be from 5 to 20 dB above this level (5-28-109 (b)) and that if the measured ambient level differs from the permissible level the allowable noise exposure standard shall be adjusted in 5 dB increments to reflect the ambient noise level (5-28-29(c)). Also, if the measurement location is on the boundary between two different zones the noise level limit applicable to the lower noise zone plus 5 dB shall apply. The noise ordinance also recognizes that some short-term noise activities may be loud and has provided restricted times for their operation to avoid noise disturbances, including the following:

- Refuse collection vehicles are only prohibited from 6 p.m. to 5 a.m. in a residential area. (5-28-110 (i))
- Operating mechanical powered saw, sanders, drill, lawn or garden tools or similar tools between 10 p.m. and 7 a.m. on weekdays is prohibited. (5-25-110(l))
- HVAC and other motor machinery should be enclosed or muffled so as not to create a noise disturbance across a property line (5-28-110(l)
- Trash enclosures and trash compacting equipment is prohibited between 9 p.m. and 7 a.m. (5-28-110(o).
- Warning devices for protection of the public safety, such as backup alarms, are exempt (5-28-112(a)).

Stationary sources resulting from Proposed Project operation would include day and night sources and daytime only sources. **Table 13-10** summarizes noise levels for each of the stationary noise sources included in Proposed Project operation and the distances for the potential environmental impacts from those sources.

Table 13-10. Operational Noise Sources and Estimated Noise Levels at the Closest Noise-Sensitive Uses along Dianne Drive

Project's Operational Onsite Noise Source	Time of Operation	Distance to Closest Noise-Sensitive Uses	Predicted Noise Level at Closest Noise-Sensitive Uses
Cooling Tower	Day and Night	400 ft	58 dBA
Emergency Generator	Day and Night	400 ft	48 dBA
Pumps	Day and Night	400 ft	48 dBA
HVAC	Day and Night	200 ft	39 dBA
Combined Level			**49 dBA**
Landscape and Building Maintenance Activities	Daytime Only	50 ft	70 dBA
Solid Waste Collection	Daytime Only	50-200 ft	77-89 dBA
Parking Lot	Daytime Only	100 ft	49 dBA
Other Onsite Activities (e.g., loading dock activities, delivery)	Daytime Only	150 ft	80 dBA

Notes: dBA = A-weighted decibels

Source: Noise modeling conducted by AECOM in 2021 (Appendix G)

Day and Night Stationary Sources

Day and night stationary sources under the Proposed Project operation would include operation of the cooling tower, emergency generator, pumps, and HVAC.

The Proposed Project could require operation of mechanical equipment such as cooling tower, pumps, generators; and HVAC systems. Such equipment would operate during daytime and nighttime hours. The operation of mechanical equipment at the proposed laboratory facilities is considered a stationary and area noise source. For these types of noise sources, the applicable noise attenuation rate is 6 dB per doubling of distance from the source. Thus, if the estimated noise level from one of these sources is 70 dB at 50 feet, the noise level would lessen to 64 dB at 100 feet, 58 dB at 200 feet, and so forth. The Turlock noise ordinance requires that HVAC and

other motor machinery be enclosed or muffled so as not to create a noise disturbance across a property line. Such enclosures would provide 15 to 25 dB reduction in noise levels (USEPA 1974). While the Proposed Project is exempt from local development regulations, the State maintains a "good neighbor" policy with regard to local regulations, where feasible. The following analysis presents noise levels without and with enclosures (to be conservative, the assessment assumes that enclosures or muffling provide a 15-dB reduction).

The cooling towers could result in a noise level of approximately 76 dB at 50 feet (Acoustical Society of America 2006),[5] and exterior noise levels at the Dianne Drive residences would be approximately 58 dB approximately 400 feet from the site of the cooling towers behind the Proposed Project building. No enclosure or muffling is required for the cooling towers.

The emergency generator could result in a noise level of approximately 81 dB at 50 feet (FHWA 2006) and would result in an exterior noise level of 63 dB at the Dianne Drive residences approximately 400 feet from the site of the emergency generator behind the Proposed Project building. With an enclosure or muffling, the resulting noise level would be 48 dB at the Dianne Drive residences.

The pumps could result in a noise level of approximately 81 dB at 50 feet (FHWA 2006) and an exterior noise level of approximately 63 dB at the Dianne Drive residences approximately 400 feet from the site of the pump behind the Proposed Project building. With an enclosure or muffling, the resulting noise level would be 48 dB at the Dianne Drive residences.

The HVAC could result in intermittent noise levels of approximately 90 dB at 3 feet (USEPA 1971) and exterior noise levels of approximately 54 dB at the Dianne Drive residences approximately 200 feet from the site of the HVAC on the rooftop of the Proposed Project building. Unlike the other operational equipment, it is assumed the HVAC would be located in the middle area of the building rooftop, and therefore, only 200 feet from the residential uses along Dianne Drive. With HVAC enclosure or muffling, the resulting noise level would be 39 dB at the Dianne Drive residences.

The onsite stationary equipment under the Proposed Project operation could result in combined noise levels of up to 59 dB at the Dianne Drive residences. Furthermore, all of this equipment, except the rooftop HVAC system, would be shielded by the Proposed Project building, as illustrated in Figure 2-3. The combined noise level, taking into account at least a 10 dB reduction from the proposed building that would shield the homes from stationary noise sources on the east side of (behind) the building, would be 49 dB at the Dianne Drive residences.

[5] Cooling tower calculations were based on standard fan of 7.5 feet diameter fan per cell, and 20 hp per fan (Acoustical Society of America 2006).

The City's existing General Plan non-transportation standards are 45 dB Leq nighttime, 55 dBA Leq daytime, 65 dBA Lmax nighttime, 75 dBA Lmax daytime. The City's Noise Ordinance for exterior noise standards are 60 dBA during the daytime hours (7 a.m. to 10 p.m.), and 50 dBA during the nighttime hours (10 p.m. to 7 a.m.). Therefore, the stationary noise sources could exceed the existing General Plan non-transportation standards, but would meet the City's noise ordinance limit, at the existing noise-sensitive receptors across the street from the site. As stated in the City's noise ordinance, if the measured ambient level differs from the permissible level, the allowable noise exposure standard shall be adjusted in 5 dB increments to reflect the ambient noise level. The existing ambient noise level at the residential area closest to the Proposed Project site is 67.5 dBA CNEL, average hourly level of 61.6 dBA Leq daytime, and 96.6 dBA Lmax daytime, and average hourly level of 60.7 dBA Leq nighttime, and 95.0 dBA Lmax nighttime (Table 13-6). Therefore, the combined noise level of 49 dB at the Dianne Drive residences from the operation of cooling tower, emergency generator, pumps, and HVAC, at 50 feet, would not exceed the adjusted daytime and nighttime thresholds. This impact would be less than significant.

Daytime-only Stationary Sources

Stationary sources under the Proposed Project operation that would occur only during the daytime would include the operation of landscape and building maintenance activities, solid waste collection, parking lots, and other onsite activities. These activities would not occur simultaneously; however, they would occur intermittently while the cooling tower, emergency generator, pumps, and HVAC would be operating. Combined results are also discussed for these sources.

Landscape and Building Maintenance Activities

The Proposed Project is anticipated to require the use of landscape maintenance and other property maintenance equipment. Landscape maintenance activities include the use of leaf blowers, power tools, and gasoline-powered lawnmowers, which could result in intermittent noise levels of approximately 88.3 dB at 6.5 feet. The use of such equipment, assuming a noise attenuation rate of 6 dB per doubling of distance from the source, would result in exterior noise levels of approximately 70.1 dB at a distance of 50 feet. These activities would occur intermittently while the cooling tower, emergency generator, pumps, and HVAC would be under operation. Adding the combined 49 dB noise level from day and nighttime stationary equipment operation (the operation of cooling tower, emergency generator, pumps, and HVAC) discussed above, would not[6] increase this level of 70.1 dB at the nearest noise-sensitive uses.

The City's ordinance prohibits operating mechanical powered saws, sanders, drill, lawn or garden tools, or similar tools between 10 p.m. and 7 a.m. on weekdays. Such activities would

[6] Adding 70.1 dB and 49 dB would be equal to 70.1 dB. When two decibel values differ by 10 dB or more, zero (0) dB would be added to the higher value (Caltrans 2013, Table 2-3).

normally occur during daytime hours, which is a less noise-sensitive time of day. Depending on the location and extent of the use of this equipment, there would be a potential to exceed the existing General Plan non-transportation standards of 50 dBA Leq daytime, and 75 dBA Lmax daytime. Similarly, these building maintenance activities would exceed the City's Noise Ordinance for exterior noise standards of 60 dBA during the daytime hours (7 a.m. to 10 p.m.). However, as stated in the City's noise ordinance, short-term noise increases can be 5-20 dB above this level during daytime hours (7 a.m. to 10 p.m.), and if the measured ambient level differs from the permissible level the allowable noise exposure standard shall be adjusted in 5 dB increments to reflect the ambient noise level.

Existing ambient noise level at the residential area closest to the Proposed Project is 67.5 dBA CNEL as shown in Table 13-6. Therefore, the 70.1 dB noise level from the operation of landscape maintenance and other property maintenance equipment, at 50 feet, would not substantially exceed the ambient level of 67.5 dB plus 5 dB (72.5 dB). Furthermore, the majority of the maintenance activities would take place more than 50 feet from residences, since most of these activities would be more centered on the site taking place near the edge of the Project site along Dianne Drive for short durations. Therefore, this impact would be less than significant.

Solid Waste Collection

Solid waste collection (e.g., emptying large refuse dumpsters, possibly multiple times per week, and the shaking of containers with a hydraulic lift), could result in instantaneous maximum noise levels of approximately 89 dB Lmax at 50 feet. These activities would mostly take place farther than 50 feet, these waste collectors would be moving away from the noise-sensitive uses along Dianne Drive, as most of these activities would be more centered on the site for building activities and for short durations during the daytime. These activities would occur intermittently while the cooling tower, emergency generator, pumps, and HVAC would be under operation. Adding the combined 49 dB noise level from day and nighttime stationary equipment operation (the operation of cooling tower, emergency generator, pumps, and HVAC) discussed above, would not increase this level at the nearest noise sensitive uses. Depending on the location and extent of the use of this activity, there would be a potential to exceed the existing General Plan non-transportation standards of 50 dBA Leq daytime, and 75 dBA Lmax daytime. Similarly, these activities would exceed the City's Noise Ordinance for exterior noise standards of 60 dBA during the daytime hours (7 a.m. to 10 p.m.). However, solid waste collection is anticipated to be very brief, intermittent, and would occur during daytime hours, which are relatively less noise-sensitive times of the day. Noises would typically emanate from public rights-of-way. Noise associated with garbage collection would not be expected to create single-event noise that would be substantially disruptive to daily activities or cause sleep disturbance. Also, the City's ordinance prohibits operation of refuse collection vehicles from 6 p.m. to 5 a.m. in a residential area. Therefore, such activities would occur during daytime hours, which is a less noise-sensitive time of day. Furthermore, as stated in the City's noise ordinance, short term noise increases can be 5 to 20 dB above the threshold level of 60 dBA

during the daytime hours (7 a.m. to 10 p.m.). Therefore, this impact would be less than significant.

Parking Lots

Parking lots and parking structures include noise sources, such as vehicles entering/exiting the lot, alarms/radios, and doors slamming. The parking lot would be located in front of the laboratory along Dianne Drive with 70 spaces for employees and visitors and another 12 secured spaces for CDFA and CAHFS vehicles, livestock trailers, and equipment (a total of 82 parking spaces). Detailed noise calculations are provided in Appendix G. Assuming all parking spaces would be in use, they could result in a noise level of approximately 49 dB Leq (based on Equation 4-14 of FTA *Transit Noise and Vibration Impact Assessment Manual*) at 100 feet, which is the approximate distance from the existing noise-sensitive uses along the Dianne Drive to the center of the parking lot at the Proposed Project site. These activities would occur intermittently while the cooling tower, emergency generator, pumps, and HVAC would be under operation. Adding the combined 49 dB noise level from day and nighttime stationary equipment operation (the operation of cooling tower, emergency generator, pumps, and HVAC) discussed above, would cause an increase of 3 dB, resulting in combined level of 52 dB at the nearest noise sensitive uses along Dianne Drive. This level would exceed the existing General Plan standards 50 dBA Leq daytime. However, these activities would not exceed the City's Noise Ordinance for exterior noise standards of 60 dBA during the daytime hours (7 a.m. to 10 p.m.). Also, such activities are anticipated to be very brief, intermittent, and would occur during daytime hours, and the majority of the parking activities would occur during peak hours of the day when employees arrive and leave the site, which are relatively less noise-sensitive times of the day. As a result, parking lot noise would not exceed the existing General Plan non-transportation standards or the City's noise ordinance at the Dianne Drive residences. Therefore, this impact would be less than significant.

Other Onsite Activities

Other onsite noise sources include loading dock activities, delivery areas, and the operation of trash compactors and air compressors. The City's ordinance prohibits use of trash compacting equipment between 9 p.m. and 7 a.m. Warning devices for protection of public safety, such as backup alarms, are exempt. These activities are anticipated to be very brief, intermittent, and would occur during daytime hours, which are relatively less noise-sensitive times of the day. These other onsite activities could result in intermittent noise levels of approximately 91 dB Lmax at 50 feet (USEPA 1971) and high single-event noise levels from backup alarms from delivery trucks would take place during the more noise-sensitive hours of the day. These activities would be located approximately 150 feet from the existing noise-sensitive uses along Dianne Drive, and the resulting noise levels would be 80 dB at 150 feet. These activities would occur intermittently while the cooling tower, emergency generator, pumps, and HVAC would be under operation.

Adding the combined 49 dB noise level from day and nighttime stationary equipment operation (the operation of cooling tower, emergency generator, pumps, and HVAC) discussed above would not increase this level at the nearest noise sensitive uses. Therefore, such activities could produce noise levels that would exceed the City's Noise Ordinance standards for exterior noise standards of 60 dBA during the daytime hours (7 a.m. to 10 p.m.), and 50 dBA during the nighttime hours (10 p.m. to 7 a.m.). Also, such activities could produce noise levels that would exceed the existing General Plan non-transportation standards of 50 dBA Leq daytime, and 75 dBA Lmax daytime at existing noise-sensitive receptors, especially if such activities were to occur during the more noise-sensitive hours (e.g., evening, nighttime, and early morning). However, as stated in the City's noise ordinance, short-term noise increases can be 5to 20 dB above this 60 dBA level during the daytime hours (7 a.m. to 10 p.m.). Noise associated with these activities would not be expected to create single-event noise that would be substantially disruptive to daily activities or cause sleep disturbance. Given that these events are short term and temporary and, according to the City's noise ordinance, typically acceptable if not occurring during nighttime hours, and that warning alarms are exempt, this impact would be less than significant.

Conclusion

Proposed Project operation could result in various types of noise from employee and delivery traffic, stationary onsite equipment, and non-stationary activities. Although some of these activities could result in noise levels that exceed the existing General Plan standards, activities taking place during daytime hours can exceed those standards by 5 to 20 dB. Based on the calculations and modeling provided above and in Appendix G, the impact is **less than significant**.

Impact NOI-3: Generation of excessive groundborne vibration or groundborne noise levels — Less than Significant with Mitigation

Construction Activity

Construction activities at the Proposed Project site have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, and the specific activities involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The type and density of soil can also affect the transmission of energy. **Table 13-11** provides vibration levels for typical construction equipment.

Table 13-11. Typical Vibration Levels for Construction Equipment

Equipment	PPV at 25 Feet (in/sec)	Approximate Lv (VdB) at 25 Feet
Pile Driver (Impact) Upper Range	1.518	112
Pile Driver (Impact) Typical	0.644	104
Pile Driver (Sonic) Upper Range	0.734	105
Pile Driver (Sonic) Typical	0.170	93
Vibratory Roller	0.21	94
Large Bulldozer	0.089	87
Drill	0.089	87
Truck	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58
Significance Threshold	0.2/0.08 [1]	80

Notes: in/sec = inches per second; Lv = the velocity level in decibels referenced to 1 micro inch per second (1 µin/sec) and based on the root mean square velocity amplitude; VdB = Vibration Decibel, logarithmic velocity unit; PPV = peak particle velocity.

[1] For normal residential buildings and buildings more susceptible to structural damage, respectively.

Sources: Caltrans 2020, FTA 2018

The movement and operation of the Proposed Project's construction equipment may generate temporary groundborne vibration. Caltrans has developed criteria that are commonly applied as an industry standard to determine the impacts of Proposed Project vibration relative to human annoyance and structural damage. Caltrans determines that the vibration level of 80 VdB (0.04 in/sec PPV) would be distinctly perceptible. Therefore, activities generating less than 80 VdB at residential uses would avoid human annoyance. Also, Caltrans recommends staying below 0.5 in/sec PPV at older residential structures to avoid structural damage (Caltrans 2020).

The construction equipment for the Proposed Project would include maximum generation of vibration from trucks and bulldozers. The vibration level associated with the use of a large bulldozer is 0.089 in/sec PPV (87 VdB) at 25 feet (FTA 2018). The nearest vibration-sensitive uses (buildings) to the construction sites are the residential uses on Dianne Drive, approximately 50 feet away. At these distances, the vibration generated by Proposed Project construction equipment would attenuate to less than 78 VdB and 0.031 in/sec PPV, which would be less than the criteria of 80 VdB and 0.5 in/sec PPV recommended by Caltrans.

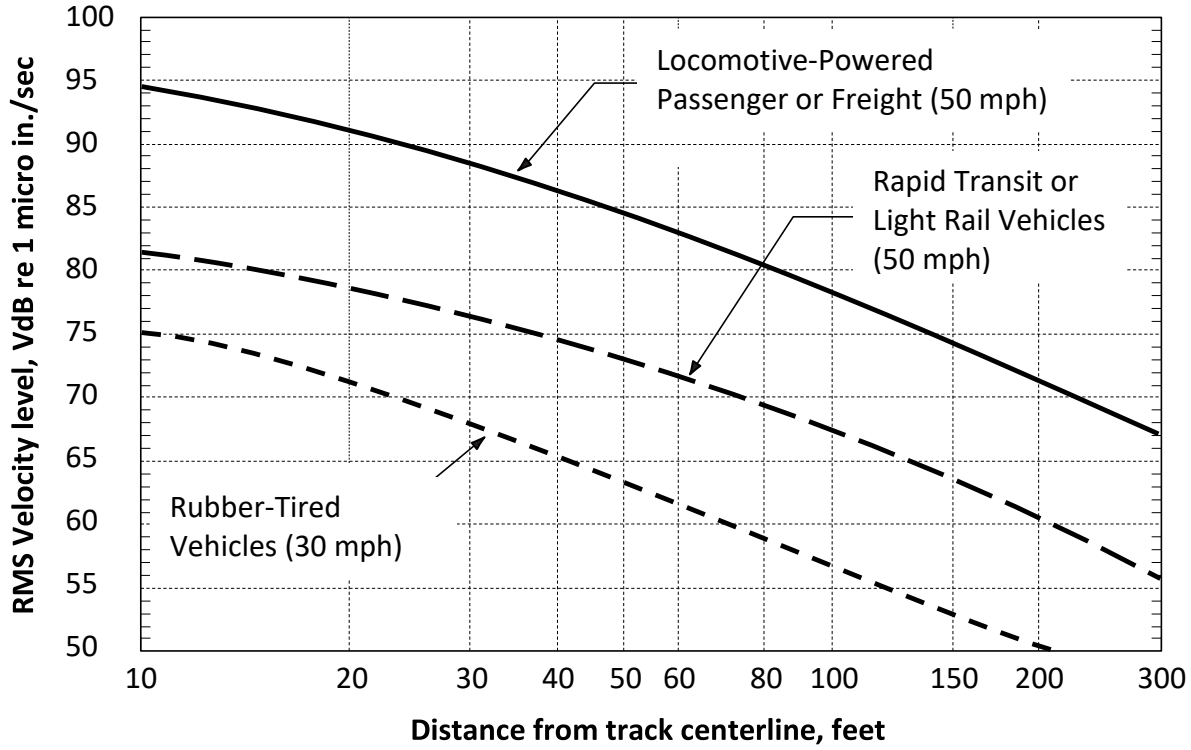
Therefore, vibration generated by trucks and bulldozers is not anticipated to be excessive or significant.

Vibratory rollers are frequently used for backfilling and paving work, however. As shown in Table 13-11, vibratory rollers have a higher reference value of 0.21 in/sec PPV at 25 feet (Caltrans 2020). The nearest vibration-sensitive uses (buildings) to the construction site are the residential uses along Dianne Drive approximately 50 feet away. The resulting vibration level from vibratory roller would be 85 VdB and 0.074 in/sec PPV at a distance of 50 feet, which would be below the 0.5 in/sec PPV threshold recommended by Caltrans for structural damage, but above the criterion of 80 VdB for annoyance. This impact would be significant.

Operation

Operation of the Proposed Project would introduce a new source of vibration associated with the facility activities. These activities would include truck deliveries to the Proposed Project site, which would be considered as a permanent source of vibration at the nearby vibration-sensitive uses (single-family residences) across Dianne Drive from the site. However, vibration from rubber-tired traffic is barely perceptible (FTA 2018). The delivery trucks would travel by the existing vibration-sensitive uses at lower speeds of up to 30 miles per hour as the trucks enter or exit the site along Dianne Drive. Based on FTA data, and as shown in **Figure 13-3**, rubber-tired vehicles operating at 30 miles per hour would generate groundborne vibration of approximately 0.01 PPV (64 VdB) at a distance of 50 feet from the roadway centerline, less than the criteria of 80 VdB and 0.5 in/sec PPV recommended by Caltrans. Therefore, this impact would be less than significant.

Figure 13-3. Generalized Ground-Surface Vibration Curves



Source: FTA 2018, adapted by AECOM in 2018

Conclusion

Since construction equipment operating near the edge of the property may temporarily exceed the vibration limit of 80 VdB during typical construction hours, the Proposed Project would have a significant impact. As a State project on State-owned land, the Proposed Project is exempt from the local development regulations, including the noise ordinance. Nevertheless, the State maintains a "good neighbor" policy with regard to local regulations, where feasible. Implementation of **Mitigation Measure NOI-2 (Implement Vibration-reducing BMPs during Construction Activities)** would ensure that equipment is operated as far as possible from structures, and designating a disturbance coordinator who will be responsible for responding to any local complaints. These BMPs would reduce Proposed Project-related construction vibration levels to below the applicable thresholds. Therefore, the impact of temporary construction vibration would be less than significant with mitigation.

Mitigation Measure NOI-2: Implement Vibration-reducing BMPs during Construction Activities

CDFA and its contractor(s) shall implement vibration-reducing BMPs to the extent practical when vibration-generating equipment is operating near residential areas. BMPs may include ensuring that the associated equipment is properly operated only when necessary and as far as possible from the structures, maximizing the distance

between construction equipment and nearby uses, using smaller construction equipment, by designating a disturbance coordinator who will be responsible for responding to any local complaints. Also, if a vibratory roller is required to be used within 110 feet of residential structures, the contractor will use a vibratory roller where the vibratory force can be turned down or turned off, and construction would not occur during the nighttime hours when vibration annoyance is definitely much more of an issue at night when people are sleeping.

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Chapter 14
Transportation

14.1 OVERVIEW

This chapter evaluates the Proposed Project's potential transportation related impacts. Specifically, the chapter evaluates whether the Proposed Project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) as this impact was determined potentially significant in the Initial Study. All other transportation-related impacts were determined to be less than significant and are not discussed.

The chapter first describes the transportation regulatory setting, which identifies federal and state laws, regulations, and policies applicable to the impact being evaluated in the DEIR. The environmental setting describes the location of the Proposed Project and relevant transportation-related improvements near the site. Finally, the Proposed Project's potential transportation impacts are evaluated. The impact evaluation begins by describing the significance criteria and the methods used to evaluate significance, and then presents the impact evaluation. Mitigation measures are proposed, where necessary, to reduce impacts to a less-than-significant level.

14.2 REGULATORY SETTING

14.2.1 Federal Laws, Regulations, and Policies

No federal plans, policies, regulations, or laws related to transportation impacts evaluated in the DEIR are applicable to the Proposed Project.

14.2.2 State Laws, Regulations, and Policies

The State of California has enacted several pieces of legislation that outline the state's commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and contribute to reductions in GHG emissions in line with state climate goals. Legislation that is potentially applicable to the VMT impact analysis for the Proposed Project is described below.

Assembly Bill 32

Assembly Bill (AB) 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32

requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that:

> (a) the statewide GHG emissions limit shall remain in effect unless otherwise amended or repealed; (b) it is the intent of the Legislature that the statewide GHG emissions limit continues in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020; (c) the CARB shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020.

Senate Bill 375

Senate Bill (SB) 375 requires metropolitan planning organizations (MPOs) to prepare a sustainable communities strategy (SCS) as part of their regional transportation plans (RTPs). The SCS demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by CARB.

In 2017, the California State Legislature passed SB 150, which requires CARB to prepare a report beginning in 2018 and every 4 years thereafter analyzing the progress made by each MPO in meeting regional GHG emission reduction targets.

Senate Bill 743

SB 743 created or encouraged several statewide changes to the evaluation of transportation and traffic impacts under CEQA. First, it directed OPR to amend the CEQA Guidelines to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allowed OPR to extend use of the new metrics beyond TPAs. In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric and applied their discretion to recommend its use statewide. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018.

The amended CEQA Guidelines contain the following relevant expectations for VMT impact analysis.

- Generally, vehicle miles traveled is the most appropriate measure of transportation impacts.
- Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

- A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure.

Second, SB 743 establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment.

Third, SB 743 added Section 21099 to the Public Resources Code, which states that automobile delay, as described by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the CEQA Guidelines by the California Natural Resources Agency. Since the amended CEQA Guidelines were certified in December 2018, LOS or similar measures of vehicular capacity or traffic congestion are not considered a significant impact on the environment.

Lastly, SB 743 establishes a new CEQA exemption for a residential, mixed-use, and employment center project (a) within a TPA, (b) consistent with a specific plan for which an EIR has been certified, and (c) consistent with an SCS. This exemption requires further review if the project or circumstances changes significantly.

To aid in SB 743 implementation, OPR released a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to lead agencies on how to implement SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

Specific to the Proposed Project, the Technical Advisory contains the following recommendation related to assessing VMT impacts.

> **Small projects** – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.

Caltrans Vehicle Miles Traveled – Focused Transportation Impact Study Guide

The Caltrans *Vehicle Miles Traveled – Focused Transportation Impact Study Guide* (TISG), dated May 20, 2020, was prepared to provide guidance to Caltrans districts, lead agencies, tribal governments, developers, and consultants regarding Caltrans' review of VMT impact analysis for land use projects and land use plans. Caltrans seeks to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita VMT, increase accessibility to destinations via cycling, walking, carpooling, and transit, and reduce GHG emissions. The TISG notes that, for land use projects and plans, automobile delay is no longer considered a significant impact on the environment under CEQA. Caltrans' primary review focus for a land

use project's transportation impacts is now VMT. The TISG generally endorses the OPR Technical Advisory, including the thresholds in that document. Caltrans may review VMT thresholds, methodology, and mitigations.

14.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

14.3 ENVIRONMENTAL SETTING

The Proposed Project conceptual design includes two primary driveways that would be accessed directly from Dianne Drive; one would be used by CDFA staff, visitors, and delivery supply trucks and the other would be exclusively for emergency vehicle access. In addition to these two driveways, the Proposed Project site plan includes an access driveway that provides access to one ingress-only driveway and one egress-only driveway proposed along the northern property line. Because the Proposed Project would utilize approximately 7 acres of the approximately 27-acre parcel, it is anticipated that this access driveway would be converted to a public roadway in the future to provide access to the remaining 20 acres. However, because it is unknown when or how the remaining 27 acres would be developed, this would be constructed as an access driveway rather than a public road.

Dianne Drive will ultimately be constructed as an Industrial Street, which is defined in the City of Turlock General Plan (2012) as follows:

> **Industrial Streets** are roadways designed to accommodate trucks serving industrial areas, and generally provide two travel lanes. They are primarily found in the TRIP and some older industrial areas south of Downtown. Their wide lanes are intended to accommodate multiple large trucks' turning movements. Access onto adjacent industrial properties is permitted including multiple access points per parcel.

14.4 IMPACT ANALYSIS

14.4.1 Methodology

Information about existing and Proposed Project trip generation and employee commute trips was used to evaluate whether the Proposed Project's VMT would result in a significant transportation impact. It is important to note that the daily trip generation estimate includes only commute trips for employees who currently commute to existing offices or the laboratory and who are expected to commute to the Proposed Project site on a daily basis. Field employees do not commute to work regularly and, therefore, are not included in the daily trip generation estimate. Additionally, weekly vendor trips for rendering, linen, and hazardous

waste pick-up, as well as quarterly trips for chemical waste disposal, are not included in the daily trip generation estimate as these trips do not occur on a daily basis.

14.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact on transportation if it would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15604.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

As detailed in the Proposed Project's IS and in Chapter 3, *Introduction to the Environmental Analysis*, of this DEIR, the following criteria were identified as requiring no further analysis:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

14.4.3 Environmental Impacts

Impact TRANS-1: Conflict or inconsistency with CEQA Guidelines Section 15604.3(b) – Less than Significant

CDFA, the City of Turlock, and Stanislaus County do not currently have any identified thresholds of significance for VMT analysis. Therefore, the Proposed Project was evaluated against the screening criteria in OPR's Technical Advisory. The following criteria, which can be used to determine if a project is expected to result in a less than significant impact, is applicable to Proposed Project.

> **Small projects** – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.

Additionally, because the Proposed Project would result in an overall net increase in VMT, the analysis estimated the average VMT that may be produced by a small office project in Turlock

and evaluated the project's VMT comparatively. The 2012 California Household Travel Survey indicates that the average commute VMT in Turlock is 10.7 miles one way, or 21.4 miles round trip. This is comparable to the existing VMT generated by the existing Turlock Laboratory, which is an average of 24 miles round trip per employee.

Therefore, a small office project in or near Turlock generating 110 daily trips with an average employee commute of 21.4 miles would generate 2,354 VMT. A small office project generating 98 daily trips (which is consistent with the Proposed Project's trip generation) with an average employee commute of 21.4 miles would generate 2,097 VMT. The Proposed Project's employee VMT was compared to these numbers to evaluate whether the Proposed Project would result in a significant transportation impact.

The existing offices and laboratory include a total of 44 employees; however, only 25 employees commute to work on a daily basis. Of these, seven employees commute to the AHFSS office daily, two employees commute to the MDFS office daily, and 16 employees commute to the existing CAHFS Turlock Laboratory daily. The remaining employees are field employees who do not commute to the office on a daily basis. The Proposed Project would increase the total number of employees from 44 to 56 employees. One new employee would be a field employee and 11 new employees are expected to commute to the office daily.

Table 14-1 presents the existing and Proposed Project's estimated daily trip generation.

Table 14-1. Existing and Proposed Daily Trip Generation

Office	Trip Type	Total Daily Trips
AHFSS	Employee Trips	14
MDFS	Employee Trips	4
Existing Turlock Laboratory	Employee Trips	32
	Walk-ins	8
	Deliveries	8
	Total Existing Trips	**66**
Proposed Project	Employee Trips	72
	Walk-ins	18
	Deliveries	8
	Total Proposed Project Trips	**98**
	Net Increase (Proposed – Existing)	32

Notes:

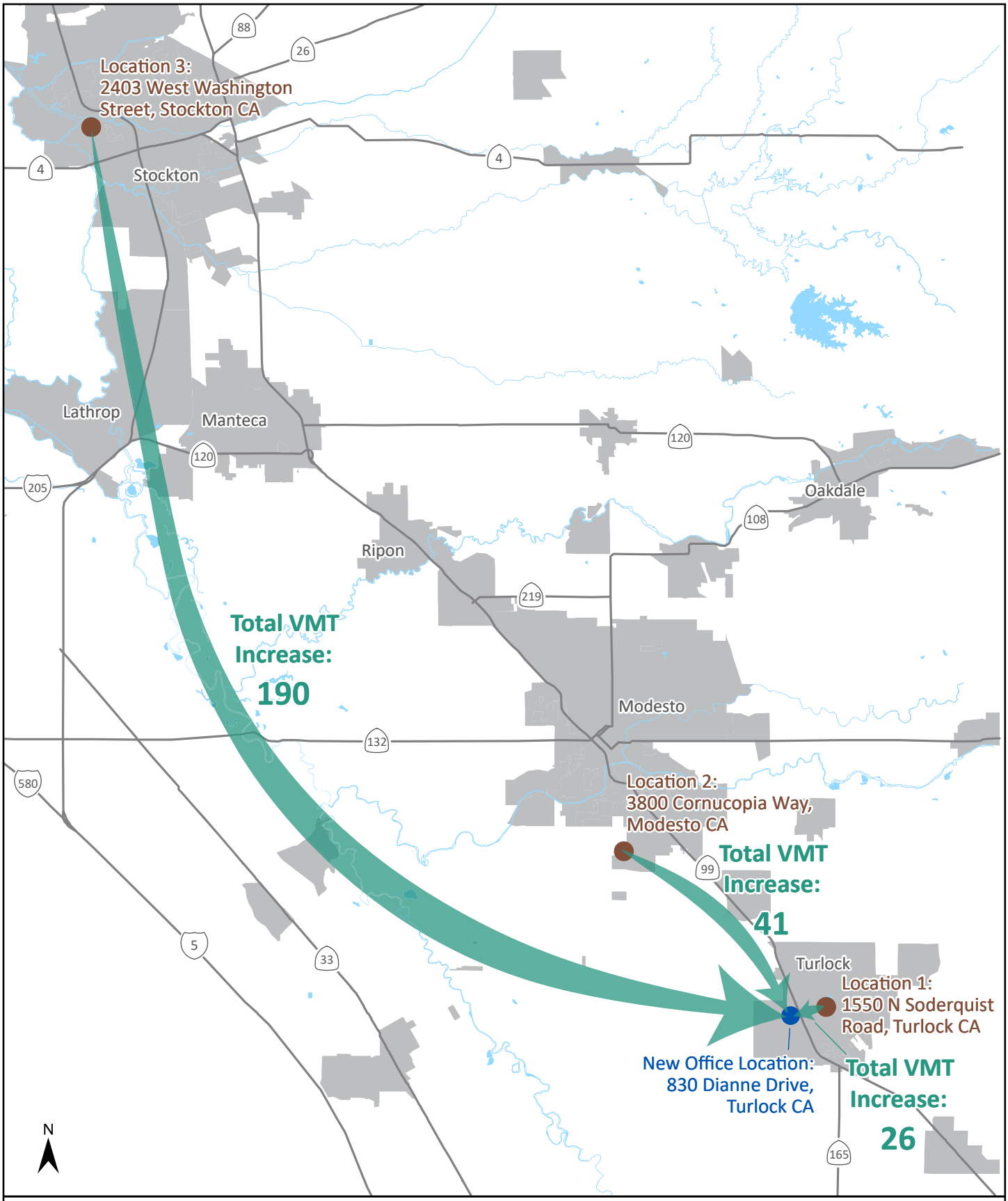
Trip generation information based on information provided by CDFA.

Additional weekly trips for rendering pick up, linens, and hazardous waste, and quarterly trips for chemical waste are not included in the daily trip generation as these trips do not occur on a daily basis.

Source: Calculations provided by Fehr & Peers in 2021

As shown in Table 14-1, the Proposed Project is estimated to generate 98 daily trips, including employee trips, walk in trips, and delivery trips. This results in a net increase of 32 daily trips when compared to the existing three offices. This net increase includes trips from 11 new employees that are anticipated to commute to work daily.

In addition to daily trip generation information, round-trip commute information for each existing employee was provided from their residence to their existing office or laboratory and to the Proposed Project. This information was used to evaluate whether the Proposed Project would result in a net increase or decrease in VMT for existing employees. VMT was only estimated for employees who are anticipated to commute to the office daily. **Table 14-2** shows the existing and proposed daily commute VMT estimate for employees. **Figure 14-1** graphically displays the total net increase in existing employee VMT that would occur as a result of the Proposed Project. Two employees' commute distance would change from Location 3, seven employees' commute distance would change from Location 2, and 16 employees' commute distance would change from Location 1.



Source: Fehr & Peers 2021

Figure 14-1
Net VMT Increase

Prepared by:
Horizon
WATER and ENVIRONMENT

Turlock North Valley
Laboratory Replacement Project

Table 14-2. Estimated Change in VMT for Daily Office Employees

Office	VMT to Existing Facility	VMT to Proposed Facility	Net Change
AHFSS[1]	354	395	+ 41
MDFS[2]	198	388	+ 190
Turlock Laboratory[3]	389	415	+ 26
Existing Employee Total	941	1,198	+ 257
New Employee VMT[4]	–	527	+ 527
	Total	**1,725**	**+ 784**

Notes:

VMT estimates are based on employee information provided by CDFA. Calculations include only those employees who commute to the office daily.

[1] Includes VMT estimates for seven employees who commute to the office daily.

[2] Includes VMT estimates for two employees who commute to the office daily.

[3] Includes VMT estimates for 16 employees who commute to the office daily.

[4] Includes VMT estimates for 11 new employees who would commute to the office daily. Since these are future employees, their commute was estimated using the average commute length for all existing employees.

Estimated commute distance per employee is based on the average commute distance of all existing employees.

Source: Fehr & Peers 2021

As shown in Table 14-2, the estimated commute VMT for daily office employees with the Proposed Project is estimated to be 1,725, which results in a total net increase of 784 VMT. This is inclusive of estimated commute VMT for the 11 new employees that would commute to the office daily.

The Proposed Project is estimated to generate 98 daily trips, which is less than the 110 daily trip threshold for a small project identified in OPR's Technical Advisory. The Proposed Project's daily commute VMT is estimated to be 1,725, which is less than the estimated 2,354 commute VMT that would be generated by a small office project in or near Turlock generating 110 trips daily trips, and less than the estimated 2,097 commute VMT that would be generated by a small office project in or near Turlock generating 98 trips daily. Therefore, the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and would result in a **less-than-significant** transportation impact.

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Chapter 15
Tribal Cultural Resources

15.1 OVERVIEW

This chapter describes potential impacts of the Proposed Project related to tribal cultural resources (TCRs). TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project being evaluated. Archaeological sites and burial sites can also be TCRs.

15.2 REGULATORY SETTING

15.2.1 Federal Laws, Regulations, and Policies

Federal law does not address TCRs, as these resources are defined in the California Pub. Res. Code. However, similar resources, called Traditional Cultural Properties (TCPs), fall under the purview of Section 106 of the NHPA, as described in Chapter 7, *Cultural Resources,* of this DEIR. TCPs are locations of cultural value that are historic properties. A place of cultural value is eligible as a TCP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1990, rev. 1998). A TCP must be a tangible property, meaning that it must be a place with a referenced location, and it must have been continually a part of the community's cultural practices and beliefs for the past 50 years or more. Unlike TCRs, TCPs can be associated with communities other than Native American tribes, although the resources are usually associated with tribes. By definition, TCPs are historic properties; that is, they meet the eligibility criteria as a historic property for listing in the NRHP. Therefore, as historic properties, TCPs must be treated according to the implementing regulations found under Title 36 CFR Section 800, as amended in 2001.

15.2.2 State Laws, Regulations, and Policies

CEQA and CEQA Guidelines

Assembly Bill (AB) 52 requires that state lead agencies consult with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if requested by the tribe. The bill, chaptered in Pub. Res. Code Section 21084.2, also specifies that 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.

As defined in Pub. Res. Code Section 21074(a, b, and c), TCRs are:

(A.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 California Register of Historical Resources; or

b. Included in a local register of historical resources as defined in subdivision (k) of § [Section] 5020.1.

(A.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 § 5024.1. In applying the criteria set forth in subdivision (c) of § 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 TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

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

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to Pub. Res. Code Section 21080.3.2 and Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

15.2.3 Local Laws, Regulations, and Policies

Neither the City of Turlock and nor the County of Stanislaus has any laws, regulations, or policies that specifically pertain to TCRs.

15.3 ENVIRONMENTAL SETTING

As discussed in Chapter 7, *Cultural Resources*, the Proposed Project is in the traditional ancestral territory of the North Valley Yokuts. No tribes with a traditional and cultural affiliation to the Proposed Project area have requested consultation with CDFA on department projects pursuant to Pub. Res. Code Section 21080.3.1. However, in the spirit of Pub. Res. Code Section 21080.3.1, DGS, on behalf of CDFA, submitted a request to the NAHC on June 9, 2020, to review its files for the presence of sacred sites at or near the project location. At the same time, requests were made for a list of tribes with a traditional and cultural affiliation with the Proposed Project area for the purpose of consultation as required by Pub. Res. Code Section 21080.3.1. The NAHC responded the same day, noting that no sacred sites are known to exist in the vicinity of the Proposed Project site, and provided three tribal contacts for the purposes of Pub. Res. Code Section 21080.3.1 consultation.

Each of the individuals identified by the NAHC was provided notification about the Proposed Project via U.S. mail on June 24, 2020, with a returned certified receipt, and follow-up emails were sent on July 24, 2020 (**Table 15-1**). At the time this DEIR was prepared, no responses have been received from any of those individuals contacted. All correspondence related to Pub. Res. Code Section 21080.3.1 is provided in Appendix B of the Archaeological Inventory Report, which is included as **Appendix F** of this DEIR.

Table 15-1. Native American Consultation

Contact	Tribe	Letter Date	Email Follow-up Date	Comments
Katherine Erolinda Perez, Chairperson	North Valley Yokuts Tribe	June 24, 2020	July 24, 2020	No response to date
Timothy Perez, Most Likely Descendent Contact	North Valley Yokuts Tribe	June 24, 2020	July 24, 2020	No response to date
William Leonard, Chairperson	Southern Sierra Miwuk Nation	June 24, 2020	July 24, 2020	No response to date

15.4 IMPACT ANALYSIS

15.4.1 Methodology

Consultation with tribes that have a traditional and cultural affiliation with the Proposed Project area followed the protocols outlined under Pub. Res. Code Sections 21080.3.1, 21080.3.2, and 21082.3 and guidelines provided by the NAHC, OPR, and the California Natural Resources Agency.

15.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact on TCRs if it would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Pub. Res. Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Pub. Res. Code Section 5020.1(k), or
    - 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 Pub. Res. Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Pub. Res. Code 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.

15.4.3 Environmental Impacts

Impact TCR-1: Potential for a substantial adverse change to tribal cultural resources listed, or eligible for listing in the California Register of Historical Resources or a local register of historical resources — No Impact

No TCRs that are listed or eligible for listing in the CRHR or a local register of historical resources have been identified within the Proposed Project area. Therefore, there would be no impact to TCRs that are listed or eligible for listing in the CRHR or a local register.

TCRs that are eligible for listing in the CRHR may be identified as unanticipated archaeological discoveries during construction. Impacts to these resources are evaluated in Impact TCR-2 below.

Impact TCR-2: Potential for a substantial adverse change to tribal cultural resources determined by the lead agency to be significant — Less than Significant with Mitigation

As mentioned above, although DGS notified tribes with a traditional and cultural affiliation within the area about the Proposed Project, none of the tribes contacted identified TCRs in the Project area. Furthermore, no TCRs determined by the lead agency, in its discretion and supported by substantial evidence, to be significant are known to be located in the Project

vicinity. As a result, it appears that there would be no impact to TCRs. However, it is possible that Native American archaeological remains or Native American human remains that could be determined to be TCRs could be discovered during the course of construction. If such resources are identified, they would be treated according to **Mitigation Measure CR-1 (Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for NRHP/CRHR Eligibility, and Implement Appropriate Measures for Eligible Resources)** or **Mitigation Measure CR-2 (Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code)**, as described in Chapter 7, *Cultural Resources*. Implementation of these mitigation measures would result in a less-than-significant impact to TCRs. As a result, this impact would be **less than significant with mitigation.**

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Chapter 16
Utilities and Service Systems

16.1 Overview

This chapter describes the setting and potential impacts on utilities and service systems that could occur from the Proposed Project. Impacts to utilities and service systems under CEQA are generally related to increased demand for, or use of utilities and service systems (e.g., water, wastewater, solid waste disposal), such as to require construction of new or expanded facilities. The CEQA Guidelines also have significance criteria for utilities and service systems related to noncompliance with existing solid waste laws and regulations.

16.2 Regulatory Setting

16.2.1 Federal Laws, Regulations, and Policies

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and wetlands.

Section 404 – Discharge of Dredged and Fill Materials into Waters of the United States

Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, vernal pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of USACE under the provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 – Water Quality Certification

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. and affect water quality. In California, the USEPA has delegated its authority to the SWRCB; the SWRCB, in

turn, delegates implementation responsibility to the nine regional water quality control boards who will issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan, as described in "Porter-Cologne Water Quality Act" below). Applicants for a federal license or permit under CWA Section 404 to conduct activities that may result in the discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (amended 1986) is a federal act regulating the potential health and environmental problems associated with solid waste hazards and non-hazardous wastes. Specific regulations addressing solid waste issues are contained in Title 40, CFR.

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. This act included establishing energy-related tax incentives for energy efficiency and conservation; renewable energy; oil and gas production; and electricity generation and transmission. The act also established increased amounts of renewable fuel (e.g., ethanol or biodiesel) to be used in gasoline sold in the U.S., provisions to increase oil and natural gas production on federally owned lands, and federal reliability standards regulating the electrical grid.

16.2.2 State Laws, Regulations, and Policies

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act (CIWMA) of 1989 (Pub. Res. Code Division 30), enacted through AB 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (Pub. Res. Code Section 41780). A jurisdiction's diversion rate is the percentage of its total waste that a jurisdiction diverts from disposal through reduction, reuse, and recycling programs. The state, acting through the California Integrated Waste Management Board (CIWMB), determines compliance with this mandate. Per capita disposal rates are used to determine if a jurisdiction's efforts are meeting the intent of the act.

In 2011, the Legislature implemented a new approach to the management of solid waste. California's Commercial Recycling Bill (AB 341) went into effect on July 1, 2012, and set a recycling goal of 75 percent diversion by 2020. The bill is intended to (1) reduce GHG emissions by diverting recyclable materials, and (2) expand the opportunity for increased economic

activity and green industry job creation. AB 341 is a statewide policy goal rather than a city or county jurisdictional mandate.

In recent years, Stanislaus County has been meeting its target disposal rates under the CIWMA. In 2019, the latest year of record, Stanislaus County's annual per capita disposal rate per resident was 3.9, compared to its target of 6.3 (California Department of Resources Recovery and Recycling [CalRecycle] 2019). Its annual per capita disposal rate per employee was 11.9 in 2019, compared to its target rate of 21.2 (CalRecycle 2019).

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act of 1991 (Pub. Res. Code Sections 42900–42911) requires that all development projects applying for building permits include adequate, accessible areas for collecting and loading recyclable materials.

California Integrated Energy Policy

Senate Bill 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an Integrated Energy Policy Report (IEPR) for the governor and legislature every 2 years. The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2019a). Volume II of the 2018 IEPR Update describes opportunities to improve energy efficiency; integrate more renewable energy into the grid; improve energy forecasting capabilities; enhance resiliency to climate change, and ensure that reliability and the benefits of clean energy reach all Californians (CEC 2019b).

Urban Water Management Planning Act

California Water Code Section10610 *et seq.* requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year (AFY), prepare an urban water management plan (UWMP).

California Code of Regulations, Title 8, Section 1541: Excavations

Section 1541 of the CCR requires excavators to determine the approximate locations of subsurface installations, such as sewer, telephone, fuel, electric, and water lines, before opening an excavation, and avoid impacts to subsurface installations.

16.2.3 Local Laws, Regulations, and Policies

Development activities on state-owned land are exempt from local laws, regulations, and policies. However, such laws, regulations and policies may apply to development activities not located on the Project site (e.g., connections to infrastructure within the public right-of-way). Local laws, regulations, and policies applicable to the Proposed Project are listed in Appendix B.

16.3 ENVIRONMENTAL SETTING

Utilities to support the Proposed Project are available and located along the western boundary of the site and within the Dianne Drive right-of-way. **Table 16-1** lists anticipated utility service agencies that would serve the Proposed Project.

Table 16-1. Local Utility Agencies in the Project Area

Utility Service	Utility Agency	Will-Serve Letter Received
Water Supply	City of Turlock	June 18, 2021
Sanitary Sewer	City of Turlock	June 18, 2021
Stormwater Management	City of Turlock / State of California	June 18, 2021
Electrical Service	Turlock Irrigation District	July 14, 2021
Natural Gas Service	Pacific Gas and Electric Company	May 14, 2021
Data and Phone Service	AT&T	May 6, 2021

16.3.1 Water Supply

The City relies on groundwater to meet its municipal and industrial water demands and does not currently have a surface water supply[1]. Groundwater is supplied through the Turlock Sub-basin, which is a subunit of the San Joaquin Valley Groundwater Basin.

In 2015, the City provided 5,675 million gallons of water supplies for municipal purposes to 18,686 water connections through a system of 20 active wells and one standby well (West Yost Associates 2016). Groundwater from these wells is pumped into the City's distribution system, which consists of approximately 250 miles of pipe. Projected water supply for 2025 is expected to be approximately 8,462 million gallons (West Yost Associates 2016).

Water supply to the Proposed Project would be conveyed through a new water pipeline connection extending from the Proposed Project site to the existing City water main located in Dianne Drive. The Office of the City Engineer has indicated that sufficient water supply capacity

[1] The City is a member of the Stanislaus Regional Water Authority (SRWA) and has entered into a water sales agreement for delivery of 5,475 million gallons per year (15 million gallons per day [MGD]) of TID surface water. The SRWA Regional Surface Water Supply Project will be operational in 2023 (SRWA 2020).

is available to serve the Proposed Project (Bray pers. comm. 2021). The proposed water line extension would be approximately 100 feet in length.

TID operates the Don Pedro Reservoir, from which water is diverted for agricultural use and the irrigation districts' municipal and industrial customers. The Don Pedro reservoir impounds the Tuolumne River and has a storage capacity of 2,030,000 acre-feet of water (TID 2020). The reservoir is located approximately 29 miles northeast of the Proposed Project. TID delivers irrigation water from the Don Pedro Reservoir through its 250-mile-long canal system and irrigates approximately 150,000 acres of farmland throughout 307 square-miles of service area (TID 2018).

TID and the Modesto Irrigation District together hold Water Right License 011058, which allows for diversion of storage of up to 1,046,800 AFY from the Tuolumne River at the Don Pedro Dam (SWRCB 2020).

16.3.2 Wastewater Collection and Treatment Services

The City's existing sewer system consists of approximately 220 miles of sewer pipes as well as pump stations that convey wastewater to the Turlock Regional Water Quality Control Facility (RWQCF). The RWQCF provides wastewater treatment for the City of Turlock and is located approximately 1 mile south of the Proposed Project. The RWQCF has a capacity of 20 MGD and currently treats approximately 8.5 MGD (City of Turlock 2020a).

The Office of the City Engineer has indicated that sufficient wastewater treatment capacity is available to serve the Proposed Project (Bray pers. comm. 2021). An approximately 100-foot-long sewer line would be installed to connect the Proposed Project site to the existing City of Turlock sewer main located in Dianne Drive. The proposed truck rinse would have pit drains that would be connected to the sewer system with oil and soil separators.

16.3.3 Stormwater

The City of Turlock manages and maintains the City's stormwater infrastructure which consists of approximately 133 miles of gravity storm lines, 40 stormwater pump stations and associated force mains, and 45 detention/retention basins (City of Turlock 2013). Collected runoff generally flows into detention/retention basins located throughout Turlock, and sometimes is pumped to the local drainage channels for disposal after a storm event. For areas of the city that are not located near detention/retention basins, stormwater is pumped directly into the TID canals. The City maintains a discharge permit with the TID that limits the amount of stormwater that can be discharged into the canals (City of Turlock 2013).

A stormwater retention system would be constructed on the Proposed Project site and would be sized to retain all stormwater on site. Although a 60-inch storm drain located adjacent to the Proposed Project site flows south on Dianne Drive and discharges to the detention basin located south of TID Upper Lateral No. 4, the City has stated that it does not have capacity to

accept stormwater runoff generated by the Proposed Project (Bray pers. comm. 2021). Therefore, the Proposed Project would retain all stormwater on site. The City has identified improvements in the City's Storm Water Master Plan to increase the capacity of this line in the future, which may allow the Proposed Project to connect in the future.

16.3.4 Solid Waste Disposal

The City of Turlock contracts with Turlock Scavenger for solid waste collection and disposal service, along with recycling and organic waste collection. Garbage is taken to the transfer station and then hauled to the Fink Road Landfill or to the Stanislaus Resource Recovery Facility (SRRF), adjacent to the landfill (City of Turlock 2012). The Fink Road landfill is located approximately 16 miles southwest of the Proposed Project and is the only active solid waste landfill in Stanislaus County. The landfill is expected to reach capacity and close in 2052 (County of Stanislaus 2019).

During preparation for construction, the Proposed Project site will be cleared and grubbed, including the removal of on-site vegetation. Demolished materials and debris will be hauled offsite to an appropriate location such as the landfill or SRRF as mentioned above. The Proposed Project will contain an approximate 20 feet wide by 15 feet deep and 300 GSF waste enclosure that will include several trash dumpsters and recycling bins.

Three fully permitted, Class I landfills exist in California for disposal of hazardous waste: Chemical Waste Management's facility in Kettleman City, Clean Harbors' facility in Buttonwillow, and Clean Harbors facility in Westmorland (DTSC 2020). The nearest Class I landfill to the Project site is Chemical Waste Management's Kettleman facility, which is approximately 128 miles south of the Project site. For information regarding hazardous wastes at the Proposed Project site, see Chapter 10, *Hazards and Hazardous Materials.*

16.3.5 Electricity and Natural Gas

TID provides electrical service to the City of Turlock. Existing electrical lines are located along Dianne Drive and directly north of TID Upper Lateral No. 4, along the southern boundary of the Proposed Project site. TID has indicated that it is able to provide electrical service to the Proposed Project (Porath pers. comm. 2021). An approximate 150 feet electrical line would be installed in underground conduit and would extend from the existing lines to the Proposed Project site.

Natural gas in Turlock is provided by PG&E. PG&E has confirmed that it is able to provide electrical and/or natural gas service to the Proposed Project (Williams pers. comm. 2021). An approximately 100-foot-long natural gas line would extend from the Proposed Project site to PG&E's existing gas main in Dianne Drive. A generator enclosure on the site would contain an emergency generator, subbase fuel tank, exhaust system, cooling system, engine control systems, and miscellaneous cables and equipment.

16.3.6 Communications

Communications services within the city are provided by AT&T. Existing communication lines are located on poles along Dianne Drive. AT&T has indicated that telephone service is available to the Proposed Project site (Elsasser pers. comm. 2021). Communication lines would be installed within underground conduit and would extend approximately 100 feet to the Proposed Project facility.

16.4 IMPACT ANALYSIS

16.4.1 Methodology

Potential impacts on utilities and service systems were evaluated qualitatively by considering aspects of the Proposed Project. This evaluation considers the extent to which the Proposed Project would require entirely new or altered existing facilities to address immediate or foreseeable needs associated with Proposed Project operations. Effects are evaluated qualitatively based on available information on existing facilities and current demand in the Proposed Project area.

16.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact on utilities and service systems if they would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

The following criteria were identified in the IS for the Proposed Project as having no impact and are therefore not considered further in the impact analysis:

- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

16.4.3 Environmental Impacts

Impact UTL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects — Less than Significant

Water Supply

Project Construction

Water supply to the Proposed Project would be conveyed through a new water pipeline connection extending from the Project to the existing City water main located in Dianne Drive. The proposed water line extension would be approximately 100 feet in length. Short-term water demand may occur during the excavation, grading, and construction process on site. Construction activities would require water primarily for dust and mitigation purposes.

Construction of the Proposed Project would require approximately 1,040,000 gallons (approximately 3.19 acre-feet) of water during the 22-month construction period. The amount of water needed on a daily basis would vary by construction phase and activity, but it is estimated that construction of the facility would require approximately 16,000 gallons per day on average. Water would be obtained from the City water line in Dianne Drive, as authorized by a temporary water use permit. .

The construction water demand of the Proposed Project would be well within the existing capacities of water treatment and conveyance facilities in the area. The 1,040,000 gallons needed for Proposed Project construction would represent just 0.0001 percent of the City's projected water supply (approximately 8,462 million gallons); or a smaller percentage of the City's water production capabilities. As a result, construction of the Proposed Project would not require the construction of any new or expanded water facilities.

Overall, short-term construction activities would require minimal water and are not expected to have any adverse impacts on the existing water system or available water supplies. The Proposed Project would not require the construction of new or expanded water conveyance, treatment, or collection facilities with respect to construction activities. Therefore, the impacts on water facilities during construction would be **less than significant**.

Project Operation

The Proposed Project would include an on-site domestic water distribution system to serve the Proposed Project's office uses. The on-site system would be constructed in compliance with the City's building and plumbing codes in the City Municipal Code. The Proposed on-site distribution system would connect to the existing City water main located in Dianne Drive. Extension of the water infrastructure from the adjacent streets into the project site would be a routine part of the construction process analyzed in this EIR and would not have a material environmental impact. The water facility improvements would be limited to the Proposed Project site and connection points to the adjacent, existing facilities.

Operation of the Proposed Project would require approximately 675,597 gallons (approximately 2.07 acre-feet) of water annually. The amount of water needed on a daily basis would vary by operational activities taking place, but it is estimated that operation of the facility would require approximately 2,588 gallons per day on average.

Operational water demand of the Proposed Project would be well within the existing capacities of water treatment and conveyance facilities in the area. The 675,597 gallons needed annually for Proposed Project operation would represent just 0.00007 percent of the City's projected water supply (approximately 8,462 million gallons) for 2025; or a smaller percentage of the City's water production capabilities. As a result, operation of the Proposed Project would not require the construction of any new or expanded water facilities.

The Office of the City Engineer confirmed that sufficient water supply is available to serve the Proposed Project (Bray pers. comm. 2021). Therefore, the Proposed Project would not require or result in the construction of new water facilities, or the expansion of existing facilities, which could cause a significant environmental impact, and the impact would be **less than significant**.

Conclusion

Based on estimates of water use during construction and operation of the Proposed Project as described above, the impact on water supply would be **less than significant.** No mitigation is required.

Wastewater

Project Construction

No significant increase in wastewater flows is anticipated as a result of construction activities on the Project site. Sanitary services during construction would be provided by portable toilet facilities, which transport waste off-site for treatment and disposal. Therefore, during construction, potential impacts to wastewater treatment and wastewater conveyance infrastructure would be less than significant.

Project Operation

Wastewater generated at the Proposed Project would be discharged to the City's sewer system, which would treat the effluent before discharge to the San Joaquin River. As a result, such effluent would not be expected to violate water quality standards or otherwise degrade water quality. This impact is less than significant.

Conclusion

Based on estimates of wastewater use during construction and operation of the Proposed Project as described above, the impact on wastewater service would be **less than significant.** No mitigation is required.

Stormwater

Project Construction

Grading and construction activities would disturb soils and temporarily modify the stormwater flow patterns on the construction site. As described under the analysis in Chapter 11, *Hydrology and Water Quality*, the Proposed Project would be subject to requirements of the Construction General Permit, which requires the preparation of a SWPPP and identification of construction BMPs that must be implemented during construction to address potential impacts to hydrology and stormwater drainage, including soil erosion, siltation, spills, and runoff. Adherence to the regulatory standards of the Central Valley RWQCB's De Minimis Permit would ensure that any changes in stormwater drainage from the Proposed Project site are controlled during construction. Therefore, the Proposed Project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts, and the impact would be less than significant. No mitigation is required.

Project Operation

Refer to Chapter 10, *Hydrology and Water Quality,* for additional information regarding the Proposed Project's impacts related to hydrology during operation. At the Proposed Project site, the parcel is relatively flat and comprised of pervious surfaces (i.e., former agricultural lands). Stormwater generated on the site would either infiltrate into the soil or be conveyed as sheet-

flow toward the south. A stormwater retention system would be constructed on the Proposed Project site and would be sized to retain all stormwater on site. A 60-inch storm drain line located in Dianne Drive adjacent to the Proposed Project site flows south and discharges to the detention basin south of TID Upper Lateral No. 4. The Office of the City Engineer has stated that this line "has been known to surcharge during heavy rain events" and currently has no additional capacity (Bray pers. comm. 2021). Therefore, the Proposed Project would retain all stormwater on-site. The City has identified improvements in the City's Storm Water Master Plan to increase the capacity of this line in the future, which may allow the Proposed Project to connect in the future. The Proposed Project would pay its fair share towards these improvements as part of the specific plan development impact fees.

Stormwater infrastructure and maintenance in the Project vicinity is provided by the City, which utilizes detention/retention basins to capture runoff throughout the city or, for areas without these basins, pumps runoff to TID's local drainage channels for disposal after a storm event. The City maintains a discharge permit with TID that limits the amount of stormwater that can be discharged into the canals (City of Turlock 2013). The City's stormwater discharges are covered under the SWRCB's General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4s). The City's stormwater system planning and infrastructure improvements are based on the City's Storm Water Master Plan (2013).

The Proposed Project would not require or result in the construction of new offsite stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts, and the impact would be **less than significant**. No mitigation is required.

Conclusion

Based on the Proposed Project's anticipated stormwater infrastructure during construction and operation of the Proposed Project as described above, the impact on stormwater would be **less than significant.** No mitigation is required.

Electricity and Natural Gas

Project Construction

Short-term construction activities would be limited to providing power to the staging area and portable construction equipment and would not substantially increase demand for electricity. The heavy equipment used for construction is primarily powered by diesel fuel. Temporary electric power would be provided via diesel fuel generators. Given the limited nature of potential demand for electricity during construction, there would not be a need to construct new or alter existing electric transmission facilities. Impacts to local regional supplies of electricity would be less than significant.

Short-term construction activities would not result in demand for natural gas since construction activities/equipment would not require accessing existing adjacent natural gas facilities. Therefore, construction activities would not impact natural gas services, and the Proposed Project would not require new or physically altered gas transmission facilities.

Project Operation

Operation of the Proposed Project would increase onsite electricity demand compared to existing conditions. The Project site in its existing condition is agricultural land with power usage. Therefore, current demand for electricity on the site is nonexistent. As discussed in Chapter 9, *Greenhouse Gases and Energy*, the energy use consumed by the Proposed Project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the Project. The estimated electricity demand associated with the operation of the Proposed Project is 1,558,000 kWh per year. Total electricity demand in Stanislaus County in 2019 was approximately 4,750 GWh (4,750,000,000 kWh) (CEC 2021).The Proposed Project represents approximately 0.03 percent of total electricity demand in Stanislaus County.

The Proposed Project would replace existing facilities in Turlock, Modesto, and Stockton. Those three facilities would be decommissioned and either reused for other purposes or sold as surplus property. Electricity demand at the existing CAHFS Turlock Laboratory facility is approximately 117,701 kWh per year. Without considering the reduction resulting from closure of the Modesto and Stockton facilities, electricity demand at the Proposed Project site would increase approximately 13-fold compared to demand at the existing CAHFS Turlock Laboratory facility. However, the Proposed Project includes closure and consolidation of facilities. In addition, the Proposed Project would expand the capabilities of the facility to include more equipment, a necropsy suite, and the capability to test cattle. The existing CAHFS Turlock Laboratory facility was confined to the testing of chickens and smaller species. The larger cremator, while requiring more energy, is necessary to allow the CDFA and CAHFS to meet the mission-critical objective of testing larger livestock.

The Proposed Project would be required to comply with Title 24 energy efficiency measures (e.g., energy conservation, design, construction, safety) and sustainability features of the CBC. In addition, the Proposed Project would be constructed to LEED Silver certification standards. While the Proposed Project would result in a 1,224 percent increase in energy demand from the existing CAHFS Turlock Laboratory facility, as previously mentioned, this increase would represent less than a 1-percent increase in Stanislaus County energy usage. Therefore, sufficient electricity supplies would be available and energy demand for the Proposed Project would be **less than significant**.

The supply and distribution network within the area surrounding the Proposed Project site would remain essentially the same as exists currently, with the exception of onsite improvements to connect to the existing infrastructure. These onsite improvements would provide electrical service to the Proposed Project. The Proposed Project would not substantially

increase electrical demand beyond existing projections from the local electricity provider and the site is within a developed service area with existing demand. Therefore, the Proposed Project would not require the construction of any physical improvements related to the provision of electricity service.

Conclusion

Based on the Proposed Project's anticipated electrical demand during construction and operation of the Proposed Project as described above, the impact on electrical service would be **less than significant.** No mitigation is required.

Communications

Telephone, cable, and internet service lines in the vicinity would be extended to the Proposed Project site. Within the site, CDFA or its contractor(s) would be responsible for constructing adequate telecommunication facility extensions to the various Proposed Project structures. The construction and expansion of these facilities would occur on site during the site preparation and earthwork phase and are not expected to impact any telephone, cable, or internet services off site that serve the surrounding areas. Prior to any excavations, CDFA or its contractor(s) would comply with 8 CCR Section 1541, which requires excavators to determine the approximate locations of, and avoid impacts to, subsurface installations (e.g., sewer, telecommunications, fuel, electric, sewer and water lines). Therefore, the Proposed Project's impacts associated with the relocation or construction of new or expanded communications facilities would be **less than significant**.

Overall Conclusion

Based on the analysis provided above, the Proposed Project would not require or result in the relocation or construction of new or expanded utility facilities during construction or operation. The impact would be **less than significant.** No mitigation is required.

Impact UTL-2: Have insufficient water supplies to supply the project and reasonably foreseeable future development during normal, dry, and multiple dry years — Less than Significant

Project Construction

As described in Impact UTL-1, the total construction-related water demand of 1,040,000 gallons would not exceed the capacities or entitlements of existing water suppliers in the area. Water would be supplied by the City through a temporary connection, authorized by permit. Construction water demands would be modest compared to the various water sources and entitlements held by the City, as well as the groundwater supply available. If construction of the Proposed Project components were to occur in a dry year or multiple dry years, this could constrain the available supplies; however, construction water demand would be short term and

temporary. Therefore, the City would not need to obtain additional entitlements to serve a new long-term water demand. As a result, this impact would be less than significant.

Project Operation

As described in Impact UTL-1, the total annual operation water demand of 675,597 gallons would not exceed the capacities or entitlements of existing water suppliers in the area. In addition, the Urban Water Management Plan for Turlock found that the City would be able to withstand the effects of a single dry year and a 5-year drought at any period between 2025 and 2045. The City's drought risk was specifically assessed between 2021 and 2025, assuming that the next 5 years are dry years. In each case, water supplies comfortably exceed water demands. This remains true whether the drought occurs in 2021, 2045, or any year between (West Yost Associates 2020).

The estimated increase in water demand associated with the Proposed Project would represent 0.00007 percent of the City of Turlock's projected water supply (approximately 8,462 million gallons) for 2025. Of this, only 5.8 percent (or approximately 39,547 gallons) would be new demand; the remaining 94.2 percent would be relocated from the existing CAHFS Turlock Laboratory facility. The Proposed Project does not require the preparation of a Water Supply Assessment pursuant to Pub. Res. Code Section 21151.9 because the Proposed Project does not meet the definition of a "project" as set forth in Section 10912 of the California Water Code. The Proposed Project does not meet any of the criteria listed in Water Code Section 10912 and is not a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a commercial development of more than 250,000 square feet of floor space, a retail center with more than 500,000 square feet of floor space or more than 500 dwelling units.

As such, the Proposed Project would not necessitate new or expanded water entitlements, and the City would be able to accommodate the increased demand for water. Therefore, impact to water supplies would be **less than significant**.

Conclusion

Based on the analysis provided above, the Proposed Project would not require new or expanded water entitlements during construction or operation. The impact would be **less than significant.** No mitigation is required.

Impact UTL-3: Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments — Less than Significant

Project Construction

As discussed under Impact UTL-1, the Proposed Project would generate minimal wastewater during the construction phase. This wastewater would primarily be from construction workers, who would be using portable restrooms during the construction period. Therefore, the amount of wastewater that would be generated would be inconsequential to the RWQCF's operations and capacity (should the wastewater be taken to the RWQCF by the portable restroom servicing company). As described above, the RWQCF has a capacity of 20 MGD but receives an average daily flow of approximately 8.5 MGD from the collection system; therefore, the RWQCF has ample available capacity to serve additional needs and impacts would be less than significant.

Project Operation

During operation, employees and visitors at the Proposed Project site would generate wastewater from flushing toilets, washing hands, and other related activities. The total estimated amount of wastewater that would be generated by the Proposed Project is approximately 2,500 gallons per day (gpd)[2]. Of this, 24 percent (or approximately 600 gpy) would be new demand; the remaining 76 percent would be relocated from the existing CAHFS Turlock Laboratory.

Wastewater generated by during Proposed Project operations would be transmitted to the RWQCF. The treatment plant has sufficient remaining capacity to serve buildout of the general plan, including the small increase attributable to the Proposed Project. The RWQCF has a capacity of 20 MGD, but only receives an average daily flow of approximately 8.5 MGD from the collection system; therefore, an increase of 0.00013 percent be within the RWQCF's available capacity to serve additional needs. As such, the Proposed Project would not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the Proposed Project. This impact would be **less than significant**.

Conclusion

Based on the analysis provided above, the Proposed Project would not require new or expanded wastewater capacity during construction or operation. The impact would be **less than significant.** No mitigation is required.

[2] This estimate is based upon the "General Projection" for Industrial uses provided in the City of Turlock Development Services Planning Division Uniform Application.

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Chapter 17
Other Statutory Considerations

17.1 INTRODUCTION

This chapter presents discussions of significant and unavoidable impacts, growth-inducing impacts, and cumulative impacts as required by the CEQA Guidelines.

17.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires an EIR to describe any significant impacts that cannot be mitigated to a less-than-significant level. All of the impacts associated with the Proposed Project would be reduced to a less-than-significant level through the implementation of identified mitigation measures, with the exception of the impact discussed below, which has been identified as significant and unavoidable:

> **Impact AG-1:** Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use.
>
> **Impact HAZ-2:** 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.

17.3 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires that an EIR identify significant irreversible environmental changes that would be caused by the Proposed Project. These changes may include, for example, uses of non-renewable resources or provision of access to previously inaccessible areas, as well as project accidents that could result in permanent, long-term changes. Development of the Proposed Project would require a permanent commitment of natural resources resulting from the direct consumption of fossil fuels, construction materials, and energy required for the production of materials. Furthermore, construction of the Proposed Project would also result in the conversion of Prime Farmland to non-agricultural uses. As described in Chapter 4, *Agriculture,* this impact would be significant and unavoidable.

Operation of the Proposed Project would not require the future use of specific amounts of non-renewable resources aside from fuel and equipment needed for routine operation and

maintenance activities. Therefore, the primary and secondary impacts resulting from the operation of the Proposed Project would be less than significant.

Accidents, such as the release of hazardous materials, could trigger irreversible environmental damage. As discussed in Chapter 10, *Hazards and Hazards Materials*, the Proposed Project facility would work with animal tissue and other biohazardous materials and plans to dispose of animal carcasses by cremation on site. Other biohazardous material would be sterilized on site then transported off site by a third party for proper disposal. The majority of biological research conducted at the Proposed Project involves the use of relatively low-level biohazardous materials, and the Proposed Project is designed to conduct activities in compliance with BSL-2. BSL-2 is appropriate for use with biohazardous materials that are considered to be of ordinary potential hazard and may produce varying degrees of disease through accidental autoinoculation, ingestion, and skin or mucous membrane exposure.

Most biohazardous materials pose no significant hazard to the public due to their limited viability in the environment; however, the potential exists for the facility to encounter known and unknown biological hazards, and in particular aerosol-transmitted diseases, that may be classified as select agents or toxins and recommended to be handled by facilities with higher containment levels than BSL-2. These select agents or toxins may enter the facility inadvertently due to the nature of its activity in accepting potentially diseased animals and tissue for evaluation and examination, during which they may be discovered to have a select agent or toxin. This would create a significant hazard to the public and the environment and would be a significant impact. State and federal regulations and safety requirements, as described in the regulatory setting in Chapter 10, would ensure that public health and safety risks would be maintained at acceptable levels to the extent feasible; however, accidental exposure could still occur, leading to a significant irreversible change from accidental releases of toxins or select agents.

17.4 GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines requires an EIR to include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment. The analysis must also address project-related actions that would remove existing obstacles to population growth, tax existing community service facilities and require construction of new facilities that cause significant environmental effects, or encourage or facilitate other activities that could, individually or cumulatively, significantly affect the environment. A project would be considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The Proposed Project would not involve new development or infrastructure installation that could directly induce significant population growth in the Proposed Project area. Construction-related jobs would be short-term and would be anticipated to draw from the existing work force. The Proposed Project would not displace any existing housing units or persons, or create any housing units. The small amount of job growth associated with the Proposed Project's operation is not anticipated to generate sufficient economic activity such that it would result in substantial population growth. Therefore, the Proposed Project would not be growth inducing.

17.5 CUMULATIVE IMPACTS

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts reflect "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" (CEQA Guidelines Section 15355[b]).

CEQA Guidelines Section 15130(a) requires that an EIR address the cumulative impacts of a proposed project when:

- the cumulative impacts are expected to be significant; and
- the project's incremental effect is expected to be cumulatively considerable, or significant, when viewed in combination with the effects of past, current, and probable future projects.

An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR.

CEQA Guidelines Section 15130 requires an analysis of cumulative impacts to contain the following elements:

- Either a list of past, present, and probable future projects producing related cumulative impacts, or a summary of projections contained in an adopted local, regional or statewide plan that describes or evaluates conditions contributing to the cumulative effect.
- A definition of the geographic scope of the area affected by the cumulative effect, and a reasonable explanation for the geographic limitation used.
- A summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available.

- A reasonable analysis of the combined (cumulative) impacts of the relevant projects.

It must also evaluate a proposed project's potential to contribute to the significant cumulative impacts identified, and discuss feasible options for mitigating or avoiding any contributions assessed as cumulatively considerable.

The discussion of cumulative impacts is not required to provide as much detail as the discussion of the effects attributable to the project alone. Rather, the level of detail should be guided by what is practical and reasonable.

17.5.1 Methods Used in this Analysis

As mentioned above, CEQA Guidelines Section 15130 provides two recommended approaches for analyzing and preparing an adequate discussion of significant cumulative impacts. The approaches as defined in CEQA Guidelines Section 15130 are either:

- the *list approach,* which would involve listing past, present, and probable future projects producing related or cumulative impacts, including those projects outside the control of the lead agency; or

- the *projection approach,* which utilizes a summary of projections contained in an adopted general plan, a related planning document, or an adopted environmental document that evaluated regional or area-wide conditions contributing to the cumulative impact.

This discussion utilizes the list approach for the cumulative impact analysis. The level of detail of a cumulative impact analysis should consider a proposed project's geographic scope and other factors (e.g., a project's construction or operation activities, the nature of the environmental resource being examined) to ensure that the level of detail is practical and reasonable. The discussion focuses on the potential cumulative impacts of the Proposed Project for environmental issues that could be expected to be cumulatively impacted by the Proposed Project in conjunction with other past, present, and reasonably foreseeable future projects.

Resource Topics Considered and Dismissed

The Proposed Project has been determined to have the potential to make a contribution to cumulative impacts related to the following resource topics: agricultural resources and noise and vibration. GHG emissions are intrinsically a cumulative issue and are already addressed in Chapter 9, *Greenhouse Gas Emissions and Energy*; therefore, this topic is not discussed further in this section. For all other resource topics, as shown in **Table 17-1**, either significant cumulative impacts do not exist or the Proposed Project would not have the potential to make a considerable contribution to any significant cumulative impacts. These resource topics have been dismissed from consideration in the analysis of cumulative impacts and are not discussed further.

Table 17-1. Resource Topics Dismissed from Further Consideration in the Analysis of Cumulative Impacts

Resource Topic	Rationale
Air Quality	The Proposed Project would not result in air pollutant emissions that would exceed significance thresholds for project-level or cumulative impacts established by SJVAPCD. These significance thresholds were developed considering all sources of air pollutants and growth of emissions in the air basin. A project below this significance threshold is unlikely to substantially contribute to a cumulative air quality impact. The Project site is in a region that is designated in non-attainment for ozone, PM10, and PM2.5. Neither construction nor operation of the Proposed Project would result in peak daily emissions of ozone precursors that exceed the applicable SJVAPCD thresholds. Based on the findings of the human health risk assessment prepared for the Proposed Project, all modeled receptors for cancer risk are well below the threshold of 20-in-a-million. For all groups, the maximum modeled Hazard Index is below the threshold of 1.0. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to air quality would not be considerable.
Biological Resources	The Proposed Project would include mitigation resulting in less-than-significant impacts on special-status species, wetlands, and other protected biological resources. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to biological resources would not be considerable.
Cultural Resources and Tribal Cultural Resources	No cultural resources or tribal cultural resources are known to be present in the Proposed Project area. Mitigation measures are imposed to protect unanticipated discoveries and address human remains, if found. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to cultural and tribal cultural resources would not be considerable.

Resource Topic	Rationale
Geology, Soils, and Seismicity	The Proposed Project would be constructed on a relatively level site that is not near active faults and does not contain expansive soils. A SWPPP pursuant to the NPDES General Construction Permit would be required and would include erosion and sediment control BMPs, such as silt fences, straw hay bales, gravel or rock-lined ditches, water check bars, broadcasted straw, hydroseeding, or other suitable measures. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to geology, soils, and seismicity would not be considerable.
Greenhouse Gas Emissions and Energy	GHG emissions are, by their nature, cumulative impacts. Consequently, the cumulative analysis is the same as the discussion concerning Proposed Project impacts. The Proposed Project's GHG emissions would be less than 10,000 MT CO2e per year, below the identified construction and operational threshold. Because the facility is a design-build project and some emission sources cannot be modeled at this time, Mitigation Measure GHG-1 requires an evaluation of the need for additional GHG reduction measures during the design-build process as well as quantification of GHG emissions from refrigerant leaks. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to GHG emissions and energy would not be considerable.
Hazards and Hazardous Materials	The Proposed Project facility may work with transgenic materials including microorganisms, plants, and animals that have been genetically modified to assist in laboratory and research activities. The facility would work with animal tissue and other biohazardous materials and plans to dispose of animal carcasses by cremation onsite. Most biohazardous materials pose no significant hazard to the public due to their limited viability in the environment; however, others could pose a potential hazard if accidentally released or improperly handled. However, no other facilities in the area work with similar materials; therefore, there would be no significant cumulative impact.

Resource Topic	Rationale
Hydrology and Water Quality	During construction and operation, water from the Proposed Project site would be discharged to the City's sewer system for treatment. Stormwater would be retained onsite. Construction and operation of the Proposed Project would comply with regulations and requirements related to stormwater disposal and water quality. Construction-related water demands for dust control over the anticipated 22-month construction period would be met using water trucks. Operational water would be provided by the City of Turlock, through municipal groundwater and the soon-to-be-constructed SRWA Regional Surface Water Supply Project. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to hydrology and water quality would not be considerable.
Mineral Resources	No known economically viable sources of sand and gravel materials are present near the Proposed Project site. As such, the Proposed Project would not result in the substantial loss of availability of a known mineral resource that would be of value to the region or residents of the state. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to mineral resources would not be considerable.
Noise and Vibration	Construction activities for the Proposed Project would result in a substantial temporary increase in ambient noise levels, which would be reduced to a less-than-significant level by Mitigation Measure NOI-1. Noise analysis shows that project operations and routine maintenance would not result in substantial increases in ambient noise levels. Groundborne vibration could exceed thresholds during construction but would be mitigated to a less-than-significant level by Mitigation Measure NOI-2. Thus, the Project's contribution to cumulative impacts related to noise would not be considerable.
Transportation	Operation of the Proposed Project is anticipated to have a minimal effect on VMT in the region given that commute distances would be reduced. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to transportation would not be considerable.

Resource Topic	Rationale
Utilities and Service Systems	The Proposed Project would not require new or expanded entitlements or utility infrastructure to serve the facility. Water, wastewater, electricity, and other service systems have availability to serve the project. Storm drainage would be retained on site. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a significant cumulative impact. Thus, the Project's contribution to cumulative impacts related to utilities and service systems would not be considerable.

Table 17-2 defines the geographic scope that will be used in the impact analysis for each of the resource areas for which the Proposed Project could contribute to cumulative impacts.

Table 17-2. Geographic Scope for Resources with Cumulative Impacts Relevant to the Proposed Project

Resource	Geographic Scope	Explanation for the Geographic Scope
Agricultural Resources	Project Region	This area covers the Project area and surrounding areas in Stanislaus County.

Note:

"Project area" encompasses areas where physical actions that are part of the Proposed Project would take place and areas where those physical actions may affect the environment.

Existing information on current and historical conditions was used to evaluate the combined effects of past actions on each resource topic that was evaluated. For present and probable future projects and activities, a list of related actions was compiled. The effects of these past, present, and probable future actions were then evaluated in combination with those of the Proposed Project. The combined effects of past actions and the list of related present and probable future projects are described further below.

17.5.2 Cumulative Impact Analysis

Cumulative Setting

Table 17-3 lists projects planned in the Turlock area that could affect resources that would also be affected by the Proposed Project. The list was developed by reviewing the City of Turlock development project website for active and recently approved project. While not every potential cumulative project is listed, the list of cumulative projects is considered sufficiently

comprehensive and representative of the types of impacts that would be generated by other projects similar to or related to the Proposed Project. The evaluation of cumulative impacts assumes that the impacts of past and present projects are represented by baseline conditions, and that cumulative impacts are considered in the context of baseline conditions alongside reasonably foreseeable future projects.

Table 17-3. List of Past, Current, and Reasonably Foreseeable Future Projects and Activities that May Cumulatively Affect Resources of Concern for the Proposed Project

Project Title	Summary of Project Activity	Agricultural Resources
Blue Diamond	100,000 ft^2 expansion of food processing facility and truck docks and 1300 N. Washington Road	
Alpha Poultry	28,000 ft^2 expansion of poultry warehouse at 3260/3280 Liberty Square Parkway and 654 Isaac Way	X
Fulkerth 76	Gas station and convenience store and 2700 Fulkerth Road	X
Elum Industrial Campus	9.6-acre Industrial-Business Park at 812 Fransil Lane	X
Turlock One Stop Valero	Gas station and convenience store at 2500 Fulkerth Road	X
M&C Investments	16,000 ft^2 warehouse building on 1 acre at 2400 Maryann Drive	X
Fairbanks Ranch Subdivision	129 single-family homes on 40 acres in the East Tuolumne Specific Plan	X
Manjit Sandhu	36-unit apartment complex at 145 20th Century Boulevard	
Turlock-Monte Vista	348-unit apartment complex at 1525 W. Monte Vista Avenue	X
Florsheim Homes	178 single-family homes on 4.8 acres at 1137, 1201, and 1233 5th Street	X
Florsheim Homes – Crowell Subdivision	32 single-family residences at 4510 Crowell Road	X

Sources: City of Turlock 2021a, 2021b.

17.5.3 Cumulative Impacts

Impact CUM-1: Cumulative Impacts on Prime Farmland — Significant and Unavoidable

Stanislaus County's combined Important Farmland areas increased by approximately 3,000 acres from 2016, with minimal changes (+/-500 acres or less) in the Prime Farmland and Farmland of Statewide Importance categories, losses in Locally Important Farmland (3,000 acres), and gains in Unique Farmland (5,700 acres) (CDOC 2019). Within the City of Turlock's general plan study area, approximately 7,000 acres of Important Farmland exists, with Prime Farmland comprising the majority (approximately 5,000 acres) (City of Turlock 2012). Many of the cumulative projects identified in Table 17-3 involve conversion of farmland, including several large projects near the Proposed Project site. The loss of Prime Farmland in Turlock and Stanislaus County is a significant cumulative impact.

As described in Chapter 4, *Agriculture,* the Proposed Project would convert 7.5 acres of Prime Farmland to non-agricultural uses. The entire approximately 27-acre Proposed Project site is designated Prime Farmland and was farmed for row crops until CDFA's acquisition of the property in March 2020 (CDOC 2014). The City of Turlock has zoned the entire 27-acre parcel, including the Proposed Project site, for Office Commercial uses and considered conversion of this parcel to non-agricultural uses in the City's General Plan (City of Turlock 2012); however, no mitigation for the conversion of Prime Farmland was enacted. Following construction, the Proposed Project's laboratory operations would support agricultural activities but would not be considered an agricultural use. As discussed in Impact AG-1 in Chapter 4, *Agriculture*, CDFA has proposed the funding of a conservation easement on Prime Farmland in consultation with the East Stanislaus Resource Conservation District, DOC, or another farmland conservation organization or agency. With implementation of Mitigation Measure AG-1 (Fund a Conservation Easement on Prime Farmland), impacts to Prime Farmland would be reduced, although not to a less-than-significant level or entirely avoided, because the conservation of agricultural land would not create new farmland to offset the loss of farmland due to the Proposed Project. Because funding of a conservation easement cannot fully offset the loss of Prime Farmland due to the Proposed Project, this impact is considered significant and unavoidable. Therefore, the Proposed Project's conversion of 7.5 acres of Prime Farmland would make a considerable contribution to the significant cumulative impact.

Chapter 18
Alternatives Analysis

18.1 INTRODUCTION

This chapter describes the alternatives considered for the Proposed Project and evaluates their environmental impacts as compared with those of the Proposed Project. The purpose of the alternatives analysis in an EIR is to describe a range of reasonable, potentially feasible alternatives to the project that can feasibly attain most of the identified project objectives, but would reduce or avoid one or more of the project's significant impacts.

A more detailed description of the CEQA regulatory requirements for alternatives analysis is provided below. The chapter then describes the alternative development process, alternatives that were considered, and alternatives that were considered but dismissed. The chapter closes with a discussion regarding the environmentally superior alternative.

18.1.1 Regulatory Requirements

CEQA requires that an EIR evaluate a reasonable range of potentially feasible alternatives to the proposed project, including the No Project Alternative. The No Project Alternative allows decision makers to compare the impacts of approving the action against the impacts of not approving the action. While there is no clear rule for determining a reasonable range of alternatives to the proposed project, CEQA provides guidance that can be used to define the range of alternatives for consideration in the environmental document.

The alternatives described in an EIR must feasibly accomplish most of the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project (although the alternative could have greater impacts overall), and must be potentially feasible (CEQA Guidelines Section 15126.6[a]). In determining whether alternatives are potentially feasible, Lead Agencies are guided by the general definition of feasibility found in CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with CEQA Guidelines Section 15126.6(f), the Lead Agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, and jurisdictional boundaries in determining the feasibility of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the Lead Agency relied on in making the selection. It also should identify any alternatives that were considered by the Lead

Agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (CEQA Guidelines Section 15126.6[c]).

An EIR's analysis of alternatives is required to identify the environmentally superior alternative among all those considered (CEQA Guidelines Sections 15126.6[a], [e][2]). If the "no project" alternative is identified as the environmentally superior alternative, then the EIR must also identify an environmentally superior alternative among the other alternatives.

These guidelines were used in developing and evaluating the alternatives to the Proposed Project for this DEIR, as described below.

18.2 ALTERNATIVES DEVELOPMENT PROCESS

The Proposed Project's purpose and objectives, as well as its potentially significant environmental impacts, were considered while developing alternatives. Alternatives were developed to achieve most of the basic objectives of the Proposed Project, although the selected alternatives may reach these objectives to a greater or lesser extent than the Proposed Project. The alternatives also were selected to reduce the significance of anticipated adverse environmental impacts associated with the Proposed Project. A reasonable range of potentially feasible alternatives is presented in Section 18.3, "Alternatives Considered," which describes their potential impacts as well as benefits.

18.2.1 Project Goals and Objectives

The following goals and objectives are the same as those set out in Section 2.2, "Project Objectives," in Chapter 2, *Project Description*. The Proposed Project would relocate the existing CAHFS Turlock Laboratory facility to a new site and facility with adequate space for necropsy, laboratory, and office functions, enabling the agencies to provide full services to the livestock and poultry farmers in the region and consolidate two AHFSS field offices to a central location. The Proposed Project would provide adequate workspace, equipment storage, and vehicle parking for approximately 44 current employees assigned to this office, increasing to 54 total employees in the future.

Specific project objectives are as follows:

- Replace and relocate outdated and fragmented facilities with modern necropsy, laboratory, and office facilities and support functions on one campus that will maximize efficiencies while maintaining the safety requirements for facilities operating at BSL-2.
- Provide improved client (i.e., local livestock and avian providers) access to veterinary diagnostic services in a relatively underserved area.
- Increase animal disease surveillance capability.

- Provide enhanced identification of potential diseases occurring in mammalian species such as beef and dairy cattle, sheep, goats, horses, and pigs in this livestock-dense region of commercial operations, small farms and ranches, and backyard animal raisers.

- Develop sufficient space and appropriate infrastructure to meet the current and evolving threats to public and animal health, such as emerging diseases, bioterrorism, and food safety.

- Incorporate advanced diagnostic technologies and equipment to meet the demand of local clients for state-of-the-art testing services.

- Improve biosecurity measures to protect employees and prevent the spread of disease agents from the laboratory.

- Implement the joint mission of harmonizing animal disease and food safety inspection and monitoring capacity for AHFSS staff, allowing for efficient emergency preparedness planning and response in a part of the state that is rich in animal agriculture.

Alternatives were developed to meet the overarching purpose of the Proposed Project and most of the specific objectives listed above.

18.2.2 Significant Environmental Impacts of the Proposed Project

A number of impacts have been identified as significant, but would be mitigated to a less-than-significant level through implementation of mitigation measures. These impacts are listed in Table ES-1 in the Executive Summary of this DEIR.

18.2.3 Significant and Unavoidable Environmental Impacts of the Proposed Project

The following impacts have been identified as significant and unavoidable:

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use. The Proposed Project would convert approximately 7.5 acres of the 27-acre Prime Farmland parcel to non-agricultural uses by constructing the proposed laboratory facilities. Following construction, the Proposed Project's laboratory operations would support agriculture but would not be considered an agricultural use. Therefore, the Proposed Project would temporarily and permanently convert Prime Farmland, a significant impact.

Stanislaus County has established the FMP to provide mitigation options regarding agricultural conversion. However, the FMP guidelines do not apply to the Proposed Project because only residential development project are eligible for that program. Therefore, the FMP guidelines do not apply to the Proposed Project and this mitigation option is not available to CDFA. To help mitigate the severity of the significant impact, CDFA has proposed the funding of a conservation easement on Prime Farmland in consultation with the East Stanislaus Resource Conservation District, DOC, or another farmland conservation organization or agency. With implementation of Mitigation Measure AG-1 (Fund a Conservation Easement on Prime Farmland), impacts to Prime Farmland would be reduced, although not to a less-than-significant level or entirely avoided, because the conservation of agricultural land would not create new farmland to offset the loss of farmland due to the Proposed Project. Because funding of a conservation easement cannot fully offset the loss of Prime Farmland due to the Proposed Project, this impact is considered significant and unavoidable.

Impact HAZ-2: 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. Adherence to hazardous materials and waste transport regulations and CDFA policies and procedures would ensure that the Proposed Project does not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of most hazardous materials. However, the potential exists for the facility to encounter known and unknown biological hazards, and in particular ATDs, that may be classified as select agents or toxins. Some of these select agents or toxins are recommended to be handled by facilities with higher containment levels than BSL-2. This would create a significant hazard to the public and the environment and would be a significant impact.

Implementation of Mitigation Measure HAZ-1 (Compliance with Biosafety Regulations and Preparation of Biosafety Plans) would ensure that CDFA complies with regulations for handling, securing, and reporting any encounters of select agents or toxins but would not eliminate the potential for inadvertent exposure to these materials. Therefore, this impact is significant and unavoidable.

18.2.4 Site Selection

Potential site locations for the Proposed Project were selected based on multiple planning, environmental, design, and engineering considerations, including, but not limited to, the following:

- Site acreage;
- Parcel shape;
- Site grade;
- Site access;
- Structural height limitations;
- Commercial vehicular traffic;
- Local jurisdictions' special requirements;

- Constraints related to adjacent properties;
- Available utilities;
- Historic uses of the site;
- Demolition/grading requirements;
- Permits/easements; and
- Potential environmental issues related to the various CEQA resource topics.

The following were considered desirable criteria for an alternate site for the CDFA Turlock North Valley Laboratory:

Site ownership and size: Sites in public ownership or having a willing seller would facilitate the real estate transactions associated with securing an alternate site. Sites must be at least 6 to 8 acres to accommodate the required CDFA laboratory facilities. Leasing property, such as at the Stanislaus County Fairground, was not considered a viable option.

Site location and access: Sites along Hwy 99 between Turlock and Livingston would best serve the northern San Joaquin Valley region and would receive preference. Site locations must be easily accessible from both agricultural uses and transportation arterial roadways.

Existing and surrounding land uses: Vacant land sites were preferred, although properties with existing structures to be demolished and sites that are part of a larger property would also be considered. To serve the laboratory facilities, the site should not be too close to urban development and should be located outside the floodplain.

Access to utilities and infrastructure: The selected site would require access to utilities and infrastructure, including electricity, natural gas, roads, and water and wastewater systems. Sites already connected to utilities were given preferred status to make the project more economically feasible to the State.

18.3 ALTERNATIVES CONSIDERED

The No Project Alternative is considered as required by CEQA. In addition, the following alternatives were considered because they meet most of the Proposed Project's objectives, are feasible, and avoid or substantially reduce one or more significant impacts of the Proposed Project:

Alternative 1: Nunes Road Site
Alternative 2: Reduced Project

These alternatives, shown in **Figure 18-1**, were identified within the context of the primary environmental concerns raised during EIR scoping, the set of potentially feasible sites identified during the site selection process, and the significant impacts of the Proposed Project. Following

the analysis of alternatives, **Table 18-1** summarizes the alternatives considered and compares them to the Proposed Project.

18.3.1 No Project Alternative

Characteristics of this Alternative

Under the No Project Alternative, CDFA would not construct a new CDFA Turlock North Valley Laboratory or consolidate two AHFSS field offices to a central location, and would continue to provide services to the Northern San Joaquin Valley area from the three existing facilities in Turlock, Modesto, and Stockton. CAHFS' mission is to safeguard public health and California's agricultural industry with rapid and reliable diagnoses for animal diseases, including those that can affect humans, in livestock herds and poultry flocks. The existing CAHFS Turlock Laboratory facility was constructed in 1958 and can no longer support CDFA's and CAHFS' programmatic and operational needs, particularly related to mammalian pathology and necropsy.

CDFA's AHFSS Division has multiple office locations throughout the state dedicated to protecting public and animal health to ensure the safety, availability, and affordability of California's agricultural products. Relocating AHFSS staff from leased facilities in Modesto and Stockton to the new State-owned facility would consolidate resources into one permanent location and would remedy issues with existing leased space, provide cost savings to the State, and provide opportunities for increased collaboration among AHFSS staff and with CAHFS.

Under the No Project Alternative, the existing CAHFS and AHFSS facilities would continue to be used for current and projected future operations despite these deficiencies. The No Project Alternative would not achieve any of the Proposed Project's objectives but is being considered as required by CEQA Guidelines Section 15126.6(e).

Impact Analysis

Under the No Project Alternative, all of the impacts associated with the construction and operation of the Proposed Project would be avoided. No temporary construction-related impacts or long-term operational impacts would result, including significant and unavoidable impacts on Farmland. The potential for significant and unavoidable impacts from exposure to hazardous materials (potential toxins or select agents requiring higher containment than BSL-2) would continue to occur, as the existing Turlock lab is a BSL-2 facility. However, not constructing the Proposed Project would impede the ability of CDFA, CAHFS, and AHFSS to meet their operational goals and responsibilities to agricultural operations throughout the Northern San Joaquin Valley area.

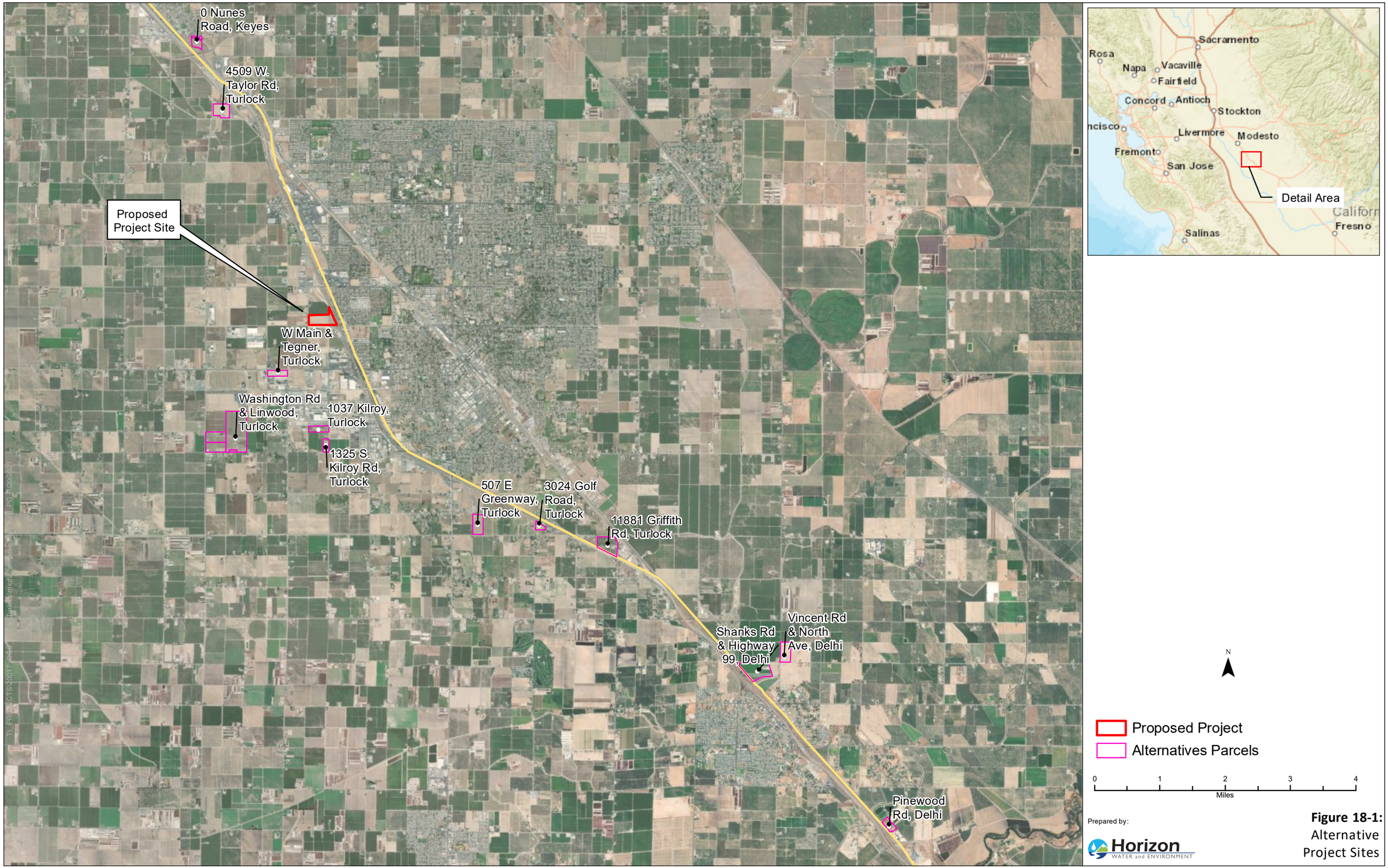

Figure 18-1: Alternative Project Sites

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Table 18-1. Summary of Alternatives and Comparison to the Proposed Project

Alternative	Characteristics	Relationship to Project Objectives	Impacts Compared to the Proposed Project
No Project Alternative	No new CDFA Turlock North Valley Laboratory or consolidation of AHFSS field offices to a central location	Would not achieve any of the Proposed Project's objectives	No construction-related or operational impacts, including significant and unavoidable impact on Farmland Significant and unavoidable impact related to exposure to hazardous materials would remain Potential for increased risks to public health and the safety, availability, and affordability of California's agricultural products
Alternative 1: Nunes Road Site	Construction and operation of a replacement laboratory facility on a 10-acre property at Nunes Road and North Golden State Boulevard in Keyes, California	Would achieve most of the Proposed Project's objectives	No agricultural conversion of Farmland Increased exposure of schools and sensitive receptors to hazardous materials and odors

Alternative	Characteristics	Relationship to Project Objectives	Impacts Compared to the Proposed Project
Alternative 2: Reduced Project	Only CAHFS facilities relocated to the site; AHSSF offices remain at their current locations; footprint reduced by 0.22 acre	Would achieve the Proposed Project's objectives relative to CAHFS but not AHFFS	Reduced impacts on agricultural conversion, air quality, greenhouse gas emissions, noise, and transportation (VMT) Increased impacts related to exposure of sensitive receptors to TACs and hazardous emissions

18.3.2 Alternative 1: Nunes Road Site

Characteristics of this Alternative

Alternative 1 would involve construction and operation of a replacement laboratory facility on a 10-acre property at Nunes Road and North Golden State Boulevard in Keyes, California. The conceptual site plan and facility operations would be similar to those of the Proposed Project.

Impact Analysis

Agriculture

Alternative 1 would be located on a vacant property that is designated by CDOC as Vacant or Disturbed. No impact related to agricultural conversion or Williamson Act contract would result.

Air Quality

Impacts of Alternative 1 on air quality would be similar to those of the Proposed Project. VMT for some employees of the existing CAHFS Turlock Laboratory site and the Modesto AFHSS office to the replacement site would increase, while VMT for employees of the Stockton AFHSS office would decrease. As a result, air pollutant emissions would change slightly but not substantially compared to the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

The proximity of the site to residential development, directly adjacent north of Nunes Road, and Keyes Elementary School, 0.1 mile northeast on Maud Avenue, would increase the potential for impacts related to odors or other emissions that could adversely affect a substantial number of people.

Biological Resources

Similar to the Proposed Project site, the Nunes Road property is vacant land. Impacts on biological resources would be similar to those of the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Cultural Resources/Tribal Cultural Resources

Impacts of Alternative 1 on cultural resources and tribal cultural resources would be similar to those of the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Geology, Soils, and Seismicity

Impacts of Alternative 1 on geology, soils, seismicity, and paleontology would be similar to those of the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Greenhouse Gas Emissions and Energy

Impacts of Alternative 1 on GHG emissions and energy use would be similar to those of the Proposed Project. VMT for some employees of the existing Turlock Laboratory site and the Modesto AFHSS office to the replacement site would increase, while VMT for employees of the Stockton AFHSS office would decrease. Operation of the laboratory facilities would result in the same level of GHG emissions and energy use as for the Proposed Project. As a result, GHG emissions and energy usage would change slightly but not substantially. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Hazards and Hazardous Materials

The Nunes Road site would be located adjacent to residential development across Nunes Road to the north. Keyes Elementary School is located 0.1 mile northeast of the site on Maud Avenue. Alternative 1 would result in a significant impact related to hazardous emissions and materials being emitted within 0.25 mile of a school, as well as increased potential for hazards to the public from routine transport, use, or disposal of hazardous materials and upset or accident conditions because of the proximity of residential uses. The significant and unavoidable impact of accidental exposure to hazardous materials would remain because the facility would continue to operate as a BSL-2 facility with the potential to come into contact with toxins or select agents that are recommended to be handled by facilities with higher containment levels.

Hydrology and Water Quality

Alternative 1 would be subject to the same water quality and stormwater regulations as the Proposed Project. No surface water bodies are present on or near the Nunes Road site. The property is identified by FEMA Flood Insurance Rate Maps as being in Zone X, area of minimal

flood hazard. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Mineral Resources

Alternative 1 would not adversely affect access to important mineral resources.

Noise

Noise impacts at the Nunes Road site would be similar to those at the Proposed Project site, although existing ambient noise levels are likely greater at the alternative site. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Transportation

Alternative 1 would bring additional delivery and commute traffic onto North Golden State Boulevard, a busy arterial roadway. Easy access is available to the site from Hwy 99 and adjacent surface streets. VMT for some employees of the existing CAHFS Turlock Laboratory site and the Modesto AFHSS office to the replacement site would increase, while VMT for employees of the Stockton AFHSS office would decrease. As a result, overall VMT would change slightly but not substantially compared to the Proposed Project.

Utilities and Service Systems

Full utility access is available to the Nunes Road site. Utilities are provided in the North Golden State Boulevard right-of-way.

18.3.3 Alternative 2: Reduced Project

Characteristics of this Alternative

Alternative 2 would be located at the same property as the Proposed Project; however, the occupied area of the site would be reduced because only CAHFS facilities would be relocated to the site. The Modesto and Stockton AHSSF offices would remain at their current locations. This alternative would reduce total staffing by 27 employees, to an ultimate total of 29 employees rather than 56 employees under the Proposed Project. Eliminating the AHSSF offices would also reduce building space by approximately 4,778 ft^2 and eliminate the need for 27 employee parking spaces (4,617 ft^2). With these modifications, Alternative 2 would occupy approximately 0.72 acre less than the Proposed Project's 7.5 acres.

Under Alternative 2, the CDFA Turlock North Valley Replacement Laboratory would support CDFA's and CAHFS' programmatic and operational needs, particularly related to mammalian pathology and necropsy. However, AHFSS staff would remain at their current leased facilities in Modesto and Stockton, which would fail to remedy issues with existing leased space, provide cost savings to the State, or provide opportunities for increased collaboration among AHFSS

staff and with CAHFS. This alternative would meet some of the primary goals of the project, but not all of them.

Impact Analysis

Agriculture

Alternative 2 would occupy 0.72 acre less land than the Proposed Project, reducing the extent of the significant and unavoidable impact related to agricultural conversion.

Air Quality

Some operational impacts of Alternative 2 on air quality would be reduced from those of the Proposed Project. The increase in employee commute trips from the Modesto AFHSS office and the Stockton AFHSS office under the Proposed Project would be eliminated. As a result, air pollutant emissions would be reduced compared to the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level. However, shifting the facility closer to sensitive receptors on the west side of Dianne Drive would increase impacts related to TAC exposure and could result in the cremator being unable to meet SJVAPCD permitting requirements.

Biological Resources

Impacts of Alternative 2 on biological resources would be similar to those of the Proposed Project because they would take place on the same site. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Cultural Resources/Tribal Cultural Resources

Impacts of Alternative 2 on cultural resources and tribal cultural resources would be similar to those of the Proposed Project because they would take place on the same site. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Geology, Soils, and Seismicity

Impacts of Alternative 2 on geology, soils, seismicity, and paleontology would be similar to those of the Proposed Project because they would take place on the same site. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Greenhouse Gas Emissions and Energy

Construction and operational impacts of Alternative 2 on GHG emissions and energy would be reduced from those of the Proposed Project because the facility would be smaller and would require less construction activity. The increase in employee commute trips from the Modesto AFHSS office and the Stockton AFHSS office under the Proposed Project would be eliminated.

As a result, GHG emissions would be reduced compared to the Proposed Project. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Hazards and Hazardous Materials

Impacts of Alternative 2 related to hazards and hazardous materials would be similar to those of the Proposed Project because they would take place on the same site. The significant and unavoidable impact of accidental exposure to hazardous materials would be exacerbated because the facility would continue to operate as a BSL-2 facility but would be closer to sensitive receptors that could come into contact with toxins or select agents that are recommended to be handled by facilities with higher containment levels.

Hydrology and Water Quality

Impacts of Alternative 2 related to hydrology and water quality would be similar to those of the Proposed Project because they would take place on the same site; however, the need to contain stormwater runoff on the site would impose additional design constraints on the facility if the site area were reduced by 0.72 acre. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Mineral Resources

Impacts of Alternative 2 related to hydrology and water quality would be similar to those of the Proposed Project because they would take place on the same site. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Noise

Noise impacts with Alternative 2 would be somewhat reduced compared to those at the Proposed Project site because fewer employees would be commuting to and from the site each day. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

Transportation

Alternative 2 would have reduced transportation impacts compared to the Proposed Project because fewer employees would be commuting to and from the site each day. VMT for some employees of the existing CAHFS Turlock Laboratory site to the replacement site would increase, while VMT for employees of the Modesto AFHSS office and the Stockton AFHSS office would no longer be a part of the project. As a result, overall VMT would be reduced substantially compared to the Proposed Project.

Utilities and Service Systems

Impacts related to utilities would be somewhat reduced compared to the Proposed Project because fewer employees would occupy the facilities; however, the need to contain

stormwater runoff on the site would impose additional design constraints on the facility if the site area were reduced by 0.72 acre. Mitigation measures would reduce the potential for significant impacts to a less-than-significant level.

18.4 ALTERNATIVES CONSIDERED AND DISMISSED

CDFA conducted an extensive site selection screening process to identify prospective locations for the Proposed Project. The initial step in the screening process was a real estate advertisement aimed at interested sellers that identified the primary site criteria, as described above in Section 18.2.4, "Site Selection." Through contacts with various interested parties and independent real estate investigations, CDFA developed a list of potential locations. Some of these locations were found to be generally unsuitable for the Proposed Project and were removed from detailed consideration:

- South Washington Road and West Linwood Avenue, Turlock
- 4509 West Taylor Road, Turlock
- Vincent Road and North Avenue, Delhi
- 507 East Greenway, Turlock
- Shanks Road and Hwy 99, Delhi

The remaining potential properties were investigated further based on the identified site criteria. The following alternatives were considered but ultimately dismissed from further analysis for one or more of the following reasons: (1) they would not sufficiently meet most of the Proposed Project objectives; (2) they were determined to be infeasible; or (3) they would not avoid or substantially reduce one or more significant impacts of the Proposed Project.

3024 Golf Road, Turlock: This property is located at the intersection of Golf Road and East Greenway Avenue in Turlock. The site is designated Grazing Land. Although Golf Road passes over Hwy 99, it does not provide freeway access, and a Caltrans rest stop is adjacent to the site on the north and east. The site is not served by city/county utilities. For these reasons, the site was determined to be infeasible.

1037 South Kilroy Road, Turlock: This 10.7-acre property is located on South Kilroy Road south of Spengler Way in Turlock. The site is mostly vacant with an occupied residence. The adjacent property to the north is a food processing plant with recently approved expansion. Although all utilities are available to the site, the southeast corner of the site is subject to a sewer easement. The configuration of the site does not permit a second point of entry. For these reasons, the site was determined to be infeasible.

1325 South Kilroy Road, Turlock: This 6.7-acre parcel is located at the northwest corner of South Kilroy Road and West Linwood Avenue in Turlock. The site is mostly vacant with a residence. Portions of the site are designated as Farmland of Statewide Importance and Unique Farmland. Properties to the east and west are actively farmed. The

configuration of the site does not permit a second point of entry. For these reasons, the site was determined to be infeasible.

11881 Griffith Road, Turlock: This 27-acre parcel is located at the intersection of Griffith Road and West Harding Road in Turlock. The property is bounded on the west by Hwy 99 and on the east by an almond processing facility and South Golden State Boulevard. The site is occupied by a residence and orchards. The site and adjacent properties are designated General Agriculture, and the site is designated as Farmland of Statewide Importance. The site is not served by city/county utilities. For these reasons, the site was determined to be infeasible.

Pinewood Road, Delhi: This 10.1-acre parcel is located on Pinewood Road in Delhi. Hwy 99 is immediately southwest of the site. The site is vacant and designated Commercial; adjacent properties are designated Agricultural. The site is designated as Farmland of Local Importance. The site is not served by city/county utilities, and PG&E gas lines in the area are high-pressure mains, not service mains. An egg farm is adjacent to the site, raising the potential for cross-contamination. The site's isolation also raised concerns. For these reasons, the site was determined to be infeasible.

West Main Street and South Tegner Road, Turlock: This property encompasses 9 to 10 acres of a 21-acre parcel at the southwest corner of West Main Street and South Tegner Road in Turlock. The site is vacant and zoned Industrial; adjacent properties are zoned Industrial, Planned Development, and Industrial Business Park. An adjacent property is occupied by an industrial facility that processes powdered cheese and milk, raising concerns about cross-contamination. For these reasons, the site was determined to be infeasible.

The remaining two sites were carried forward for evaluation in this DEIR:

- 830 Dianne Drive, Turlock (Proposed Project)
- 0 Nunes Road, Keyes (Alternative 1)

18.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Of the alternatives evaluated in detail above, Alternative 2: Reduced Project is considered the environmentally superior alternative among the alternatives (excluding the Proposed Project) carried forward for full analysis in this EIR. Alternative 2 is considered environmentally superior as it would reduce some of the environmental impacts associated with implementing the Proposed Project, including reducing the extent of a significant and unavoidable impact on agricultural resources. It would achieve the Proposed Project's objectives with regard to the CAHFS laboratory replacement but would not meet objectives related to AHFSS office consolidation. Alternative 2 would reduce air quality, GHG, and transportation impacts related to VMT because fewer employees would be commuting to the site; it would also reduce the amount of agricultural land converted to non-agricultural uses, although this impact would

remain significant and unavoidable. Alternative 2 would not reduce or avoid the significant and unavoidable impact of exposure to hazardous materials and would continue to result in exposure of sensitive receptors to TACs. In addition, shifting the site closer to sensitive receptors could result in the SJVAPCD being unable to permit the cremator. In summary, Alternative 2 would offer the most reductions in environmental impacts among the alternatives considered.

The other alternatives were not selected as the environmentally superior alternative for the following reasons:

> **No Project Alternative.** The No Project Alternative would not meet any of the Proposed Project's objectives. Not replacing the existing CAHFS Turlock Laboratory and consolidating AHFSS offices would put at risk the ability of CDFA, CAHFS, and AHFSS to accomplish their state-mandated missions, which could have significant public health and safety impacts related to avian and mammalian agricultural production in California.
>
> **Alternative 1: Nunes Road Site.** Alternative 1 would eliminate the significant and unavoidable impact of the Proposed Project related to agricultural conversion; however, the site's proximity to a school site and residential development would increase potential impacts related to hazards and hazardous materials. VMT from employee commute trips could be greater compared to the Proposed Project, resulting in somewhat greater impacts on air quality, GHG emissions, and transportation.

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Chapter 19
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None.

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Chapter 18, Alternatives

None.

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